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Private Infrastructure in East Asia

Lessons Learned in the Aftermath of the Crisis

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Foreword

In 1996 the Bank estimated East Asia's infrastructure needs over the next decade to be enormous. The region would need to invest $1.2–1.5 trillion, the equivalent of 7 percent of GDP, to sustain current and expected levels of economic growth (World Bank 1996). These massive requirements were driven by the region's rapid economic expansion, population growth, and urbanization; the need for transition economies to make up for previous underinvestment; and the expansion of trade and the globalization of the world economy. It was clear that the governments that had funded about 90 percent of these investments in the past could no longer rise to this challenge alone. The private sector would have to increase its role in financing and managing infrastructure services.

While initially cautious, private developers and lenders responded enthusiastically, making a substantial contribution to the infrastructure needs of the region. From the early 1990s private investment flows in infrastructure rose steadily to an all-time high of $16.9 billion in 1996. Private investment expanded in all infrastructure sectors, but principally for power generating plants and telecommunications systems. Lesser gains were made in the transport sectors and in water and sanitation.

The financial crisis that emerged in mid-1997 threatened to undermine much of the progress East Asia had made over the decade in mobilizing private investment and financing for infrastructure. Investment levels have declined since the crisis, and many private projects have been reevaluated and cancelled in light of increased investment risk and sharply rising costs. A broader issue is the current financial status of the public utilities—with or without private participation. Their deterioration in the wake of the crisis can profoundly affect private sector activity in the various sectors, as well as the fiscal condition of governments.

This report is part of an ongoing review of the models adopted in East Asia to promote private participation in infrastructure (PPI). It analyzes the impact of the financial crisis on investment trends by private sponsors and assesses the strengths and weaknesses of PPI models in six East Asian countries: Indonesia, Malaysia, the Philippines, the Republic of Korea, Thailand, and Vietnam. The report then draws lessons from experience in these countries to strengthen private sector provision of infrastructure and make a case for continuing fundamental reforms to improve the delivery of infrastructure services and soften the impact of potential future shocks in the region. It is hoped that government leaders and PPI practitioners will find this contribution useful.

Aldo Baietti led the research for this report and was the principal author. Recognition should also be extended to a number of other World Bank staff and consultants involved in the work—Tomoko Matsukawa, Alberto Forchielli, Patricia Tse, Mehrnaz Teymourian, Paolo Curiel, Ki-Jun Chang, Wanda Ternau, Niro Rasanayagam, Robin Sharma, J. P. Singh, Sati Achath, and PricewaterhouseCoopers, LLC.

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Abstract

Private participation in infrastructure has taken two distinct forms in the developing world. The first model, applied primarily in Latin America, focuses on privatization of existing infrastructure assets. The second, applied largely in East Asia, focuses on retaining existing assets in the public sector but seeking private sector involvement to augment capacity through new greenfield investments. The financial crisis that emerged in East Asia in mid-1997 threatened to undermine much of the progress the region had made in applying this second model to mobilize private investment and financing for infrastructure.

This report describes the background of the 1997 financial crisis in East Asia and its impact on private investment in the region's infrastructure. It then analyzes lessons learned in the aftermath of the crisis in six countries—Indonesia, Malaysia, the Philippines, the Republic of Korea, Thailand, and Vietnam—and explores how these countries can respond to the new challenges.

Overview

Private participation in infrastructure in the developing world has taken the form of two distinct models. The first focuses on privatization of existing infrastructure assets and has been applied primarily by countries in Latin America. Privatization is generally accomplished through concessions and full or partial divestitures—outright sale of assets. The privatization model is successful largely because transparent ground rules have been established for entry, exit, and conducting business in a given sector and because independent, nonpoliticized regulators oversee this activity.

The second model focuses on retaining existing assets in the public sector, but seeks private sector involvement to augment capacity through new greenfield investments. These investments are typically achieved through build, operate, and transfer schemes and variants founded mostly on contractual arrangements to support off-balance sheet financing. The East Asian countries have resorted mainly to this second approach, with greenfield projects operating along the perimeters of state-owned enterprises.

Both models involve a public-private interface, but they differ in many aspects of form and substance. In the privatization model the primary interface with the private sector is the independent regulator who oversees economic activity in relation to competition, tariff setting, and adjustments, and service quality and coverage, and who protects the public from potential monopolistic abuse when competitive forces cannot intervene. The private sector investor in these cases normally assumes the full operation, including supply and distribution aspects as well as the commercial relationship with customers. More important, the private sector investor takes on market risk.

In 1996 the World Bank estimated East Asia's infrastructure needs over the coming decade to be enormous. The region would need to invest between $1.2 and $1.5 trillion—an equivalent of 7 percent of GDP—to sustain current and expected levels of economic growth (World Bank 1996). These massive requirements were driven by the region's rapid economic expansion, the need for transition economies to make up for underinvestment in the past, rapid population growth and urbanization, the expansion of trade, and globalization of the world economy. It was clear that governments, which had funded about 90 percent of infrastructure investments in the past, could no longer rise to this challenge on their own and would need the help of the private sector to finance and manage infrastructure services.

At first cautious, private developers and lenders responded enthusiastically. Within several years they had made a substantial contribution to the infrastructure challenge in the region. Since the early 1990s private investment flows in infrastructure had risen steadily to an all-time high of $21.3 billion in 1997. Private investment expanded in all infrastructure sectors, but especially in power-generating plants and telecommunications systems. Lesser gains were made in the transport sectors and in water and sanitation.

The financial crisis that emerged in mid-1997 undermined much of the progress that East Asia had made over the previous decade in mobilizing private investment for infrastructure. Investment and financing levels deteriorated, and many private projects were

reevaluated and cancelled because of increased investment risk and sharply rising costs.

This study describes the general background of the 1997 financial crisis in East Asia and its impact on private investment in East Asian infrastructure. It then analyzes lessons learned in the aftermath of the crisis in six countries—Indonesia, Malaysia, the Philippines, the Republic of Korea, Thailand, and Vietnam—and focuses on how these countries can respond to the new challenges. The report has benefited from earlier studies on the economic impact of the crisis in these countries, particularly the Asian Development Bank's report on the effects on private infrastructure investment in the region and the report by the East Asia Analytical Unit of the Department of Foreign Affairs and Trade of the Australian Government on private infrastructure in Asia.

1 The Economic Context

East Asia's economic development and growth record over the two decades before the 1997 crisis was spectacular, and was accompanied by notable welfare gains. Poverty declined, and life expectancy, infant mortality, and literacy indicators all improved.

This outstanding performance was mainly a result of government efforts to keep inflation low and exchange rates competitive through conservative macroeconomic policies, and to encourage high savings rates by keeping interest rates positive in real terms and effectively protecting deposits in financial institutions. Governments also promoted absorption of foreign technology and investments in education. The combination of rapid growth, low debt ratios, and a history of sound macroeconomic management attracted foreign capital.

The Crisis

After some two decades of uninterrupted economic growth, the East Asian countries were hit by a financial crisis in mid-1997, driven by the following factors:

- Massive capital inflows had been attracted to the region because high economic growth and political stability had instilled confidence in foreign investors. Liberalization of the financial sector had also made it easier for banks and domestic corporations to tap foreign sources for both debt and equity capital.
- The easy flow of funds and the push from international capital markets into the poorly regulated local capital markets encouraged heavy borrowing by the financial and corporate sectors. The result was a dramatic increase in short-term debt as a percentage of overall external debt during the crisis. Institutions became highly leveraged and began to finance long-term investments with short-term debt capital.
- The tightening of the money supply to limit credit expansion led to rising domestic interest rates and a widening differential between domestic and foreign rates. The larger spread between domestic and foreign interest rates had the perverse effect of attracting more capital inflows, as investors borrowed abroad to fund local investments.

- Exports had slowed as world demand began to fall in 1996. The substantial drop in export growth—from about 20 percent to about 4 percent in U.S. dollars in one year—was further compounded by the depreciation of the yen, a significant decline in the prices of some export products, and the appreciation of real effective exchange rates in some of the countries.

The East Asian countries were affected to varying degrees.[1] The macroeconomic imbalances hit Thailand the most severely, but all the other countries of the region were affected in a chain reaction. The financial and economic impacts were tremendous, in many respects unlike anything that had been seen before in the modern industrial era.

Economic Recovery

East Asian economies began to recover by the end of 1998. The recession in the five countries hurt most by the crisis—Indonesia, Malaysia, the Philippines, Korea, and Thailand—began to turn around after mid-1998 for three reasons. First, changes in macroeconomic policy as the exchange rate stabilized allowed interest rates to fall and consumption to recover. Assertive structural adjustments helped restore credit flows and boosted consumer and investor confidence. Finally, the regional recovery, sponsored by strong growth in the United States and Europe, bolstered external demand.

With the economic recovery in these countries have come stable currencies, replenished foreign exchange reserves, rising government revenues, lower interest rates, and low and unthreatening inflation. Some financial markets are even above their pre-crisis highs. In 1999 equity markets in the five most-affected countries moved up by more than 40 percent. Even the transition economy of Vietnam continues to grow at a steady pace. The real exchange rate remains depreciated by 15–25 percent relative to that in mid-1997. The depreciated exchange rate has helped export performance, as has the recovery in the internal electronics market. Korea, where investments during the boom were oriented more toward tradables, has benefited the most from the rebound in electronics. But Malaysia and Thailand have also received a boost. Indonesia has benefited from the rise in international oil prices.

The recovery has also been underpinned by the turnaround in consumption. During the crisis consumption among middle- and upper-class income groups fell because of the loss of wealth from the decline in capital markets and property values. But because of the lower interest rates and a fiscal stimulus, by early 1999 consumption rose in Malaysia, Korea, and Thailand. In Indonesia and the Philippines, in the absence of a serious fiscal stimulus, the recovery has not been as impressive.

The restoration of investor confidence contributed to positive developments in the balance of payments. Even though private banks and other creditors continued to reduce their exposure in 1999, portfolio investment rebounded in the second half of 1998 and nearly reached pre-crisis levels in 1999. Rising portfolio inflows and the willingness of savers to invest in financial markets facilitated the recovery of equities. By the end of 1999, stock market capitalization was more than 50 percent higher in U.S. dollar terms than in September of that year for all five countries.

In 1999 gross private inflows increased. Korea was the largest beneficiary, receiving

net inflows. Foreign direct investment rose sharply in Thailand, probably because of its restructuring efforts, and in Korea, because of its liberalization of foreign direct investment. Korea also received a sharp upswing in equity flows in 1999 following its liberalization of portfolio and long-term capital flows.

But despite the recovery, the East Asian countries have many challenges to overcome. The first is the increase in debt. The five crisis countries have yet to complete writing down their national balance sheets, restructuring debts and absorbing the associated capital losses, and undertaking operational and ownership restructuring. Banks are saddled with nonperforming loans that at the end of 1999 hovered around 35 percent in Indonesia, 10 percent in Malaysia, 20 percent in Korea, and 40 percent in Thailand. Government debt—driven by financial bailouts and deficit spending to jump-start demand—has risen to 35–50 percent of GDP in Korea, Malaysia, and Thailand, and to 90–100 percent in Indonesia and the Philippines.

Second, the increase in insecurity is especially pronounced among low-income and urban households. In the five crisis countries the number of people living below the international poverty line ($1 a day in 1993 purchasing power parity terms) has jumped significantly. Unemployment, though down, is still unacceptably high in the five countries and is rising in Vietnam.

Third, investment, particularly in property, remains depressed. Onshore and offshore investment finance is limited by weak institutions and cautious external lenders. Working capital and investment are largely being financed internally, in part by nonpayment of debt service. There is a danger that investment will remain dampened over the long term by the overhang of property investment and the weakness of financial intermediaries.

Fourth, the recovery is still vulnerable to shifts in market sentiment and external events. Governments that depend on healthy revenues to service debt might suddenly have to cut back on social and other important spending. Investors have become more alert and ready to flee at the slightest provocation, and the poor and near-poor may be less patient with governments that ask them to sacrifice more.

To sustain the current recovery and the economic expansion, it is essential that the East Asian countries put in place macroeconomic and structural policies for capital flows that encourage stability. Without a healthy financial system, the recovery will be subject to sudden portfolio shifts by foreign investors wary of corporations' capacity to service debt. Without corporate workouts and operational restructuring, potentially viable corporations will not be considered creditworthy. Moreover, new loans will not be available for productive uses when there are adverse long-term implications for growth.

Finally, economic recovery in the East Asia region can be facilitated by investments in infrastructure, especially investments by the private sector. The next section provides background information on private investment in East Asian infrastructure, highlights trends in private participation in infrastructure in the region, and describes the status of reform in the infrastructure sectors in each country.

2 Private Participation in Infrastructure

Private investment in East Asian infrastructure is dominated by greenfield projects. In these projects a private entity or a public-private joint venture builds and operates a new facility under a build, operate, and own (BOO) or build, operate, and transfer (BOT) contract. BOO- and BOT-type greenfield projects are simple to understand, structure, and implement, and are less politically difficult than outright privatization. Since such projects operate on the perimeter of the established network of state-owned enterprises, they require no fundamental structural reform of the state sector.

In the model typically seen in East Asia, the private sector enters into an agreement with a state-owned enterprise to provide bulk supply under specified terms and conditions. State enterprises act as single buyers and commit to purchase products or services from private producers under long-term contracts, usually between 10 and 30 years. In the absence of a regulatory framework in a given sector set by national law, a set of contracts are developed to regulate the relationship among the private sector, the state enterprises, and the government. These contracts are designed to reflect the preferred basis of risk allocation among these parties. For private participation, the private company must assume operating risk during the operating period or assume development and operating risk during the contract period. Moreover, the operator must consist of one or more corporate entities with significant private equity participation that are separate from any government agency.

The nature of these transactions, along with their requirement for contractual arrangements, creates the need for a number of enhancements, typically in the form of guarantees to make these projects "bankable." These enhancements depend on the deal structure, the nature of the project, the private participation in infrastructure (PPI) modality selected, and the financial standing of the public enterprises and of the government. In adverse conditions—such as the crisis in East Asia—these interfaces have become the main source of conflicts, financial stress, and contractual disputes. East Asian governments have provided a wide variety of guarantees to support PPI, including market or demand guarantees; guarantees on contractual obligations of state

enterprises; guarantees for political risk, such as foreign exchange variability convertibility and policy changes; and guarantees for financial market disruption and fluctuations.

East Asian countries have had more success than other developing countries in attracting private investment in infrastructure. Between 1990 and 1997, Indonesia, Malaysia, the Philippines, and Thailand accounted for about a third of the total private power projects contracted in the developing world. Between 1994 and 1999, 261 private infrastructure projects reached financial closure in Indonesia, Korea, Malaysia, the Philippines, and Thailand. The combined value of the total private investment in these countries was about $75 billion.[2]

Impact of the Crisis on Infrastructure

The East Asian crisis markedly decelerated private investment in the region's infrastructure. Deteriorating macroeconomic conditions and credit standing of sovereign governments increased risks to the private sector, especially in committing funds to long-term projects. Moreover, project economies deteriorated because of excessive currency devaluation, coupled with lower growth scenarios. Currency devaluation also weakened the financial credibility of local contractual parties such as state-owned utilities. A weakening domestic financial system diverted local resources to debt management that otherwise would have been available to finance new projects. Thus, overall, the crisis substantially diminished the project economies and the financial viability of public utilities—thereby reducing the interest of foreign financiers, particularly debt providers, in committing funds in long-term infrastructure projects.

The impact of the crisis varied from one country to another and from one sector to another. For example, Indonesia and the Philippines were the countries most severely affected in the power sector, mainly because foreign currency obligations of PPI projects—as a result of foreign borrowing and foreign currency–denominated power purchase obligations—were much higher than in Malaysia and Thailand, where local funds were mobilized to finance long-term projects and power purchase obligations were denominated in local currency.

The crisis profoundly affected the infrastructure market in several ways:

- *Private investor confidence collapsed.* During the first half of 1997 investments in private infrastructure projects in East Asia were stalled. Total investments in these sectors dropped from $16,977 million in 1996 to $11,435 million in 1997 and $7,352 million in 1998 (table 1).
- *Financing for infrastructure projects dried up.* With unprecedented losses in the banking sector attributed to nonperforming corporate accounts, financing for infrastructure projects vanished. Bankers in the region diverted the little liquidity they had left to financing losses and refinancing and restructuring existing corporate loans rather than to new issues, particularly risky infrastructure deals. While the financial sector crisis did not affect some countries as adversely as it did Indonesia, Korea, and Thailand, most financing for PPI activities had emanated from regional and international offerings, not local ones. With little progress toward the development of local capital markets in the region, financing—

Table 1 Indicators of economic growth and private infrastructure investments before and after the crisis (millions of dollars unless otherwise indicated)

Country	GDP growth (percent)		Net private capital flows		Investments in private infrastructure		
	1996	1997	1996	1997	1996	1997	1998
Indonesia	7.8	4.9	16,167	10,863	7,341	2,910	446
Korea, Rep. of	7.1	5.5	21,057	13,069	—	1,491	3,428
Malaysia	8.6	7.8	12,804	9,312	5,385	2,572	675
Philippines	5.8	5.2	4,988	4,164	2,468	3,171	1,984
Thailand	5.5	-0.4	13,563	3,444	1,578	1,151	819
Vietnam	9.3	8.8	2,107	1,993	205	140	—

— Not available.
Source: World Bank Central Development Database and PPI Database.

particularly through long-term debt—became extremely scarce for new greenfield projects.

- *Overall new investment activity in various infrastructure sectors stalled.* At first largely financial, the crisis spilled over into the infrastructure and industrial sectors, with noticeable downturns in new investment activity. Activity in the transport sector dropped significantly—by 75 percent from its 1996 levels—and no new investments were made in the water sector. The pipeline of greenfield projects in power also declined markedly. Decline in demand and lower widespread industrial output led to substantial excess capacity in the power and transportation sectors. Existing port operations faced similar problems from the decline of interregional trade activity.
- *Demand for telecommunications services fell, and the cost of technology rose.* The crisis also hurt the demand for telecommunications services, increased the cost of technology (for example, handsets), and saddled some operators with a higher debt burden. Countries with significant state involvement in private telecommunication schemes took longer to adjust to the crisis because of weak institutional response and procedural bottlenecks. For example, contract renegotiations between state enterprises and private investors—because of excessive currency devaluation, a decrease in demand for services, and the deteriorating financial health of state enterprises—were lengthy and painful in Indonesia and Thailand, where private operators were contracted to build and operate telecommunication assets under joint venture or revenue-sharing arrangements with state enterprises. In competitive markets where many players had varying financial positions, such as in Malaysia and the Philippines, the crisis accelerated a trend toward industry consolidation.
- *Demand for infrastructure services decreased, and excess capacity grew, especially in the transport and power sectors.* The economic slowdown also made it more difficult to raise tariffs. The need to cover the effects of the currency devaluation on projects with a sizable foreign exchange component further eroded the ability of tariffs to cover the economic cost of services. Moreover, shrinking household spending capacity made people less willing and less able to pay for infrastructure services.

- *The cost of total investments increased.* The region's large currency devaluations increased the cost of investments and future operations of projects with sizable foreign exchange content. That meant that many planned and ongoing projects were not financially viable without significant tariff increases.
- *Governments became overexposed to risks.* The guarantees and contractual obligations governments had assumed in promoting private projects made them vulnerable to various risks. To build investor confidence in infrastructure, governments in some cases entered into guaranteed take-or-pay contracts, thus bearing most of the retail demand risk in private sector water and electricity production projects. In other cases governments provided extensive credit guarantees to investors in infrastructure projects, particularly in the power sector, thus bearing the commercial risk that should have been left to the private sector. With the large decline in demand after the onset of the crisis, governments had to face up to their commitments, which in several instances were sizable. Contractual liabilities and losses were estimated at $11 billion in Indonesia and $6 billion in the Philippines. Other countries did not experience such severe fiscal impacts. Malaysia and Thailand were successful in negotiating many of their contractual agreements in local currency. Korea and Vietnam, which did not have significant PPI activities, had very little exposure to contingent liabilities.

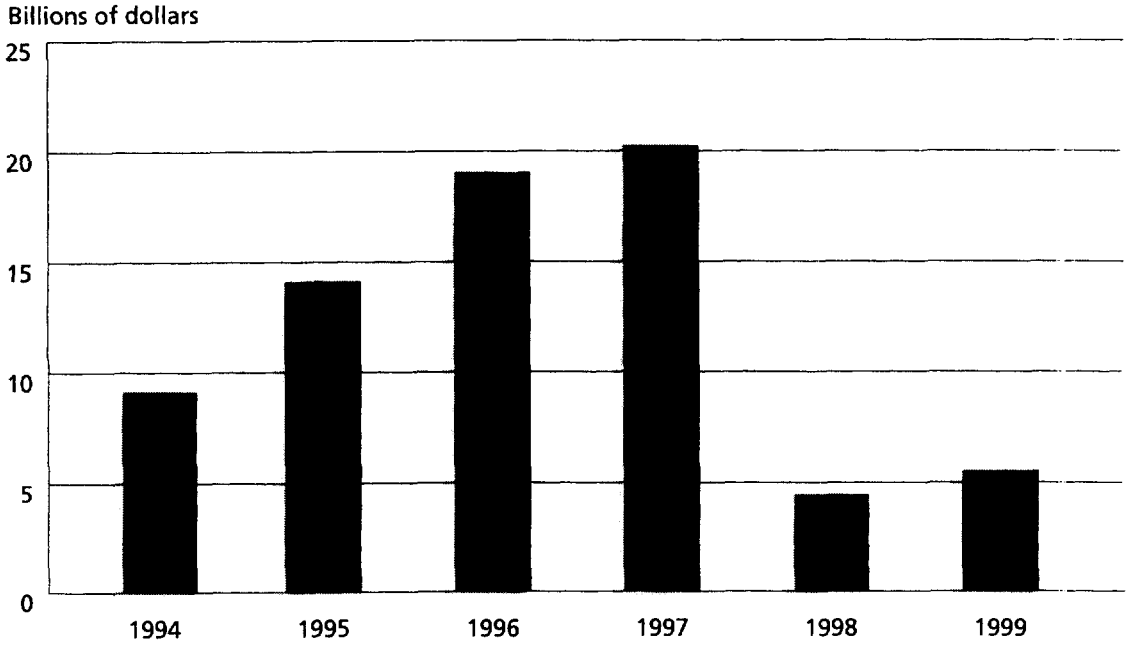
Despite the adverse developments, private investors still had a large appetite for acquiring assets. The crisis actually benefited some developers because of the commercial risk guarantees and foreign exchange indexing obtained from governments on past transactions. The devaluation of the domestic currencies in East Asia made the acquisition of assets much more attractive to foreign buyers, and many infrastructure multinationals saw in the crisis opportunities to enter or expand their positions in East Asia. Thus while the crisis made it difficult for governments to continue pursuing their PPI agenda through greenfield projects, it allowed privatization of existing assets and fundamental structural reforms.

Trends in Private Participation in Infrastructure Investment, 1994–99

Total private investment in infrastructure in the six East Asian countries increased by 57 percent from 1994 to 1995 and by another 24 percent in from 1995 to 1996 and then peaked at $20.2 billion in 1997 (figure 1). PPI was hit hard by the crisis, falling by 80 percent in 1998 before beginning to recover in 1999, picking up by 24 percent to reach about $5.5 billion—about one-fourth of the peak 1997 figure. Of the $75 billion in private funds invested in infrastructure projects during 1994–99, the Philippines, Indonesia, and Malaysia accounted for about 80 percent (figure 2).

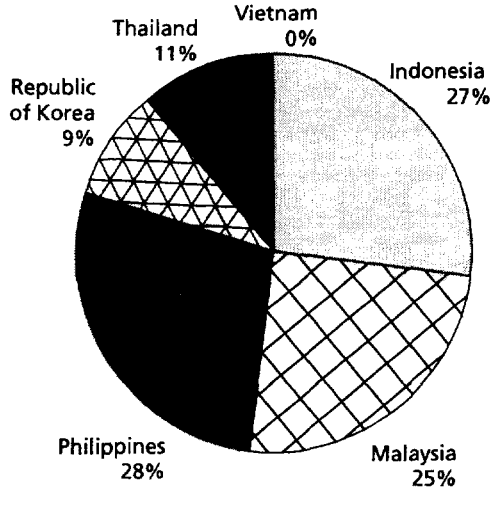
The Philippines, Indonesia, Malaysia, and Thailand accounted for about 91 percent of the private projects that were closed during the period (figure 3). Korea and Vietnam had the least private investment and the fewest private infrastructure projects. Although Thailand had received only about 11 percent of the total combined private investment, it accounted for about 17 percent of the projects closed during the period.

Figure 1 Investment trend in private infrastructure in East Asia, 1994–99



Note: Data include India, the Republic of Korea, Malaysia, Philippines, Thailand, and Vietnam.
Source: World Bank PPI Database, various years.

Figure 2 Investment in private infrastructure projects in East Asia, by country, 1994–99



Source: World Bank PPI Database, various years.

As in most other developing countries, PPI in East Asia has largely been confined to the power and telecommunications sectors, which received about $50.8 billion, or 68 percent of combined investment flows during 1994–99 (table 2). Power was the largest recipient, with 40 percent of total private investment, followed by telecommunications, with 29 percent. Private investment was lowest in the water sector, at $7.5 billion—10 percent of the combined total (figure 4).

Telecommunications also accounted for the largest share of the total number of projects closed during 1994–99 at 40.6 percent, followed by power at 33 percent. Water accounted for only 7 percent (figure 5).

In 1998 project finance slowed significantly in East Asia. The decline was less severe in Korea and Vietnam because these countries had seen relatively little mobilization of private investment in infrastructure sectors. Most seriously affected were Indonesia and Malaysia,

Table 2 Private investment in infrastructure in East Asia, by sector, 1994–99 (millions of dollars)

Sector	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*Total*
Power	5,004	7,293	7,481	6,681	1,674	1,210	29,343
Water	90	163	530	6,053	157	551	7,544
Transport	2,150	2,770	4,942	3,855	668	1,732	16,117
Telecommunications	2,187	4,077	6,190	4,791	2,188	2,011	21,444
Total	9,433	14,303	19,144	21,381	4,688	5,504	74,453

Note: Data may not sum to total shown because of rounding.
Source: World Bank PPI Database.

which had received significant private capital in the infrastructure sector in 1996—about $12.6 billion, more than 20 percent of the combined total infrastructure investment in those countries. By 1998 private investment in infrastructure in 1998 was only about 13 percent of the 1996 level in Malaysia and 6 percent in Indonesia. In Thailand and the Philippines, private investment flow in 1998 averaged about half of that in 1996.

Sector by Sector Overview

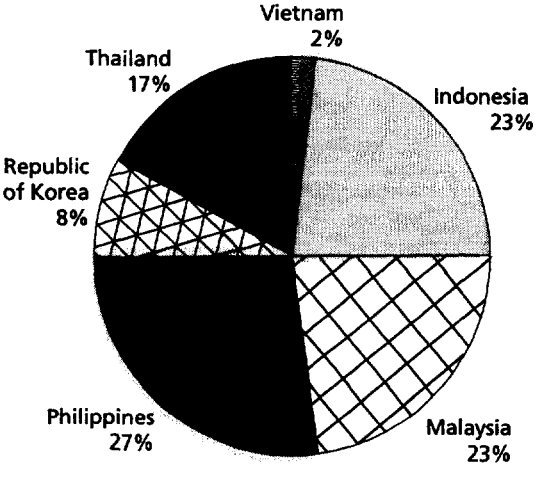
This section considers PPI investment trends in the power, telecommunications, transport, and water sectors in East Asia.

Power

Most power utilities in East Asian countries are vertically integrated and publicly owned entities. As the demand for electricity in the region increased, private investors were allowed to enter the electricity generation market, leaving distribution and transmission to the public sector. During 1994–99 private investment in the power sector totaled about $29.3 billion (see table 2), or almost 40 percent of total private investment in infrastructure over the period. The private sector financed, constructed, and operated greenfield power-generating plants, and state-owned utilities undertook to buy electricity in bulk under long term take-or-pay contracts. These developments were driven mainly by:

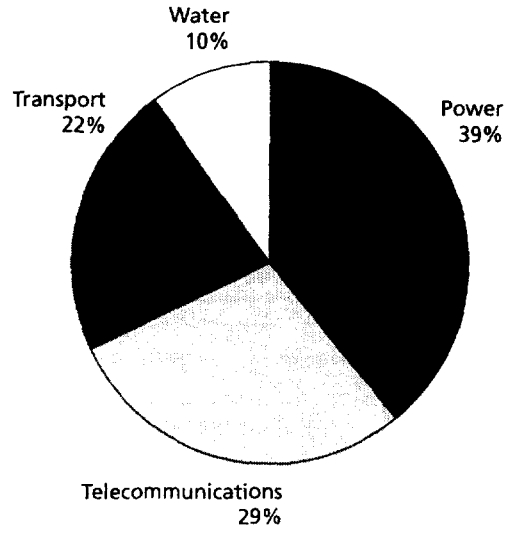
- The need to increase capacity to accommodate growing demand.
- The absence of a need for fundamental reform of the structure of the public sector, since such projects operate on the perimeter of the established network of state enterprises.

Figure 3 Number of private projects closed in East Asia, by country, 1994–99



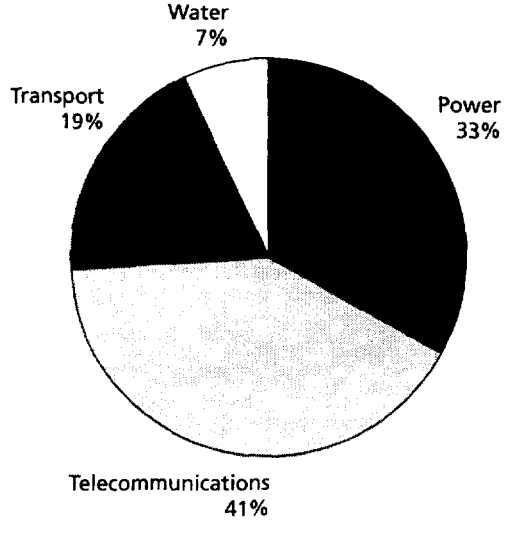
Source: World Bank PPI Database.

Figure 4 Investment in private infrastructure in East Asia, by sector, 1994–99



Source: World Bank PPI Database.

Figure 5 Number of private infrastructure projects in East Asia closed, by sector, 1994–99



Source: World Bank PPI Database.

- Little or no market risk and the possibility of minimizing other risks through power purchase agreements and government guarantees.
- The relative simplicity of understanding, structuring, and implementing the plants.

Telecommunications

Telecommunications was the first infrastructure sector in the East Asian countries to successfully attract substantial private capital. During 1994–99 private investment in telecommunications totaled about $21.4 billion—about 28 percent of the total private investment in the region's infrastructure during the period. Between 1994 and 1998, 106 private telecommunication projects were committed or concluded.

As in the power sector, more than 80 percent of the projects were BOO- or BOT-type greenfield projects, which also represented about 83 percent of the total private investment in telecommunications during the period. Technological improvements, high growth potential, consumer willingness to pay for services, relatively short payback periods, and the potential of foreign currency earnings contributed to successful private participation in the sector. Owing to these industry characteristics, countries were able to attract private capital in telecommunications without providing significant sovereign guarantees. Most countries have merely had to open the sector to private investors to see private capital inflow.

The structure of private participation in telecommunications in the region is mixed. State enterprises in Thailand and Vietnam have monopoly rights in the telecommunication business, and the private sector competes for the market and operates through revenue sharing and joint venture arrangements with state enterprises. In contrast, in Malaysia and

the Philippines the private sector competes with state enterprises in the market. In Korea domestic services, both local and long distance, are state monopolies, while international and cellular services are competitive.

Transport

Compared with that in the power sector, private investment in the transport sector in East Asia is limited. During 1994–99 private investment in transport made up only about 22 percent of the total investment in infrastructure. Rail accounted for the highest share of private investment in the sector—about 45 percent—and ports for the lowest—about 16 percent. The largest number of projects—17 out of 29—were in roads, followed by 8 in ports and 4 in rail.

With the exception of a few road projects, most private transport projects were BOO- or BOT-type greenfield projects. Transport projects—especially greenfield road projects—have unique features that make them complex to structure and implement, and thus not very attractive to private investors. These include high initial costs for project development, the difficulty of acquiring land and right of way, the lengthy process of environmental clearance, the unpredictability of geotechnical conditions, frequent cost overruns, and the uncertainty of demand because of competing transport modes and other available alternatives. The only advantage roads have over power or telecommunications is that they are less technology intensive.

Worldwide experience shows that considerable time is needed to conclude negotiations for successful private participation in road and rail projects. Some projects never come to fruition, such as private participation in toll roads using the BOT approach in Indonesia (Van der Ven 1996), and failure rates are high during or after implementation. For example, in the Bangkok Second Stage Expressway, the lack of well-defined procedures for land acquisition, toll rate adjustments, and efficient conflict resolution resulted in lengthy disputes between private developers and the government (Japan Ministry of Construction and World Bank 1998).

Only in Malaysia has a large proportion of private investment—more than 45 percent—gone into roads. PPI in the Malaysian road system has been relatively successful because of government-directed lending (local currency–based soft loans) to road projects through state-owned financial and nonfinancial enterprises, equity participation by public sector entities, and government willingness to provide minimum revenue guarantees and consider and negotiate unsolicited proposals.

Water

In East Asia water was the sector least attractive to private investors, in terms of both dollar amount ($7.5 billion during 1990–99) and number of projects. Other than the Manila and Jakarta water concessions, no definite PPI structure has emerged, and the sector is dominated by state-owned enterprises. Between 1994 and 1999 private investment in water was 10 percent of the total dollar value invested in infrastructure, and only 7 percent of the total number of PPI projects committed or concluded in the region. Of total private investment during the period, about 55 percent was invested in BOO- and BOT-type projects.

In contrast to the power sector, where private participation is mostly in generation, in the water sector private participation is generally in distribution concessions rather than BOT-type bulk water production and supply plants. Depending on the type of agreement, the concessionaires take over the replace-

ment, management, expansion, and modernization of water distribution systems. This model was recently introduced in the Philippines and Indonesia. Unlike in greenfield BOT agreements, in which the off-takers, mostly state-owned utilities, bear market risks, in water distribution the concessionaires generally assume market (demand) risks and revenue collection risk. For example, concessionaires in the Manila water concessions assume market risks by selling water directly to consumers. In the Jakarta water concessions, the management fee is based on the volume of water billed and collected. Hence some degree of market reform—including the elimination of subsidies—is necessary for significant private participation in the water sector. This need increases the difficulty and complexity of designing PPI projects.

Malaysia has BOT-type bulk water supply contracts similar to greenfield power generation arrangements to supply water in bulk to local water authorities. The government has also contracted out the management and operation of state-owned water treatment plants. By 1996 more than 50 percent of Malaysia's potable water production capacity was under private management (Haarmeyer and Mody 1997). The major limitation of BOO- and BOT-type private water schemes, such as those in Malaysia, is that they provide little opportunity for replacement, improvement, and modernization of antiquated water distribution systems and equipment.

Financing Structure and Terms

In many PPI transactions reliance on foreign debt was a major constraint in East Asia, particularly in projects with large imported components. During 1994–98 the share of foreign debt in total financing of a typical power project was close to 57 percent. Heavy financing through foreign debt is very risky in many PPI transactions, particularly in power, water, and most transport projects, because earnings are mostly in local currency, and a currency mismatch exposes projects to sizable exchange rate risks. Telecommunications and port projects are less sensitive to such risks because they also have foreign exchange earnings.

Traditionally commercial banks have provided project finance. In East Asia banks were more willing and able than other debt providers to structure debt packages, matching project complexity and risks. Most recent private projects in a sample of 29 reviewed for this study in terms of their financial structure sourced funds from commercial banks, and about 32 percent of debts were uncovered. Covered loans were advanced under the political risk insurance coverage of export credit agencies and multilateral agencies. In addition to providing risk coverage, export credit agencies and multilateral agencies have also directly lent to private infrastructure projects. Direct lending by export credit agencies and other bilateral agencies accounted for about 16 percent of the total debt in the projects reviewed. Bond financing comprised less than 10 percent of total debt, including refinancing.

The two most important sources of foreign loans for these projects were European and Japanese financial institutions. European institutions accounted for about 28 of total lending, and Japanese institutions for about 20 percent. About 30 percent of lending by foreign financial institutions was channeled through domestic financial institutions. The reasons may be that domestic financial institutions need to be active in infrastructure

lending, and that inexpensive foreign money was available from the interbank market. Since the crisis, nonperforming loans have been a major problem for domestic commercial banks. These loans have not only dried up liquidity in the domestic financial markets, affecting fresh lending to new projects, but also contributed to the failure of several large commercial banks in the region.

As many studies now show, the Asian economic crisis had its roots in the plentiful supply of cheap foreign credit, which created bubbles in stock markets and real estate and resulted in overexpansion of the industrial sector. The infrastructure sector was not immune to this euphoria, as it had access to easy financing terms.

Competition among international banks for a share of investment in East Asian countries was intense. Lenders resorted to aggressive credit pricing and favorable loan packaging in structuring various transactions. Competition was stronger in the second half of 1996 and in 1997. For example, the Paiton power project in Indonesia, which closed in July 1996, was the first large independent power producer in the country. It accounted for about 60–70 percent of debts covered by export credit agency insurance and less than 20 percent of uncovered debts. In contrast, the country's Salak Geothermal and Palembang independent power producers, which closed in 1996–97, accounted for about 60–70 percent of uncovered debt, without any political risk coverage. Although Salak Geothermal and Palembang are smaller projects, these investments signal aggressive risk taking by international debt providers.

Lending competition among international debt providers was also reflected in longer maturity and tighter margins. In Indonesia the $180 million commercial debt to Paiton I had a maturity of 8.5 years, with an interest rate of LIBOR plus 200 basis points. In contrast, in the Salak Geothermal power project the $100 million in uncovered debt had a maturity of 10 years and an interest rate of LIBOR plus 125 basis point. Similarly, Palembang secured $110 million uncovered debt for 12 years at an interest rate of LIBOR plus 162.5 basis points (Capital Data Project Financeware 1999).

The proportion of foreign debt in the total debt of independent power producers was much higher in the Philippines (97 percent) and Indonesia (86 percent). As a result the impact of the crisis was severer in these countries, mainly because of excessive devaluation. Although the state-owned utilities in the Philippines and Indonesia could have absorbed some exchange losses by passing through tariff increases, this was politically and socially unacceptable to the governments. In contrast, the much lower proportion of foreign debt in total debt of independent power producers in Malaysia (10 percent) and Thailand (25 percent) minimized the impact of devaluation. In Malaysia government policy to furnish soft loans through public and quasi-public financial institutions was instrumental in reducing the need for independent power producers to rely on foreign debt.

The Status of Reforms in East Asian Countries

All six countries in this study have plans to privatize state infrastructure enterprises and move toward more competitive markets by reforming the infrastructure sector. But to date there has been minimal reform activity. Some of the reform programs that have been implemented are limited in the size and value of the transaction or limited to a particular sector.

Most reform activities in all countries have been in the telecommunications sector, with other infrastructure sectors yet to take off. The status of reforms in the six study countries is summarized below. Greater detail is provided in the annex.

Indonesia

Indonesia has made significant strides in expanding private participation in infrastructure. Since the early 1990s the private sector has been allowed to invest in power generation activities or toll road BOTs. The first independent power producer power purchase agreement for Paiton I was signed in February 1994. In the power sector private sponsors were also allowed to submit unsolicited proposals to develop generation plants. By December 1997 the state power sector enterprise had signed 26 power purchase agreements with private investors,[3] though only one independent power plant was in operation by end-1997.

Indonesia was hard hit by the crisis. From 1994 to 1999, total private investment in Indonesian infrastructure was more than $20 billion, with $7.3 billion in 1996 and $3.6 billion in 1997. There was no investment in 1998 and the country had only $429 million in 1999.

The crisis led to plummeting demand for infrastructure and related services. Traffic over the state telecommunication enterprise's local access network fell by about 23 percent, and demand for cellular subscriptions decreased significantly after the crisis when handset prices more than doubled. Input price guarantees by state infrastructure enterprises resulted in severe cash flow shortages. State enterprises sought to amend power purchase agreements and BOT and BOO agreements to pay producers or service providers in local currency at a rate well below the market. Most power projects, including some that had reached financial disclosure and begun construction, were suspended[4] or cancelled by presidential decree in late 1997.

In 1998 a cross-sectoral regulation was issued in the form of a presidential decree (Keppres 7 of 1998) and implemented by a decree of the Minister for State Planning. While there has been much discussion about how this decree would be applied in individual sectors (gas, ports, power, telecommunications, toll roads, and water), anticipated sectoral implementing regulations have not been developed. Future implementation has been confused by a major restructuring of responsibilities in the central government and by the imminent implementation of the law on regional autonomy (decentralization). At the central level, the broad powers given the new State Ministry of Public Works include private infrastructure provision in sectors outside those normally associated with public works ministries. The Ministry of National Planning and the National Planning Agency (Bappenas) have been demoted from ministerial rank, and the State Ministry of Public Works is seeking to take over the role established for it by Keppres 7. Progress in some areas is impeded by differences of opinion about sector restructuring and privatization policy between sector ministries and the State Minister for Investment and state enterprises, and by slow progress in settling on appropriate policies for tariff regulation.

The new Telecommunications Law approved by the parliament in September 1999 is scheduled to come into force by the end of 2000. This law should open the door for more active private sector participation and competition. Other new laws expected to expand the role and clarify processes for pri-

vate investment in infrastructure are being drafted. These include laws for electric power, oil, and gas. The country is increasingly recognizing the need to attract private investment and hence to establish appropriate regulatory policies and institutions.

Malaysia

Infrastructure development has been a high priority in Malaysia over the past two decades. Power and transportation were identified as critical infrastructure sectors for private participation, often under BOT or BOO schemes. By early 1996 about 165 privatization and private participation projects were completed. The Seventh Malaysia Plan covering 1996–2000 envisaged private sector contributions of $27.2 billion, or 78 percent of total infrastructure spending during the plan period. The broad policies under this plan were designed to:

- Provide full government support to private participation schemes through finance through soft loans, equity investments, and directed lending through banks and provident funds, as well as explicit or implicit guarantees.[5]
- Foster maximum local participation in infrastructure development, especially by developing capital markets through involving quasi-government institutions such as pension funds or the Employee Provident Fund[6] and by permitting infrastructure power companies to be listed on the Kuala Lumpur Stock Exchange.

In 1996 total private investment in infrastructure in Malaysia was about $4.3 billion. This fell to $3.76 billion in 1997, $1.3 billion in 1998, and $393 million in 1999. Although new agreements in the power sector were concluded in 1997 and 1998, not all of them have progressed.

The most significant initiative to help finance ongoing projects is the establishment of the Infrastructure Development Corporation, which is to be merged with the government's development bank to form the Development and Infrastructure Bank of Malaysia. Other recent developments are the forthcoming consolidation of mergers at Port Klang; the accumulated debts of many privatized companies, such as Tenaga and Prime Utilities, and in the telecommunications sector and public transportation in Kuala Lumpur; the revival of some infrastructure projects, such as the monorail and the train station at Brickfields to connect to the Kuala Lumpur International Airport; and two water companies privatized in May 1999 through concessions.

To attract foreign investment, the government announced in 1999 an increase in the ceiling on foreign ownership in telecommunications companies, from 30 to 61 percent. This will be allowed only on a case-by-case basis and will be valid only for the next five years. Foreign investors will have to scale back their ownership to 49 percent.

The Philippines

The Philippines is the most advanced of the six countries in this study in reform of infrastructure sectors. By 1994 the government had already introduced independent power producers in power generation (there are now 33), relaxed foreign ownership restrictions, deregulated the telecommunications sector, and revised and modified the BOT law, the first in Asia in 1990. These revisions facilitated private participation through several variants of BOT schemes, streamlined project approval, and allowed the consideration of unsolicited project proposals. Work is in progress to develop a

regulatory authority for the water sector, and a power reform bill to reform and privatize the National Power Corporation is pending.

Total investment during 1994–95 was $20.7 billion. Investment decreased from $2.9 billion in 1997 to $1.7 billion in 1998 and $647 million in 1999. The country's need for investment in infrastructure over the next 10 years is estimated at $36–$45 billion, about 7 percent of the annual GDP.

There have been some major investments in the power and the water sectors, and the almost complete privatization of telecommunications, but development in other infrastructure sectors has been slow. With the exception of the Manila Waterworks and Sewerage System, a significant achievement, only the Light Rail Transit has been noteworthy. About half of the country's total private investment in infrastructure is in the power sector. The National Power Corporation and existing independent power producers are responsible for power generation, while distribution is predominantly managed by the private Manila Electric Company. The distribution of electricity is also handled by smaller power utilities and by public sector rural electric cooperatives.

Some serious and significant reform efforts have materialized in the Philippines, but much more effort is required to increase private participation and introduce financial discipline in other infrastructure sectors, such as transport and telecommunications. The slow pace of reform can be attributed to:

- A faulty decentralization process that limits the negotiating capability of local authorities.
- Weak and inadequate regulatory systems and institutions.
- Government reluctance to assume additional liabilities (BOT law restricts the government in extending explicit guarantees).
- The lack of effective competition policies and restrictions on private sector entry.

Republic of Korea

The Republic of Korea has yet to take significant steps to mobilize private investment in infrastructure. During 1994–99 private investment in infrastructure was only about 9 percent of the total private investment in the region. In 1997 private capital flows to infrastructure projects were only $3.7 billion. Flows decreased to $1.1 billion in 1998 and then rose to $1.52 billion in 1999.

Infrastructure in Korea is narrowly focused on transport-related facilities, such as airports, highways, railways, roads, and seaports. Infrastructure development is still dominated by state-owned enterprises, local governments, and the national government, with public monopolies and local governments delivering services and line ministries dealing with legal, policy, and regulatory issues. The power sector is dominated by the Korea Electric Power Corporation, and the water sector by the Korea Water Resource Corporation and local governments. The telecommunications sector is partially competitive, with cellular, long distance, and international services now open to the private sector, but local services are still controlled by the state-owned Korea Telecom. In 1997 British Telecom invested about $396 million in a mobile phone company, LG Telecom.

In 1994 the Private Capital Inducement Promotion Act was introduced to encourage private participation in infrastructure, primarily for greenfield investments in transport. The government targeted 40 primary infra-

structure facilities for private participation in the sector. But because of a number of weaknesses in the act and the opaque selection process, only five of the targeted transportation projects are in the construction phase.

In July 1998 the Planning and Budget Committee announced policies to:

- Privatize 11 state enterprises, including Korea Telecom, the Korea Electric Power Corporation, and the Korea Gas Corporation.
- Create a regulatory framework for private participation.
- Introduce competition in the market.
- Address labor issues.
- Find optimal privatization techniques.

Except for the sale of some shares of Korea Telecom to the general public, little progress has been made on these initiatives. The government has opened the power generation market to the private sector to set up independent power producers that will compete with Korea Electric Power Corporation spinoffs. Five independent power producers have been awarded licenses to develop power plants and sell electricity to the Korea Electric Power Corporation for 20–25 years at negotiated prices. Only one plant is operating, and the others are searching for financiers.

In April 1999 the Private Investment Act replaced the Private Capital Inducement Promotion Act. The act aims to encourage private investment, including foreign capital in all infrastructure sectors—airports, gas, ports, power, telecommunications, transportation, and water and sewage facilities, provide tax and other incentives to private investors, and improve investment selection processes. But the act still lacks the full mandate to include existing infrastructure assets in its program that are particularly important for cohesiveness in the sectors.

On March 9, 2000, the Ministry of Planning and Budget announced eight PPI projects, all in the transport sector (two roads, two bridges, one rail, one light-rail transit, and two ports), and subsequently established eight project task teams within the Private Infrastructure Investment Center of Korea (PICKO). Each team will be supported by a relevant ministry official along with PICKO staff and will be responsible for front-line contact with the private sector.

Thailand

During 1994–99 total private investment in infrastructure in Thailand was more than $8.0 billion, and 44 projects closed. Investment fell from $2.2 billion in 1996 to $1.24 billion in 1997, declining further to $600 million in 1998 and $191 million in 1999.

Declining private investment and the ongoing financial problems of the country's utilities have had a severe impact on Thailand's PPI program. As a result most new infrastructure development and investment programs have been revised. Future power demand projections were lowered by about 20 percent, and several independent power producers were either delayed or deferred at least until 2002–03. The Electricity Generating Authority of Thailand revised the standard power purchase agreement that was part of its independent power producer program and sought to renegotiate its terms. Private developers of independent power producers cancelled six power projects because they were unable to raise finance locally.

Thailand is proceeding with its privatization agenda. The Corporatization Act passed in 1999 facilitates corporatization and private participation in state enterprises.

Detailed restructuring plans for the telecommunications and energy sectors are ready. Upcoming transactions include the strategic sale or public offering of a stake in Thai Airways International, the Airports Authority of Thailand (regional airports), the Petroleum Authority of Thailand, the Ratchaburi Power Plant, the Communications Authority of Thailand, and the Telephone Organization of Thailand.

While the country is fully committed to privatizing state-owned enterprises to improve their efficiency and improve the quality of services offered to the public, it has also placed a high priority on modernizing and strengthening its regulatory framework and institutions. Thailand's commitment to reforming state enterprises and implementing a divestiture program is articulated under the 1998 Privatization Master Plan, which aims to improve the economic efficiency of key industries including energy, telecommunications, transport, and water. The privatization efforts are designed to enable competitive markets to emerge in these sectors within a framework that stimulates private investment, protects consumers, and provides a basis for Thailand's long-term competitiveness in the global economy.

Progress on privatization and state enterprise reform had been slower than anticipated when the Privatization Master Plan was passed. Reasons included the government's heavy reform agenda; a weak legal framework and inadequate institutional capacity to implement the agenda; the lack of a strongly articulated strategy or campaign to build consensus among stakeholders, especially state enterprise employees and consumers, on the benefits of privatization; and the failure to mount a systematic public information campaign, which led to antiforeign sentiments and resistance from employee unions. In spite of these drawbacks, the privatization agenda has been steadily implemented. But some areas, such as the water sector, have lagged behind, and employee issues have yet to be addressed systematically. Remaining legal reforms are likely to move slowly, and institutional capacity, especially in regulation, remains a key issue.

The government has made progress in the legal framework to facilitate state enterprise reform and divestiture. Its emphasis has been on creating a strong regulatory framework and independent regulatory bodies free of political intervention to ensure a stable investment environment and help protect consumer interest. The State Enterprise Corporatization Act was passed in December 1999 to allow the government to corporatize individual enterprises without further parliamentary involvement. The 1999 Alien Business Act and the Act on Leasing of Property for Commerce and Industry promote direct investment and greater liberalization. The State Employees Labor Relations Act repeals restrictions on the rights of state enterprise workers to unionize and strike.

In the telecommunications sector, the Frequency Management Act will allow for a National Communications Commission to facilitate the establishment of an independent regulator in the telecommunications sector by October 2000. The Telecom Bill providing guidelines for this regulator should be presented to the parliament by July 2000. Converting existing BTO concession contracts is one of the most challenging issues facing full liberalization of the sector. The cabinet recently issued guidelines for conversion concessions, and a committee has been formed to oversee the conversion process by mid-2001.

The cabinet has approved the regulatory framework and market structure for the energy and transport sectors, and independent regulators are expected by the end of 2001. A comprehensive Transport Sector Framework Reform Study completed in April 1999 yielded a framework for improved policy and planning, development of a modal regulatory framework, and the direction of reform for the 14 state enterprises in the sector. The partial privatization of Thai Airways is expected in September 2000, and the privatization of the Airports Authority of Thailand is being accelerated. The state expects to sell the Airport Authority's major airports this year and shares early next year. In the energy sector, the National Energy Policy Office is preparing a detailed plan for transition to a power pool to be completed by July 2000. The partial privatization of the Ratchburi Power Generating Plant is expected in September 2000.

Reforms in the water and wastewater sector have lagged behind, mainly because the government has focused on other sectors, but there are plans to accelerate these reforms.

Vietnam

The public sector still dominates in all sectors of the economy in Vietnam, and infrastructure is no exception. During 1994–99 total private investment flows in infrastructure were only $360 million, less than 0.5 percent of the total private investment in the region. In 1998 no private investments were made in infrastructure.

In 1992 the government amended the Law on Foreign Investment to facilitate BOT projects, but there is still little evidence of significant PPI activities in the country. In September 1997 state enterprise reform, including divestiture of many enterprises, was identified as one of the government's principal objectives. In reality, however, the government centralized state enterprisesoperating in "key" sectors, including the Vietnam Posts and Telecommunications Corporation and the Electricity of Vietnam Corporation.[7]

The impact of the East Asian financial crisis on public utilities was not as significant in Vietnam as in the other crisis countries, which had much higher foreign exchange exposure and contractual commitments to independent power producers. Public utilities in Vietnam have negligible foreign debts, PPI activity is minimal, and there was less depreciation of the local currency. Nonetheless, the impact of the crisis on the government was severe as private investors became concerned about convertibility issues.

In early 1998 the government announced an ambitious equitization program to reform more than 1,500 state enterprises by the end of 2000. The program called for converting state enterprises into shareholding corporations, selling state enterprise shares to private investors, and allowing foreigners to buy shares in approved Vietnamese enterprises. As part of the program the government approved privatization law, company law, and foreign investment law to recognize private ownership of assets and facilitate purchase of shares by foreigners. The program is still far short of the target. In August 1998 new regulations for investment in BOT projects were announced, although BOT projects are likely to proceed on an ad hoc basis as long as the following outstanding issues go unresolved:[8]

- Private sector entry into some sectors—airports, existing ports and railways—is still closed, and private ownership and

management of telecommunication operations is restricted.

- Foreign investment in infrastructure is still restricted, and domestic investment is limited by both financial and technical constraints.
- The general business environment for long-term investments is very risky for private investors.
- There is still little formal commitment from the government to implement real reforms in the infrastructure sectors.

3 LESSONS FROM THE CRISIS: HOW SHOULD THE COUNTRIES RESPOND?

The East Asian financial crisis has yielded lessons that can serve as a basis for setting future policy in the region. It has also highlighted issues of concern to investors that must be addressed.

Policy Lessons

The crisis showed the need for fundamental reforms in the infrastructure sectors, for choosing which functions should be transferred to private operators, developing domestic markets and financial discipline, managing contingent liabilities, dealing with accountability, and strengthening foreign exchange planning and management.

The need for fundamental reforms

The main lesson in the aftermath of the financial crisis is that *fundamental reforms should place a clear priority on sustained growth in the infrastructure sectors.*

The long period of prosperity in East Asia mitigated the urgency of substantive reforms in the infrastructure sectors, a luxury not available to most nations in Latin America. For many of those nations, reform was the only answer in the wake of crisis, and it was there that many of the developing world's infrastructure sector reforms have been enacted. Unlike their counterpart governments in Latin America, the East Asian economies relied solely on their past formula for economic success—an agile private sector with a heavy export orientation. When the financial crisis hit, Indonesia, Thailand, and especially the Republic of Korea were heavily exposed, with sizable holdings in public sector enterprises in both infrastructure and industry. This vulnerability was compounded by a relatively weak state in each of the countries and the financial sector's inability to exert corporate governance and banking supervision. In many cases national budgets still provided state utilities with large subsidies to sustain them financially and politically.

The exception was perhaps the Philippines, whose development pattern resembled that of its Latin American counterparts more than that of its own neighbors. Since the country had already gone through its own financial sector crisis and reform in the mid-1980s,[9] the newly elected Aquino and Ramos

governments openly embraced a wide reform agenda, the most important aspect of which was reforming the infrastructure sectors. By the end of the Ramos administration, the Philippines had privatized most of its public corporations and made substantial progress in bringing private sector participation into the main infrastructure enterprises.

While the PPI agenda in the Philippines is not complete, the considerable progress achieved in the past decade could partly explain why the country was not affected as badly by the crisis as some of its more prosperous neighbors. The regional contagion resulting from the crisis is not surprising, since many economies in the region had adopted similar models for economic development—PPI was certainly no exception. After a decade of disappointing economic performance from the mid-1980s to early 1990s, the Philippines was beginning to provide the needed leadership in promoting the PPI agenda in the region. This effort has been greatly undermined by the recent political turmoil.

The rest of East Asia has clearly approached PPI as a solution to problems of financing rather than efficiency. As a result they still have much work to do, particularly in moving forcefully toward four fundamental principles of reform:

- *Market reforms* to transform publicly owned state monopolies into competitive market structures, while introducing transparent competitive bidding policies to enhance competition for and in the market.
- *Financial discipline* to ensure cost recovery and returns on debt as well as equity through tariff reforms and improved accountancy standards, and to reduce the inherent financing risks in these sectors associated with the currency "mismatch" through the development of domestic capital markets.
- *Business environment reforms* to depoliticize decisionmaking by creating and fostering independent regulatory bodies to oversee and regulate economic behavior in the infrastructure sectors, and to protect legitimate operators and consumers from potential abuses. There are very few independent regulatory bodies in East Asia, and where they exist, they are largely ineffective.
- *Ownership reform* to introduce the essential element of corporate governance into infrastructure enterprises through the disciplines of the market, and to redirect the role of government away from commercial risks and toward its core functions in the social sector and in regulation.

The choice of modalities for private participation in infrastructure

The crisis showed *that the success of PPI initiatives does not necessarily rest purely on the PPI modality selected, but also on the actual activity assumed or transferred to a private proponent.*

The success of PPI initiatives in a country should be assessed by scrutinizing whether service-level functions of infrastructure enterprises, rather than bulk supply alone, are transferred to a private operator. In PPI there is an important distinction between the operations that may actually be transferred to the private sector. For a typical infrastructure service such as a water utility, the operation can be subdivided into bulk supply and service level. In many cases BOT contracts with greenfield investments are awarded for what is generally regarded as the far simpler bulk supply operation, rather than the more politically charged issues of retail rate setting and the technical, commercial, and financial inef-

ficiencies related to distributing the services directly to consumers. Hence, true reform of the sector will mean that PPI transactions not only involve bulk supply but also deal with the service level of operations. The main issue is whether the commercial risk of the retail operation—market risk in its many forms—has also been transferred to the private sector, irrespective of financing or ownership issues. This is because the crisis has exposed the typical BOT scheme, particularly for bulk supply, to substantial weaknesses when retail tariffs cannot be readily adjusted.

On the one hand, investors and financiers have shielded themselves with back-to-back offtake and supply agreements, government guarantees or assurances to limit investment and financing risk, or at least the perception that risks were effectively mitigated. Proper investment due diligence by both the public and private sectors of factors affecting commitments—demand forecasts, affordability, and ability to pay—may have been overlooked because of the perceived comfort of contractual agreements backed by guarantees. The sovereign guarantee may have kept many private sponsors and financiers from scrutinizing the state monopolies' financial condition, policy toward cost recovery, and existing and future supply commitments that would affect their financial strength to honor commitments down the road. What may have mattered most was the ability of the contractual cash flows to cover the cost of the investment and earn a reasonable return over its life. Private financiers were legitimately concerned about governments' ability to ensure convertibility of payments back into foreign exchange, since much of the initial investment and financing was in hard currencies. With government guarantees on both counts, private investors relied less on the financial merits of investments or the strength of the state monopolies.

Governments, on the other hand, took advantage of the perceived simplicity of these schemes and the low up-front cost of taking advantage of the off-budget financing opportunities offered. But they did not tackle the most politically charged issues of service-level improvements and full cost recovery tariff setting.

The crisis also provided additional insight into the weaknesses of BOT-type schemes implemented without the necessary fiscal, financial, and regulatory discipline in the market:

- Bulk supply in power and water do not address the most common inefficiencies in these sectors—technical and nontechnical losses at the distribution or service levels—and have allowed governments to avoid substantive reforms in the sector, such as setting cost recovery tariffs or eliminating cross-subsidies.
- In bulk supply transactions with the public interface, the public sector still has little accountability for overplanning. Strong evidence suggests that the crisis may have accelerated, not created, the financial problems, because of excess financial capacity now found in the power sectors in countries well along the independent power producer route.
- As financiers and sponsors confronted the crisis, BOT schemes founded on contractual enhancements designed to mitigate risks may have precluded the more fundamental aspects of project feasibility and due diligence. Sovereign guarantees are little comfort when governments may not have the capacity to back them.
- One-off limited recourse projects lack the corporate presence of more substantive

privatizations, such as divestitures and concessions. Financing investments on a balance sheet basis not only substantially reduces financing problems, but also makes more financing and management options available in cases of severe economic downturns such as the East Asian crisis.

Finance or ownership?

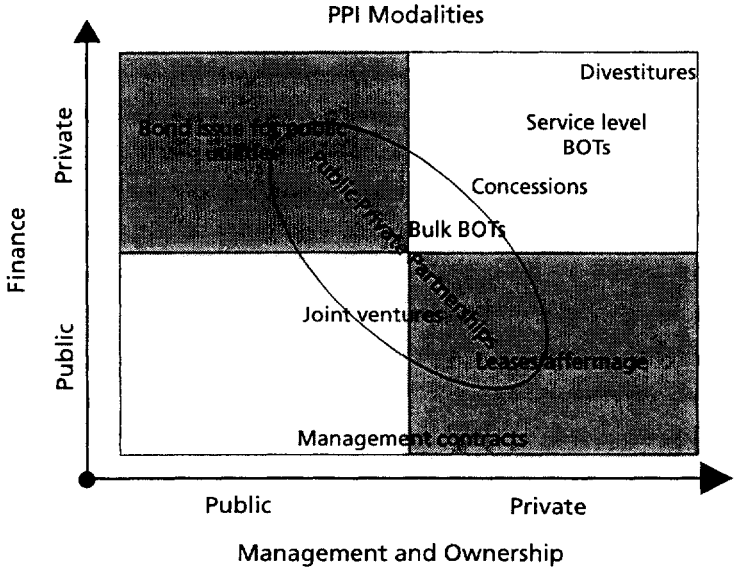
The crisis may have yielded answers to improving the hierarchy of PPI models so that proper policy guidance can be given to government clients and the success of future PPI programs and transactions can be evaluated. It forced a closer look at the tradeoffs between financing and efficiency in PPI models that are not purely divestiture and fall into a gray area between public and private. These models include affermage, concessions, leases, joint ventures, and management contracts (figure 6).

The matrix shows PPI modalities falling within various finance and management and ownership options. The most desirable PPI modality in every respect is found in the upper right-hand quadrant, which involves both private finance and private ownership. The purely public options in the lower left-hand quadrant have consistently declined in acceptance over recent years but continue to recur. In some cases these options are even supported and financed by the World Bank.

The two other quadrants of the matrix are the gray areas of the framework. The lower right-hand quadrant blends public finance and private management, which have typically been associated with leases, affermage, and management contracts. The upper left-hand quadrant represents transactions carried out by public utilities with private financing. These have mostly occurred in Malaysia, the Republic of Korea, and Thailand, where the financial markets have developed sufficiently for such transactions, but are seen throughout the region.

In the Philippines, for example, the Light Rail 3 BOT has many of these features. Its lease-back arrangement allowed for financing

Figure 6 Tradeoff between private financing and private participation in infrastructure



from private sources, but the government retained the management and the commercial risk. Vietnam has also relied heavily on private finance to supplement public sources, notably through its business cooperative contracts in the telecommunications sector. These contracts allow private operators to finance investments in new equipment and technology. Investors then take a specified share of the total proceeds from the operations, but the operations are retained by the state.

The oval ring around the four quadrants in the matrix encompasses schemes that combine both public and private financing, typically with private management. Examples of public-private partnerships are private hydropower schemes, off- and on-site development of industrial zones, and many transport projects that cannot be financially sustained purely on a private basis.

Experience from the East Asian crisis suggests that viable PPI prescriptions should have the following attributes:

- *Market risk should be transferred effectively.* First and foremost, as much as possible of the business or commercial risk of the operation should be transferred to the private sponsor. To promote any privatization of public infrastructure services, the government should promote sector reform to enhance payment capacity of end users for infrastructure service. If projects cannot be financially viable purely as private undertakings, then explicit, transparent, and closed-ended financial support may be appropriate government interventions.
- *Service-level inefficiencies must be addressed.* This should be done either directly through transactions that bring in private operators at the service level or through government reforms that set cost recovery tariffs (in some cases phased over time) or eliminate subsidies. In such cases, allocating power generation to independent power producers should only be accepted practice if appropriate reforms are implemented in the public monopoly to reduce the financial risks to governments associated with these transactions.
- *Private finance should be a complementary benefit, not an end in itself.* Private finance should be an ultimate goal, but should not drive decisions to the extent that other reforms conducive to PPI are overlooked, as happened in East Asia. In many respects state utilities that have successfully tapped the public bond markets have little excuse for transferring commercial risk, ownership, and management through privatization to the private sector. In such cases all the preconditions for such transfer are present except political will.
- *Transition models should bridge financing gaps in markets.* Given market circumstances, tapping private financing sources for greenfield investment in the form of equity or debt may not be possible. Where the market has not matured sufficiently to reduce investment risk, PPI modalities can serve as an effective transition to this end.
- *Models for private participation in infrastructure must be sector specific.* BOT schemes have been relatively successful in the power sector, but not in the transport and water sectors. Many projects in the transport sector cannot be financially viable as purely private ventures. In the water sector different models need to be developed for small geographic areas where economies of scale are less than optional.

These lessons show that there are far fewer options for private infrastructure investment than are commonly prescribed

by the best practice literature. Experience with management contracts has been disappointing. These contracts have consistently fallen short of expectations and in practice are not widely promoted as viable PPI models. Joint ventures in East Asia have been most common in China. But these are limited because they do not fully remove the government from the business venture and its risks. Moreover, joint ventures continue to allow governments to interfere politically with the commercial operation of enterprises.

Lease and affermage arrangements have received less support, but they have valuable attributes and can be important links for a viable roadmap in many countries in the region. These arrangements are being tested in the water sector in the Philippines as a way to introduce private sector participation in rural towns where investment risk is high but there is a basis for private sector involvement to improve operational efficiency. If properly executed, lease and affermage arrangements can transfer commercial risk to private sector operators, even though they do not bring their own risk capital and financing to the transactions.

Bulk supply BOTs have been by far the most common PPI transactions in East Asia. As mentioned above, these have serious financial consequences unless proper reforms are in place to support the enhanced contractual arrangements they entail. The last two PPI modalities, concessions and divestitures, have generally involved effective transfer of all operations to private sponsors. Concessions and divestitures require properly executed reforms because they may not attract new investment easily, but these remain the most desirable outcomes. They should drive governments in their quest to expand infrastructure services for the public.

Domestic financial markets and financial discipline

The swift and steep devaluations that arose from the contagion of the East Asia crisis underscore the need to resolve a number of financial problems in the infrastructure sectors across the region.

- *The need for long-term domestic financing.* Problems of financial management and cost recovery created by the currency mismatch between revenue and costs is a principal financing issue for PPI. Accounting rules have not helped in this regard, because they are not normally set up to accommodate fluctuations as wide as those resulting from the financial crisis. Some governments in East Asia can build on the advances made in Malaysia, the Republic of Korea, and Thailand and create viable capital markets that can alleviate the mismatch problem by mobilizing more financing through local sources. But other countries in the region, particularly Vietnam, will require long lead times to develop capital markets to finance such investments. The development of local finance sources is especially important for water and transport projects, which typically have significant local content, but can apply to all projects that essentially earn revenues in local currency. The goal of long-term domestic financing involves complexities beyond the immediate scope of PPI, and can only be implemented over a longer-term horizon. But governments in East Asia should recognize the importance of instituting measures now to expand and deepen the mobilization of local funding sources for both public and private infrastructure. Experience has shown that improving the savings rate and developing an effective contractual

sector can contribute significantly to this goal.

- *The subsidy mentality.* Financial review of the utilities and infrastructure enterprises in the region indicates that governments have not yet accepted that infrastructure services are economic goods that should be made available to the consumer public at their cost. Until governments realize that tariffs must recover all operating and investment costs, there is little room to improve investment and financing prospects to accelerate private sector participation. Subsidies in various forms—cross-subsidies; exceptional concessional lending terms and conditions; and direct operating through operating and financing subsidies—are widespread throughout the region, and many finance markets in some sectors have been severely distorted as a result. Removing the subsidy mentality is essential to improve infrastructure finance markets. Even subsidies for the lowest and poorest segments of the population can be made available directly and transparently rather than by distorting important operating and financial fundamentals of the infrastructure enterprises.
- *False notions of cost and risk from distortions in the infrastructure finance markets.* For many years before the East Asian crisis, financing strategies for both public and private projects in the region were based on the false assumption that foreign financing was far cheaper than domestic financing and carried little added risk. In a period when local currencies were essentially stable, there was no apparent reason to adjust for foreign exchange risks, and the preference for financing generally fell heavily on the side of foreign debt.

The perception of foreign financing as cheap and low risk was also fueled by abundant and relatively cheap financing from export credit, primarily intended to support exports of power projects. When the crisis occurred, most public utilities in the region had to face harsh realities. They had not adequately recovered costs through tariffs in the absence of adequate foreign exchange risk provisioning. Moreover, economic hardship exacerbated political pressures that made it impossible to impose the tariff increases needed to recover lost ground. Power utilities with foreign currency borrowings and contractual liabilities tied to foreign exchange fluctuations suffered additional setbacks without adequate foreign exchange risk provisioning. Clearly, this distortion also impeded the development and strengthening of local capital markets, since local financiers would have found it difficult to compete with such interest rate spreads and financing terms.

One possible way to approach the distortions in infrastructure finance is the markup costing technique used by the Philippines government to pass on official development assistance financing to public enterprises, utilities, and municipal governments. This technique applies a surcharge for foreign exchange cover offered by the government and other related costs of financing, such as guarantee fees on foreign denominated debt, raising the cost of financing public enterprise much closer to local market rates. Special funds could be established to manage this activity transparently and commercially to ease future financial shocks.

Management of contingent liabilities

In the existing framework in East Asia, governments will still need to cover political risk to ensure continued private investment and financing in the infrastructure markets. Such guarantees will be essential to close existing

stalled projects as well as to initiate new ones. Since the crisis, with its heightened risks, international banks have become extremely reluctant to assume any form of political risk on PPI transactions. This posture will likely continue until governments and their public institutions become more creditworthy and a stable business environment for private operators can be secured through consistent and transparent regulations in each of the infrastructure sectors. Limited sovereign guarantees will be inevitable if investment is to continue in these sectors in the short term.

Governments can reduce the need for such guarantees if they begin to create business environments that can minimize the concerns of bankers and sponsors. Proper regulatory frameworks for settling disputes and adjusting tariffs can assuage the concerns of investors, ensuring the level of revenues necessary to recover the cost of operation and investment. Bold moves by governments to remove the current distortions in their infrastructure markets and to set a proper course for privatization of these services will further contribute to this end. Privatization substantially reduces political interference and puts these transactions in the hands of private parties. The sooner governments can move closer to this market condition, the sooner they can reduce the need for contractual guarantees.

Sovereign guarantees will still be needed in the short term. Prudent governments will recognize this, as well as the likely implications of continued cover support for their fiscal position. Governments should then respond by instituting a more professional approach to managing contingent and contractual liabilities. At a minimum, this would entail pricing, assessing the fiscal exposure, and making provisions for potential losses. Establishing a professionally managed fund solely for this purpose—separate from the rest of the government finances—would be part of a move toward more professional management.

Accountability

Another important lesson to be learned from the crisis is the need for accountability in the infrastructure sectors. The lack of accountability is most acute in the power sector, where immediate sizable overcapacity has intensified financial difficulties. The lack of accountability reinforces the need to move toward private infrastructure supported by independent regulators.

Foreign exchange planning and management

Financial prudence is especially critical for the East Asian countries with extremely limited foreign exchange reserves. Even one PPI project could draw down a fairly sizable portion of total exchange flows in these economies. Such exposure could then force governments to take inordinate fiscal and monetary remedial actions that would severely impact long-term economic growth. Despite such potential consequences, very little has been done to develop best practices to accurately reflect the long-term financial implications of PPI transactions in the overall macro planning process of governments. Nor has much been done to establish an analytical framework for assessing and managing such risks to ensure financial prudence. Since many PPI transactions are privately financed, "off-the balance sheet" items in government accounts, they are also regularly overlooked in public finance reviews.

More important, a better understanding of the financial limitations of governments would help frame recommendations for fostering PPI by setting priorities for PPI devel-

opment in the various sectors, altering the choice of modalities that can be realistically adopted for structuring and financing transactions, and setting up time-bound action plans and strategies for overall PPI development.

Lessons for Investors

Policy reform is vital for sustainable growth, but by itself cannot adequately address many of the issues that surfaced in the wake of the crisis to revitalize PPI in the short or medium term. Unless investor issues are considered as well, much of the progress attained in the past could be negated.

The financing gap

One of the most important effects of the crisis on PPI was the inevitable and swift collapse of confidence on the part of the investment and financial community. This created a financing gap that will be difficult to correct in the short and medium term. Sponsors are no longer motivated to invest in greenfield projects, and bankers' inherent aversion to risk has become more entrenched. Long-term private sector financing for these projects has dried up, and the outlook for private participation in infrastructure in East Asia—or Asia as a whole—is grim. There have been some successful projects, especially in the Philippines. But heavy losses seem certain in Indonesia and to some extent in Thailand. Moreover, sponsors are reflecting on the promotional and development expenses wasted in countries such as Vietnam. While interest in privatization can still be rekindled under the right circumstances, greenfield investments will be very difficult to revive in the short term.

The consequences of the collapse in confidence are clear and profound. With private financing drying up, massive needs for new infrastructure will go unmet. This affects investments not only for maintaining economic growth, but also for sustaining past efficiency gains. Governments, too, are consolidating their fiscal conditions in the mist of heavy contingent liabilities and increased requirements for subsidies to sustain public utilities. Transportation and water will probably suffer the severest neglect, since these sectors had already generated less private investment enthusiasm than the power sector. The water and transport sectors have seen little private participation, except perhaps in Malaysia, where local financing was more readily available. Today there is a widespread perception that new opportunities are limited unless demand in the region picks up and erases the excess capacity in many current markets. It would be unreasonable to expect substantial private financing of these sectors under the traditional risk-sharing formulas.

Alternative models and cost-sharing partnerships

Market projects, such as transport and municipal water distribution, require a better public-private partnership framework because commercial lenders are reluctant to take demand risks in these sectors. This is especially true for more than one-off private participation in these difficult infrastructure sectors. On the issue of guarantees, the private sector would like to see stronger commitment by host governments to honor the concession framework. Countries that urgently need new greenfield infrastructure investment may need innovative short-term solutions to minimize the impact of private

financing and help regain bankers' and sponsors' confidence in the market.

Risk mitigation

The East Asian crisis dramatically increased the need for risk mitigation cover. This can be approached by guaranteeing political and subfederal government risk and developing local financial markets.

- *Political risk* cover is now seen as indispensable for short-term results, and untied multilateral support could be extremely effective in complimenting tied programs. While recovering the stability of macroeconomic conditions and local currency is a prerequisite for the successful attraction of private infrastructure financing in the future, the market expects the economies in the Philippines, the Republic of Korea, and Thailand to take from two to three years to recover, and that of Indonesia, five to ten years. Private financiers now demand political risk covers in the region, and will continue to do so in the near future. While export credit agencies, bilaterals, and regionals have been active in offering political risk guarantees, insurance, and financing—and the Asian Development Bank has been somewhat active—untied covers will be widely needed. The few deals pending in 1999 depended on the availability of Japanese and other public guarantees.
- *Local financial markets* and the availability of local finance are major long-term issues. The East Asian financial crisis highlighted the well-known mismatch risk of funding projects with local currency revenues with offshore funds. While all the countries in the region have aimed at strengthening the banking sector and developing capital markets, such development would take years. High interest rates of local debt would be major impediments to infrastructure financing even if local debt were available. It would be relatively easy to develop expertise in evaluating credit risks for sovereign and public agencies and corporations, but not for private project finance. Even the capital markets of the developed world—except perhaps in the United States—offer limited funds to high-risk and illiquid project finance transactions, and only a few international banks take risks associated with limited-recourse infrastructure loans. If governments are to be encouraged to invite foreign sponsors and international financing to fill the gap, they will have to conceive feasible measures to cushion the impact of excessive local currency devaluation for infrastructure users.
- *Guarantees for subfederal government risks* are in high demand but are not readily available. Decentralization of infrastructure provision has been promoted, but lack the credit standing and institutional capacity to implement private projects. This has stalled such subfederal private projects as municipal water projects. Developing the credit capacity and regulatory frameworks of subfederal agencies would take years. In countries where the central government has limited authority and capacity to guide and support subfederal governments in offering private projects, these projects would be very difficult to finance. Export credit agencies and bilaterals would be willing to offer covers for subfederal projects only if the central government undertook municipal regulatory and political risks.

Notes

1. For a more comprehensive discussion of the economic impact of the financial crisis on East Asian economies, see World Bank 1998.

2. The World Bank PPI database used to compile figures for 1994–99 covers power, telecommunications, transport, and water and sanitation, and includes projects that have reached financial closure and directly or indirectly serve the general public. The figure includes investments in greenfield projects and operation and management contracts (concession contracts for existing facilities under which the private entity assumes significant commercial and investment risk) with significant capital expenditure. Operation and management contracts includes build, transfer, operate (BTO), build, lease, and transfer (BLT), and build, rehabilitate, operate, and transfer (BROT) contracts as applied to existing facilities. Divestitures are excluded because they mostly represent revenue from the sale of existing assets rather than incremental new investment.

3. The power purchase agreement contracts signed included provisions for the payment of power in U.S. dollars. All projects were awarded on a BOO basis with terms from 10 to 30 years. Most of the new generation capacity for which the contracts were signed was for coal-fired plants. The power purchase agreements were supported by the government's letter of "comfort," which was acceptable to the bond markets as a "full faith and credit" support. All independent power producers except the Irian Jaya project, which was competitively awarded, were procured on a negotiated basis, with Paiton as the "template agreement."

4. The short-term plans called for an 800-megawatt nuclear BOT power facility to be in operation by 2003. A consortium led by Westinghouse secured agreement in principle to build this plant at Mount Muria, but this project has been postponed indefinitely.

5. Guarantees on the minimum revenue or traffic volume in transportation projects, and take-or-pay contracts with minimum revenue levels in power generation projects.

6. This fund entered the market in 1993 and has been central to the development of several independent power producers and other big projects, such as Light Rail Transit and the Kuala Lumpur International Airport. Islamic financing, another popular mechanism for funding major projects, was used in the privatization of Petronas Gas and the Kuala Lumpur International Airport.

7. In spite of the reforms, the authorities continued to favor a dominant role for state enterprises pursuing the goal of a socialist-oriented, mixed economy operated on market principles. In 1997 the number of ad hoc measures introduced to support state enterprises rose considerably. Steps back from commercially oriented lending, which ultimately impaired the banking system, included the elimination of collateral requirements for state enterprises borrowing from a state-owned commercial bank; permission of lending to loss-making firms with sound business plans; and the rollover of outstanding credit to enterprises facing repayment difficulties.

8. Article 10 of Decree 62 (subsequently amended and supplemented by Decree 02 in January 1999) states that the government may nominate a government body to guarantee the performance of the financial obligations of Vietnamese enterprises under BOT contracts. But there are concerns about whether some government bodies could honor an obligation to pay in foreign currency.

9. Several public sector financial institutions were bailed out because of large losses and nonperforming loans. The country set up an asset privatization trust to dispose of the assets and stepped up banking supervision.

Annex Country Profiles

Republic of Korea

Crisis and Adjustment

The Republic of Korea initially appeared little affected by the crisis in the region. The exchange rate remained broadly stable through October 1997. However, with a high level of short-term debt and only moderate international reserves, concerns about the soundness of financial institutions and chaebol had increased significantly amid several large corporate bankruptcies earlier in the year. As Korean banks began to face difficulties rolling over their short-term foreign liabilities, the Bank of Korea shifted foreign exchange reserves to the banks' offshore branches and the government announced a guarantee of foreign borrowing by Korea banks.

External financing conditions deteriorated significantly in late October 1997 and the won fell sharply while usable foreign exchange reserves declined rapidly.[1] Monetary policy was tightened briefly, but was relaxed again in light of concerns about the impact of higher interest rates on the highly leveraged corporate sector. By early December, the won had depreciated by over 20 percent against the US dollar and usable foreign exchange reserves had declined to $6 billion (from $22.5 billion at the end of October).

On December 4, 1997, the Fund's Executive Board approved a 3-year stand-by arrangement with Korea. Additional financing had been committed by the World Bank and the Asian Development Bank. The underlying program aimed to bring about balance in the current account, build up foreign exchange reserves, and contain inflation through a tightening of monetary policy and some fiscal measures. In addition, the program included a range of structural reforms in the financial and corporate sectors to address the root causes of the crisis.

With roll-over of short-term debt down sharply, usable international reserves nearly exhausted and the won in free fall, a temporary agreement was reached with private bank creditors on December 24, 1997 to maintain exposure, and discussions on voluntary rescheduling of short-term debt were initiated.

In January 1998, signs of stabilization emerged. Roll-over rates increased significantly after the agreement with the banks; usable international reserves stabilized, and the won appreciated moderately against the U.S. dollar. On January 28, 1998, the Korean authorities reached an agreement, in principle, with a committee of foreign banks on a voluntary restructuring of the short-term debt of 33 commercial and specialized banks (including their overseas branches) as well as certain merchant banks. The eligible debt, amounting to some $24 billion, covered interbank obligations and short-term loans maturing during 1998.

Key elements of the government's approach include, inter alia, the following: enhanced legal/regulatory support for corporate restructuring; creation of the Financial Supervisory Commission (FSC), an independent agency with the mandate to restructure both the corporate sector and the financial institutions; a focus on voluntary workouts for the chaebol that ranked "6 to 64" in asset size; a longer-term approach to restructuring of the Top 5 chaebol; and

special relief for small and medium enterprises (SMEs). As a result of the debt restructuring, Korea's short-term debt declined from $61 billion at end March to $42 billion at end April 1998. The agreement with bank creditors had helped to improve financing conditions, usable reserves increased, and the won appreciated.

A new government took office in late February of 1998. Soon after the current government took office, the National Assembly passed a series of acts to make the legal/regulatory environment more conducive to corporate restructuring.[2] Market confidence in the new government's commitment strengthened. Korea successfully launched a global sovereign bond issue, and significant capital inflows into the domestic stock and bond market were registered. The sharp decline in economic activity, however, was weighing heavily on corporations. Interest rates were lowered cautiously, but monetary policy continued to focus on maintaining exchange market stability. In view of the weaker outlook for growth, the fiscal target was lowered further to permit automatic stabilizers to take effect.

In Korea, the financial sector accounted for the bulk of short-term foreign liabilities, but unlike in Thailand, most of the short-term debt (over half at end November 1997) was owed by domestic financial institutions (including their overseas branches and subsidiaries) and the geographical distribution of creditor banks was more dispersed.

By July 1998, Korea had made substantial progress in overcoming its external crisis. The won remained, however, broadly stable and appreciated vis-a-vis the U.S. dollar in July, permitting a further easing of interest rates. Interest rates declined further to pre-crisis levels, and a supplementary budget was under preparation to support economic activity and strengthen the social safety net.

Structural reforms emphasized the rationalization and strengthening of the banking system as well as corporate restructuring, which was to be broadened significantly with support from the World Bank. However, there is strong skepticism both in Korea and internationally about the willingness of the Top 5 to restructure voluntarily. Without restructuring of the Top 5 it is clear to all of the relevant stakeholders that the process of corporate restructuring and bank restructuring in Korea will be incomplete and will leave the large groups, the banks and the Korean economy vulnerable to subsequent shocks, but the process remains quite complex and more difficult than generally acknowledged or presented.

The Privatization Process: An Overview

Private participation in Korea began early in the nation's development and is now prevalent in a broad range of sectors. However, there has been heavy price regulation aimed at containing the overall price index. As a result, improvements and expansion in services have been limited and existing facilities have been inefficiently used in both publicly and privately owned utilities.

In July 1998, the Planning and Budget Committee (PBC), the new agency managing the privatization of SOEs and the PPI reform process under the new government developed a program of privatization for 11 state-owned enterprises. Among them are Korea Telecom, KEPCO, and Korea Gas Corporation. PBC also announced that 6 SOEs (of those 11 SOEs) were to be priva-

tized over an extended period of time. PBC-driven reforms often collide with political interests, showing its limitation as a new bureau. As a result, the privatization process has been slow. PBC is working on addressing several key issues such as creating an adequate regulatory framework, introducing competition in the market, addressing labor issues and finding an optimal privatization technique.

The Economic Planning Bureau (EPB)[4] has primary responsibilities to coordinate infrastructure development, conduct performance evaluations, undertake economic policy, facilitate budget approval, and handle regulatory activities.

On the PPI front, the Korea Research Institute of Human Settlements (KRISH) is the research arm of PBC for PPI reform. Recently the Private Investment Promotion Center was established within KRISH.

While privatization of infrastructure in Korea has gone far, the regulatory environment remains underdeveloped. Until a few years ago, the EPB had primary responsibility for price regulation. However, Korea has started a forward-looking liberalization program aimed at providing greater incentives for private participation in infrastructure.

Private participation in public works began in 1991. The government prepared the legal structure for private sector participation in infrastructure (also referred to as Social Overhead Capital) and in 1994 passed the 'Private Inducement Promotion Act'. Forty-five strategic infrastructure projects—mostly large and burdensome to the Government of the Republic of Korea—were immediately announced for private participation with little attention given to economic viability or regulatory reform. Only 15 had been proposed by the private sector. Five went into construction, but all have been on hold since the East Asian crisis erupted. Lack of private investment interest has led to more lucrative clauses being embedded in new laws.

To further improve the private investment environment in infrastructure projects a new law became effective on April 1, 1999. The Private Investment Act for the Social Overhead Capital (PIA) replaced the Private Capital Inducement of 1994. The objective of the PIA is to increase the promotion of private investments including foreign capital by improving investment selection process and eliminating restrictions on the facilities. The main objective of the new law is to stimulate more private participation in infrastructure, especially foreign investors and contractors. Infrastructure sectors targeted by the law include power, gas, transportation, airports, ports, telecommunications, water and sewage facilities.

The law includes new incentives for foreign investors: 1) exemption of 10 percent value-added tax upon completion of target facilities; 2) government guarantee of up to 90 percent of operating revenue; 3) bonus for early completion and permission for excess profit resulting from lower than expected construction costs; 4) compensation for the loss due to exchange rates movements; 5) acceptance of diversified development modes (BOT, BTO, BLT, ROT); 6) increase of the profit level approved by the government from 10 percent to 18 percent; 7) a buy-out option in the event of franchiser bankruptcy; 8) exclusion of the debt portion related to private infrastructure investment when the franchiser's overall debt-equity ratio is computed.

The executive regulations of the Law were prepared under technical assistance from the World Bank. The regulations are designed to promote transparency and efficiency.

Sub-Sector Profiles

Power generation and distribution

The Power sector is dominated by KEPCO, the largest state-owned enterprise in Korea. Korea Electric Power Corporation (KEPCO) has been a dominant monopoly in generation (94 percent), transmission(100 percent) and distribution(100 percent). The government has a direct 58.2 percent stake in KEPCO. Foreign ownership in KEPCO was authorized in 1994, but initially limited to 8 percent of total equity. Foreign Investors now own 16.3 percent. While foreign ownership of KEPCO is restricted to a 30 percent cap, the sale of individual generation and distribution assets are considered private investments and such foreign investors can purchase up to 100 percent. KEPCO is considered a world class utility, having the capability to design, build and operate various types of thermal, hydraulic and nuclear plants.

At the end of 1998, power generating capacity was about 36,000MW. It consists of 31.8 percent nuclear, 57.8 percent fossil, and 10.4 percent Hydro.

Demand for electricity was projected to grow between 6.8 percent and 7.4 percent annually from 1997 to 2000. However, the country's economic crisis has had a negative impact on demand. Of the 67,851 MW needed by 2010, 33.1 percent is expected to come from nuclear generating units, 27.3 percent from coal-fired plants, 32.1 percent from either gas or oil-fired capacity, and 7.5 percent from hydroelectric stations.

The Government of the Republic of Korea has outlined its plans to introduce competition gradually in the power generation business. As much as 45,400 MW of the 67,851 needed (66.9 percent) could be developed by the private sector under the Ministry of Trade, Industry and Energy's (MOTIE) newly proposed "competitiveness policy." To date, four Independent Power Producers (IPPs)—LG Energy, POS Energy, Hyundai, and Taegu Electric Power—have been awarded licenses by KEPCO to develop private power plants to sell electricity to KEPCO for 20-25 years.

According to the 'Power Sector Restructuring Plan' recently prepared by Ministry of Commerce, Industry & Energy, KEPCO's generating assets will be split into several subsidiaries by the end of 1999 and by 2002, KEPCO will separate its distribution assets into subsidiaries and gradually sell off these assets. The target is to open up the distribution market by 2009.

KEPCO is being advised by two investment banks on its internal restructuring into individual generation, distribution and transmission companies. These gencos will hold KEPCO's thermal, hydro, gas, and coal-fired generators—the exact number is yet to be determined. KEPCO's nuclear assets will be grouped together in a separate subsidiary and will continue to be held by KEPCO.

Oil and gas

Korea imports almost all supplies of oil and natural gas. The government is encouraging liquefied natural gas use to reduce dependence on oil and nuclear power.[5] The Korean Gas Industry started in 1983. In that year, KGC (Korea Gas Corporation), which is engaged in the import and wholesale of LNG (Liquefied Natural Gas), was established.

To date, KOGAS (Korean Gas Company) retains a monopoly over gas importation and distribution; pricing arrangements are distorted by cross-subsidies and do not assure investors of a market-oriented return. Additionally, there is no independent regulatory body that regulates importation and distribution.

KGC has monopolized import and wholesaling of LNG, while 32 general city gas suppliers, which exclusively supply LNG in each supply district, have monopolized resale. KGC is a public corporation which is owned by the central government, KEPCO, and local governments.

KGC has been a target of the Korean Privatization Program since 1993. However, the privatization of KGC has been postponed to until after the national gas pipeline is completed. The government plans to complete privatization of KGC by the year 2002.

The City Gas Business Act is the basis for regulation of this industry. This Act classifies city gas business into two types: wholesale gas supply business and general city gas supply business. The City Gas Business Act prohibits access and guarantees the vertical integration of LNG imports and transmission pipeline by KCG. The Ministry of Trade is responsible for the licensing procedure of wholesale gas suppliers and municipal governments are responsible for the licensing of general city gas suppliers. When an applicant receives a license to act as a general city gas supplier, it has a monopoly right to sell the city gas to its exclusive supply district. It also has a universal service obligation and is restricted by price and quality regulation by the Ministry of Trade. The Ministry has responsibility for controlling M&A, exit, and extension of facilities.

Transport

Transportation services are delivered largely by the private or quasi-private sector, except for rail transport and subways. The transport services run by the private sector operate in a relatively competitive environment, and are generally considered to be efficient. However, transport services are greatly limited in their ability to improve their service because of restrictive price controls.

Besides rail transportation and subways, the private sector or the quasi-private sector is largely responsible for transportation services in Korea. The government has been very successful in either introducing the private sector, or encouraging beneficial private sector practices without undertaking full-privatization, in a range of infrastructure services. The Korean Airport Management Corporation, the Pusan Container Port Management Corporation, and the Korean Highway Corporation are all examples of enterprises which remain 100 percent government-owned but which are being run independently as if they were private entities. These SOEs are autonomous, with significant control over budgets, are allowed to operate like private firms, and benefit from little political interference.

Road. The roads network is the sector where most infrastructure projects have been lined up. Korea believes that the main cause of heavy logistic cost (about 17 percent of GDP) is the direct result of poor road facilities. This sector will be the core area in which Korea is most interested in inducing foreign investment.

Port. Construction and management of ports are administered by the Ministry of Maritime Affairs and Fisheries (MMAF).

Each regional office is directly under the supervision of the Minister. The Ministry is very much interested in private participation in ports. Nevertheless, due to national security concerns, privatization is far from reality.

Railway. High Speed Rail projects are administered by the Ministry of Construction and Transportation, while all other railways are administered by Korea National Railroad. Korea's High Speed Railway project has been one of the most problematic projects and suffers serious funds shortage.

Subway. Construction of Korea's subway system is administered by local city governments. The most distressing one is Seoul Metropolitan Subway Corporation(SMSC). Tariffs do not cover construction costs, and attempts to adjust tariffs have not been successful in the past. SMSC's known overseas borrowings amount to over $409 million and 60 billion yen.

Light rail transit. Currently 3 projects are being administered by local governments. No private participation has been shown due to their unviability.

Airports. Privatization of airports is not an immediate issue in Korea due to national security reasons. GOK counterparts are Civil Aviation Authority of the Ministry of Construction and Transport and the Ministry of Defense. Inchon International Airport, to be located near Seoul, is to be built under the BOOT method with significant amounts of private capital. The airport project, to be constructed between 1997 and 2000, will include a comprehensive business complex with hotels, offices, exhibition and conference centers, and a shopping complex.

According to the master plan of the government, 45 major projects are being implemented, mostly on a BTO or BOO basis. Among these projects, five projects including New Airport Expressway, New Airport Terminal, and Seoul Beltway, are currently being constructed on a BOT basis. The government has guaranteed 80 percent of the estimated traffic revenues and financial support through toll-rate and operation period adjustments. For five projects including Pusan New Port Kyuang-In Canal, concession agreement are being negotiated and financing plans have yet to be closed. For another seven projects ranging from new ports, railways, terminals to containers, "priority negotiating parties" have been designated and active negotiations are continuing. For the rest of the projects, and some new projects, the government plans to allow consultants from the World Bank to evaluate the international construction.

Overall investments in transportation have been low relative to Korea's economic growth. Traffic congestion is a major problem. Although car ownership has exploded in the last decade as a result of government policy to encourage the domestic auto sector, there has not been an accompanying improvement in the transport infrastructure. Whereas in 1985 there were 500,000 passenger cars, by 1996 there was a tenfold increase to 7.5 million cars. Public transport has not been improved. Passenger coach usage and public bus usage have decreased as a result of the explosion in the number of cars and the development of the Seoul rapid rail system. Railways, in contrast, have not been affected as severely as a result of the explosion in cars.

Telecommunications

The Korean telecommunications industry has undergone serious change in the 1990s.

The vertically integrated monopoly by state-owned KT (Korea Telecom) was broken up when international and long distance service liberalization took place in 1991. Dacom, the second primary telecommunications business operator, entered these two markets in 1991 and 1996 respectively and now competes with KT. In 1997, local calls were liberalized and a second operator entered the market.

The mobile phone segment (18 million mobile phone subscribers) has attracted considerable FDI in spite of the economic crisis. Major foreign investments in this sector includes a $396 million stake in LG Telecom by British Telecom.

The most important issue hindering greater involvement of the private sector in telecommunications sector is regulatory independence and the creation of a more level playing field. The GOK is presently in the process of reviewing a public offering proposal for Korean telecoms.

The Telecommunications Basic Act and Telecommunications Business Act contain the fundamental rules of telecommunications regulation. The latter divides operators into two classes, primary telecommunications business operators, and secondary telecommunication business operators. The primary operators provide telecommunication service by establishing telecommunication circuit facilities and the secondary operators provide services by leasing the telecommunication circuit facilities from the primary operators. A primary operator has to be licensed by the Minister of Communication while secondary operators are required only to report their entry into the business to the Ministry of Communication. An application to be a primary operator may only be handled by the Ministry, after the Ministry announces a request for proposals.

On December 23rd 1998, the government for the first time listed shares in Korea Telecom. By early January share value had risen by 53 percent. This is just one step in a lengthy and complex process. At present foreign investors are limited to just 5 percent ownership, while most of the 29 percent not owned by the government is not tradable but must be held for a fixed period. Even though the sector has been progressively liberalized since the early 1990s, the current regulatory environment, especially affecting price regulation, interconnection, and universal service arrangements, remains inadequately defined. Additionally, there is a non independent regulatory body.

Through year 2000, the government will offer for sale part of its shares to employees and institutional investors, increase international participation to 18 percent, and issue 10 percent of new shares to a strategic investor. After January 1st 2001, the government plans to sell the 33.4 percent of its remaining shares in KT.

Water and sanitation

Korea Water Resources Corporation (KOWACO), a 100 percent state-owned enterprise, is responsible for construction, maintenance and operation of water-related facilities, and for utilization of water resources. Local municipalities control water distribution.

Although tariffs only cover 70 percent of cost, no privatization or restructuring plan has been established.

The water sector, including irrigation, flood prevention, and drainage were central to Korea's early developmental policies in the 1960s when agricultural infrastructure was emphasized. However, focus on the water sector has recently been greatly diminished.

In the 1980s a large dam was constructed in response to the growing demand for water.

Vietnam

Crisis and Adjustment

Before the 1997 crisis, Vietnam was one of the fastest growing countries in East Asia. The rapid growth had been propelled by a surge in investments and market mechanisms introduced late in the Eighties. There was considerable activity in private participation in infrastructure, mainly under the BOT scheme; in the power sector alone the government was planning to raise investments by $6.5 billion over the 1997-2001 period using private sector funds.[6]

In 1997 GDP growth (9.2 percent) maintained the pace of earlier years, the investment to GDP ratio (25.4 percent) was still high, and inflation continued to be low because of tight monetary policy. However slower regional growth and, starting from mid-year, large devaluations in the currencies of several Asian economies adversely affected Vietnamese export perfomance. The depreciation of the Dong raised import prices, and in an attempt to redress some of the problems of the SOEs,[7] the government banned imports of a number of goods.

The government that took office in September 1997 identified further reform of SOEs (including the divestiture of many enterprises) as one of its principal objectives. At the same time however, the government moved to centralize large SOEs[8] considered to operate in "key" sectors, such as energy, construction, food export industries, and airports and seaports. Among the 23 "special" SOEs chosen for centralization were the Vietnam Posts and Telecommunications corporation and the Electricity of Vietnam corporation. This new centralization was adopted under the misguided notion that in order to make these large "strategic" corporations globally competitive, they actually required protection from competition. As a result, the SOEs became more inefficient than before.

Vietnam's GDP growth rate for 1998 fell to approximately half the rate of the previous year. Due to the collapse of regional markets, export growth plummeted to one percent (from twenty-two percent in 1997); foreign investment inflows abated by around sixty percent in 1998 only.

In recognition of the need for reform, ambitious targets were announced by the government in early 1998: 150 'equitizations' (a form of divestiture) were scheduled to take place by the end of 1998, 400 by the end of 1999, and 1,000 by the end of 2000. To date, while notable progress has been achieved in equitization, the reality has fallen far short of the announced intentions.

While the banks' direct exposure to foreign exchange risk has been limited by prudential regulations, the indirect exposure of financial institutions is very high, as the state enterprises have in most cases used foreign currency loans for domestic operations, and did not have access to instruments allowing hedging of exchange rate risk.

Since the crisis erupted, infrastructure projects have moved forward slowly due to Vietnam's low levels of foreign currency reserves and its precarious balance of payments situation.

The capital market is still underdeveloped. The government aims to establish a bond market and convert SOEs into limited liability companies with tradable shares.

At present Vietnam is struggling to cope with both the simultaneous challenge of privatization and liberalization and the effects of the Asian currency crisis. Almost 70 percent of FDI in Vietnam is accounted for by other Asian countries, so that the reduction in capital flows, which was occurring even before the crisis began, is likely to continue.

The "Equatization" Program and the Legal and Regulatory System

The government took initial steps towards privatization in 1992 when it passed Decree No. 202/CT, which enabled the limited conversion of SOEs into shareholding corporations, and allowed the sale of shares to private investors. However, the majority of shares in the "equitized" company was to be held by the government and by company employees.[9]

Legislation dealing specifically with foreign investment in Vietnam started with a law issued in 1977. With the advent of the economic reform initiative doi moi in 1987, the National Assembly passed the Foreign Investment Law (FIL)[10] which allows foreigners to hold equity in approved enterprises in Vietnam. Under doi moi policies, FDI increased from $400 million to over $20 billion between 1988 and 1996.

In 1990 the government approved the Law on Private Enterprises and the Law on Companies which recognizes domestic private ownership of assets. In 1994, an attempt to revitalize the equitization program was made through Decree No. 120/CP. The new decree allowed foreign investors operating under the FIL to purchase shares and bonds without prior approval from the Prime Minister.[11] However in the equatization program progress has been limited mainly because of discrepancies in enterprise valuation and accounting standards, opposition to reforms by the SOEs,[12] and the lack of consensus on the details of the equitization program among top officials.

In August 1998 the government issued new regulations for investment in BOT projects through Decree 62[13] (amended and supplemented by Decree 02, issued in January 1999). However there is still a lack of certainty and clarity in Vietnamese contract law, and uncertainty as to the interaction between the Civil Code, the Commercial Code and the Economic Ordinance; BOT projects are likely to proceed on a case-by-case basis with many of the outstanding issues being individually solved during the negotiation stage.

Sub-Sector Profiles

Power generation and distribution

Electricity of Vietnam (EVN), established in 1995, has primary responsibility for generation and owns the entire transmission network. The distribution of electricity to customers is managed through five regionally-based state agencies, which fall under the EVN umbrella.

The total installed capacity is 5,200 MW as of December 1998. Total electricity production during 1998 reached 21,700 GWh, a growth of 13.4 percent over 1997; demand remained with total sales at 19,880 million kWh, a growth of 16.24 percent over 1997.[14]

Current power tariffs of around 5 USc/kWh do not cover the full costs of power. The World Bank has actively encouraged ENV to raise electricity tariffs to the equivalent of $ 0.07 cents per kWh by the year 2000.

EVN reports to Ministry of Energy, which still retains overall responsibility for the

Table A1. EVN IPP Program

Project/Sponsor	*Unit*	*Capacity*
Quang Ninh Oxbow Power	MW	300.0
Ba Ria Wartsila	MW	120.0
Phu My 2.2 EdF consortium	MW	700.0
Phu My 3 BHP consortium	MW	650.0
Geothermal Ormat	MW	50.0
Wind power (2)	MW	85.0
Total capacity signed	MW	1,905.0

Source: AID Research/EVN.

power industry but has seen many of their functions passed to EVN since the 1995 reorganization. The Ministry of Planning and Investment (MPI) is involved in the Build-Operate-Transfer program that allows private sector investors to participate in the generation market.

EVN remains the dominant player in the generation market but there are some small players.[15] The major new addition to capacity during 1998 was the commissioning of the second and third units of the Hiep Phuoc small power producer project.

Vietnam's power comes mainly from hydro plants. There are also coal-fired plants in the North, while the existing and planned gas plants are in the South. There is a regional imbalance in generation capacity with substantial generation surplus in the North.

The only operating private power generator is Hiep Phuoc, a 375 MW plant in the South of Ho Chi Minh City. It was built by a Taiwanese company to supply an industrial zone and doesn't fall under the BOT framework; the company negotiated a PPA with EVN only after the plant was constructed.

Vietnam's first privately financed power project, the 300MW Quang Ninh power plant, was awarded to Oxbow Int'l Power of the U.S. in 1996, under a 20-year contract. The plant is to come under operation in 1999 and it will supply power to EVN. Another BOT project, the Ba Ria Vung Tau 120 MW power plant will be developed by Wartsila NSD Power.[16]

The first project that has followed a formal competitive process is the Phu My 2.2 combined-cycle-gas-turbine plant, which also represents the first BOT power project that has drawn keen interest from the international community.

The use of nuclear power, for the long-term supply of electricity, remains a priority for EVN. A feasibility study for a 600 MW nuclear facility is under preparation. The project is likely to be offered on a Build-Operate-Transfer basis.

EVN has traditionally relied upon NGO financing for the development of power generation and transmission projects. EVN has proposed, at various times, putting the majority of projects up for inclusion within the Build-Operate-Transfer program. As of the of 1998, seven projects were proposed (table A1) to be financed on a BOT basis.

In addition to the projects listed above, EVN has also received a number of unsolicited proposals to develop projects on a BOT scheme.

To date the major hurdles to the development of an IPP program have been regarded as:

- Electricity tariffs: resulting in low PPA rates being offered.

- Government guarantees: the government has been unwilling to provide guarantees.
- Currency convertibility: difficult to convert local currency into foreign currency.

The opportunities for new private investment in Vietnam's power sector will depend on how quickly the economy recovers. A study by the World Bank, prepared after the onset of the East Asian crisis, forecasts continuing rapid growth in the economy and even quicker growth in the demand for power.

The forecasts imply that between now and 2010 Vietnam will need up to 10,000 MW of new generation capacity. The government plans to finance part of these investments itself, using its own revenues and borrowing as well as by requesting private firms to finance the rest. The proportions of public and private financing have not been decided and any decisions are likely to be subject to change.

The government's plans to privatize existing assets are less developed than are its plans for private greenfield investments. The government is, however, interested in opening the distribution sector to private participation. As a start, it is planning to equitize a couple of small distribution units, including part of the Hanoi and Ho Chi Minh City companies' distribution systems.

Oil and gas

Vietnam's Petroleum Law[17] assigns upstream oil and gas activities—exploration, development, and production—exclusively to PetroVietnam, a state-owned enterprise. PetroVietnam is responsible for conducting petroleum operations and entering into petroleum contracts with other entities. Though the Law assigns a regulatory role to the State Petroleum Management Authority, the government relies heavily on PetroVietnam to perform functions reserved to the authority. Vietnam's Petroleum Law assigns to PetroVietnam the task to supervise contractors, monitor compliance with the work programs specified in the contracts, and planning development and production after discoveries.

Recent analysis indicate that future oil and gas discoveries in the Nam Con Son and Song Hong basins will have a reserve potential of some 520 million barrels and 355 billion cubic meters of gas, in addition to the already discovered reserves. Such an exploration program would cost about $950 million. An additional $7,850 million would be needed to cover the development of fields and infrastructure.

Encouraging private investments is necessary in this sector. The challenge in the next years will be to provide sufficient incentives and policy measures to induce international investment in exploration and development of oil and gas resources. To increase international investments in exploration, the oil and gas sector urgently requires an efficient and transparent system for awarding contracts. A truly independent regulatory agency, separated from the formulation of energy policy, is also needed.

Transportation

To date, the Government of Vietnam has acted or announced its intention to involve the private sector in the transport sector in three ways: (1) BOT investments in ports, highways, and bridges; (2) equitization of selected existing maritime assets; and (3) construction contracting to meet donor conditionalities for sectoral loans.

While the Ministry of Transport has slated several engineering, design and con-

sulting divisions for equitization, the conversion of existing roads or bridges into privately owned or operated infrastructure does not appear to be under consideration at this time. To date only few initiatives which involve the private sector have been undertaken.

There are severe restrictions on foreign ownership and management of transport infrastructure, as defined in Decrees 56 and 28. Moreover, without access to local financing, and bond market (the stock market opening as scheduled for 1999 has recently been postponed for at least another year), transport projects in Vietnam suffer from currency mismatches and difficult exit strategies for investors. Additionally it is currently very difficult for projects to reach financial closure due to the lack of sovereign guarantees associated with Vietnam's transport projects.

Nonetheless, Ho Chi Minh City's government issued bonds to finance the Nguyen Tat Thanh Road repair and upgrading project in 1994 and gave a BOT concession for one highway outside of Ho Chi Minh City. Other BOT projects (among which are a ring road around Hanoi, a toll road between HCMC - Bien Hoa - Vung Tao Expressway) are under consideration. The government has also allowed for BOT participation in the Quan Hau Bridge[18] across the Nhat Le River in Quang Binh Province (National Highway 1).

Currently there is no plan to introduce private participation in any of Vietnam's Rail operations. Although Vietnam Rail is a vertically integrated entity (with ownership of assets ranging from traditional rail services to rolling stock manufacturing, hotels, meal services and even food manufacturing facilities), restructuring of the institution and equitization or divestment of ancillary services (except for one hotel) has not yet been proposed.

There is no discussion for private participation in the airport sector either.[19] On the positive side, in 1997 a consortium of firms from Singapore, Malaysia, and Taiwan were awarded a 15-year license starting in 1995 to develop Vietnam's largest deep-sea port, Vung Tau International Port worth $637 million.

Communications

Telecommunications is still seen as a strategically important part of the country's infrastructure. Therefore there is no private foreign ownership and only limited local private participation is permitted.

So far the state monopoly Vietnam Posts and Telecommunications (VNPT) Vietnam's Petroleum Law[20] has equitized only one of its many companies, and is currently planning to equitize only four others (a hotel, a telecoms manufacturer, and two postal construction companies).

The government's restriction on foreign participation in telecommunications prohibit foreign investment in any telecommunication operational companies. In order to circumvent this restriction while allowing access to much needed foreign capital and expertise, revenue sharing agreements, or Business Co-Operation Contracts (BCCs) have been developed.[21]

The current BCC structure does not allow the foreign telecoms to set up a separate legal entity. Rather, it allows the foreign investor and the VNPT to share revenues for a fixed period of time.[22] In this way, VNPT has the ultimate leverage over foreign telecoms investors.

The primary regulatory agency is the Department General of Posts and Telecoms (DGPT). However, its actions are constrained by other governmental agencies, including the Department of Planning and Investment (DPI) and VNPT. Due to the all-pervasive nature of

VNPT in this industry, DGPT's regulatory role is modest and the development of any form of competition is severely constrained.

Currently there is no competition in fixed line telecommunications. However as the government is committed to introducing competition into the telecommunications sector, it has granted licenses to two other organizations: Saigon Postel and Vietel. However, both of these organizations are government agencies and the former has VNPT as a major shareholder. Neither of these organizations are offering services at this stage as the DGPT has not defined the rules under which they will operate.

There is some degree of competition in cellular as there are three cellular providers. In 1996 in order to spur competition and deregulation, VNPT started up Vietnam's third mobile phone network. It represented Vietnam's first attempt to develop "embryonic" telecommunications infrastructure without foreign involvement.[23] However, VNPT is a major shareholder in all three.

The goals outlined in the Accerlerated Telecoms Master Plan for 1995-2000 have not been met. Additionally, demand for telecommunications services has declined significantly in the first half of 1998. Given the current government telecoms policy regime and control over the industry, the difficulties in deploying WLL technologies, and the impact of the currency crisis, it is expected that projections will not be realized. Pyramid Research predicts that there will be a net decline of 300,000 lines from the previous forecast of over 3.8 million total main lines by year 2000. To ensure private investment in the telecommunications sector on a scale large enough to support the governments plans will require significant progress in the equitisations of operating companies; the formation of an active stock market; and the removal of limits on private investment, both local and foreign.

Water and sanitation

Currently, there is some reluctance for concessioning or equitizing existing assets in the water sector. However, in 1998 the Binh An Water Supply Company was licensed to build and operate a water intake and treatment plant on the Dong Nai river near Ho Chi Minh City; this represented the first BOT investment granted by the Vietnamese government to foreign investors in the water sector.[24]

At present, the majority of the population, especially in rural communities, where 80 percent of the Vietnamese population live, do not have access to safe water supplies. Much water is lost because of old, faulty pipes; uncollected water reaches as high as 63 percent in Hanoi. There are few wastewater treatment facilities. Currently water prices are subsidized up to 40 percent.

Inter Ministerial Circular (No. 02-TTLB) states that the acceptable water loss ratio shall be set by the Chairman of the People's committee or the Mayor of the central cities, and be under 30 percent. However, decision making structure in the water sector is highly decentralized and the methodology set by the circular, which is not a legally binding document, is not followed at the provincial level.

Thailand

Crisis and Adjustment

From 1983 to 1996, Thailand had one of the fastest-growing economies in East Asia,

with an average 7 percent annual growth in per capita income. However structural problems, well known already in late 1996, such as the absence of sophisticated financial and capital markets, the reliance on financing of long-term investments with short-term debt capital, the decline in demand for Thai products (particularly electronics), and the loss of wage competitiveness, added to the pressure on the Thai currency and led to the collapse of the baht in July 1997.

When the baht came under attack for the first time in May 1997, the government intervened heavily to support the peg.[25] As investors' perceptions continued to sour, and the finance companies came under pressure, the government kept defending the currency and losing reserves. After the second speculative attack in July 1997, the Bank of Thailand finally abandoned the peg and let the baht float. The baht depreciated by about 15 percent in the first week alone and the currency crisis spilled over to other East Asian countries, gaining further momentum in the later part of the year.

Through December 1997, the Thai economy experienced large outflows of capital, steep depreciation of the baht and a flight of deposits from weak financial institutions. In response, the government put in place a macroeconomic stabilization program with the help of the IMF and the World Bank.[26] While the program helped restore market confidence and maintain broad exchange rate stability, high interest rates slowed economic recovery and investments.

Given its dire need of cash and conditionalities on IMF loans, the government was expected to accelerate privatization and encourage greater foreign participation in the economy. Due to the high debt burden of EGAT and a shortage of funds to meet existing investment priorities, privatization of EGAT and the power distributors was included as an IMF conditionality. However, the new government adopted a slower approach to privatization, preferring to privatize the most profitable enterprises later once stability returned to markets.[27]

In the fourth quarter 1997, EGAT revised the standard PPA that it signs as part of its IPP program. To reassure developers, EGAT set a floor rate of 27 baht to the dollar, with provisions to compensate developers for the difference should the baht fall lower. In the meantime six investments under the Small Power Projects program (SPP) were canceled by developers unable raise financing.

The financial sector restructuring made banks extremely cautious in extending loans, while the cashflow of 32 percent of non-financial firms listed on the Stock Exchange of Thailand (SET) was insufficient to meet interest payments. Debt servicing difficulties were particularly severe in the real estate, retail, and manufacturing sectors.

In early 1998 the financial position of the corporate sector worsened as a result of deepening recession, exposure to foreign exchange losses, and relatively high interest rates.[28]

Since April 1998, the government has undertaken major initiatives to promote corporate restructuring in Thailand, like more liberal tax treatment of debt restructuring, new regulations on debt restructuring and loan provisioning, and amendment of the Bankruptcy Law. However during 1998 the depreciation of the baht, high interest rates, difficulty in accessing credit, and falling domestic and external demand further weakened corporate balance sheets and reduced profitability. Corporate distress, in turn, contributed an increase in non-performing loans in the financial sector.

To establish procedures for voluntary corporate restructuring, the government formed a Corporate Debt Restructuring Committee (CDRC).[29] The *Framework for Corporate Debt Restructuring in Thailand* was announced by the Bank of Thailand at the end of July 1998.[30] In mid August 1998, the government announced measures for resolving Thailand's banking crisis and restoring credit flows.[31]

On a positive front, the crisis has not made the government averse to privatization. In 1997, the government formulated a Corporatization Act to guide enterprises interested in privatization to evaluate and transfer assets to a new corporation and on September 1, 1998, the Cabinet approved a Master Plan for State Enterprise Reform. The Master Plan lays out a comprehensive strategy and timetable for privatization in infrastructure, as well as for various other state owned enterprises.

In March 1999 the Senate finally passed the Corporatization Law, which has been in the works for several years,[32] and passed critical bankruptcy legislation. Bank restructuring is slowly progressing, non performing loans are still on the rise, and new lending is scarce. Thailand's recovery remains intrinsically linked to global economic prospects and regional developments.

Recently, a more conducive macroeconomic environment including a relatively stable baht, falling interest rates and a flexible fiscal stance represent the first signs of economic recovery.

The Privatization Program in the Infrastructure Sector: An Overview

Currently, 65 state-owned enterprises operate in Thailand,[33] primarily in four infrastructure sectors—energy, telecommunications, transportation and water—as well as in banking, services and manufacturing. Many of these activities are generally considered to be outside core government functions, and could be delivered through private sector participation.

The Thai privatization program began in 1988 with the implementation of the Sixth Five Year Plan. Unlike many other East Asian economies, private enterprise has always been encouraged in Thailand,[34] even though SOEs had an important role in economic policy. The State Enterprise Asset Transformation Act of 1992 set forth the legal framework for privatization.[35]

On 1 September 1998 the cabinet approved the privatization Master Plan, which systematically deals with the policies to develop and implement structural reform in four main sectors: communications, water, transportation and energy. It also includes a framework for the privatization of 42 SOEs encompassing other sectors, such as banking, industrial, commercial services. The Master Plan is to provide a framework for the long-term reform of SOEs, thus improving efficiency and international competitiveness, and contains a proposal for legal reforms[36] and a provision for the establishment of independent regulatory bodies in each of the infrastructure sectors of telecommunications, water, transport and energy. The function of regulators in each sector will include: licensing, reviewing and setting tariffs, regulating service quality, competition regulations etc. The State Enterprise Policy Committee (SEPC), a Cabinet sub committee, will monitor the privatization program.

However, since IMF has eased up on pressuring the government on privatization, the privatization process itself is proceeding more slowly now. The current focus is on

Table A2 Electricity Medium and Long Term Plans

Growth in supply and demand of energy until end of Eighth Plan

1995	14,372	11,880
1996	15,628	13,009
1997	16,960	14,193
1998	18,261	15,315
1999	21,136	16,446
2000	22,836	17,685
2001	25,376	19,029
2002	26,878	20,237
2003	28,376	21,440
2004	30,076	22,690
2005	31,766	23,997
2006	33,456	25,371
2007	35,296	26,835
2008	37,405	28,409
2009	39,318	30,044
2010	41,618	31,749
2011	43918	33,532

Source: National Energy Policy Committee.

fulfilling the prerequisites of privatization including working on regulatory frameworks and improving legislation relating to competition, monopolies, and consumer protection.

Sub-Sector Profiles

Power generation and distribution

The electricity supply market in Thailand is dominated by three SOEs:

1. The Electricity Generating Authority of Thailand, EGAT,[37] responsible for generation[38] and transmission; it relies mostly on its own plants, having only one IPP providing it with power, the Electricity Generating Company plc (EGCO).
2. The Metropolitan Electricity Authority, MEA, responsible for distribution in Bangkok.
3. The Provincial Electricity Authority, PEA, responsible for distribution in all other areas.

The National Energy Policy Office (NEPO) has responsibility for all three companies, which are expected to be privatized completely by 2002/2003.

Significant private sector participation has already taken place in the Thai energy sector, primarily through extensive use of Independent Power Producers (IPPs) and facilitation of privately owned distributed generation facilities under the Small Power Producer (SPP) program.[39]

Between 1993 and 1997, electricity production increased 49.1 percent at an average annual growth rate of about 10 percent. Electricity consumption in the same period increased 50.5 percent or about 10.2 percent annually.

The crisis has been taken into account in the government's most recent Power Development Plan (PDP 99-01, table A2). Consequently, peak demand from the current period through 2011 has been lowered from 36,482 MW to 30,587 MW. The IPP program has experienced the largest setback in terms of falling short of projected capacity.[40] However, the government had estimated that by 2011 about 51 percent of the present energy supply will be sourced from IPPs.[41]

As a result of the crisis, PPAs are being renegotiated. Due to lower than anticipated demand and the ongoing financial problems, EGAT is asking IPPs to delay projects at least until 2002 or 2003.

EGAT will be progressively privatized, by spinning off separate generating plants[42] and selling stock in the new enterprises, with assets in generation sold first and the government retaining control of the transmission network[43] and a smaller number of generation assets.

In third quarter 1998, EGAT issued a $300 million bond due 2008—one of the first

such offerings from Asia since 1997. Moody's gave the issue an A3 rating because it is backed by the World Bank and the Kingdom of Thailand.

The next stage of industry transformation will be the establishment of competitive markets across all stages of the energy supply chain. According to the Privatization Master Plan, an Independent Regulatory Body, to be known as the National Energy Policy Regulatory Office, is planned to regulate the electricity industry to ensure full competition under market mechanisms, to create confidence among private investors, and to provide fairness to both investors and consumers.

Oil and gas

The oil and gas sector comprises a major SOE, the Petroleum Authority of Thailand, PTT. Because of the crisis, Thailand's overall petroleum and gas consumption fell markedly in 1998. PTT is divided into three business units, PTT Oil, PTT Gas, and PTT International. Accounting for over 90 percent of profits, PTT Gas is the most profitable. There is debate over whether PTT should be sold as a single units or as three separate units. The National Energy Policy Office (NEPO) would like to break up PTT Gas into three units (transmission, processing, and distribution and marketing) prior to its privatization. The PTT Board opposes private participation in gas, preferring deregulation to take place prior to privatization.

In the Master Plan two key issues are addressed:

1. The separation of PTT's Gas Transportation and Trading Functions to promote competition.
2. The third Party Access to gas transmission pipelines, to facilitate the development of competition in gas supply and increase efficiency.

Transportation

The transportation sector comprises fourteen SOEs which are categorized in three major transportation modes or sub-sectors: land (road, rail and mass transit), water and air transportation. Overall, private sector participation could be substantially increased.

The Master Plan proposes that the provision of transportation services be predominantly the responsibility of the private sector, with reforms separating regulatory functions from policy responsibilities exercised by line government agencies. Regulatory bodies might be created at the sub-sector level (land, water and air) or within sub-sectors.

At the enterprise level, immediate financial restructuring assistance is planned for the State Railways of Thailand (SRT) and Bangkok Metropolitan Transit Authority (BMTA). The Board of Thai Airways International (THAI) has rescheduled the time frame for divesting more of the company's shares on the Stock Exchange of Thailand (SET) to July 1999 and for offering stakes in the company to strategic partners by November the same year.

High contingent liabilities in transportation, particularly for the State Railways of Thailand, make financial restructuring an urgent necessity. In 1997, SRT recorded a loss of 1.76 billion baht ($48 million), while receiving a government subsidy of 3.7 billion baht ($ 100 million). Basic maintenance of the railways, and improvement of the safety record, are top priorities. Additionally, SRT is considering new railway lines, and plans to outsource several activities including maintenance of locomotives, rolling stocks and rail tracks. New projects could also give rise to

Table A3 Bangkok Air Traffic Volume

Volume/Year	*1980*	*1990*	*2000*	*2010*
International Passengers (in thousands)	4,138	3423	9,360	15,481
Domestic Passengers (in thousands)	452			
Total	4,590	14,329	35,016	55,949
Cargo (in thousand tons)	111	447	1,353	2,463
Flights (in thousands)	54	109	203	279

Source: Airports Authority of Thailand.

property development opportunities and the provision of services. The Master Plan has proposed for SRT a separation of infrastructure, operations and real estate assets, with private sector participation in operations and real estate.

In the air transport sector, infrastructure is under the shared responsibility of the Airport Authority of Thailand (AAT) and the Civil Aviation Department (CAD). Thailand has six international airports and more than 29 domestic airports. The largest airport, Don Muang, handles more than 12 million international and nearly 5 million domestic passengers a year. These volumes are expected to more than double by the end of 2010 (table A3), requiring additional capacity. Major air transportation projects, feasible for private participation, include the Second Bangkok International Airport (SBIA) at Nong Ngu Hao, the Global Transpark (GTP) at U-Taphao, and the Heavy Aircraft Maintenance Center (HAMC), also at U-Taphao.

Communications

Thailand has traditionally operated its telecommunications network through two SOEs with the Telephone Organization of Thailand (TOT) primarily responsible for national communications and the Communications Authority of Thailand (CAT) primarily responsible for international communications and the postal services. These enterprises have operational and regulatory authority over telecommunications in their respective areas, and are under the authority of the Ministry of Transport and Communications (MOTC). While CAT and TOT compete in some areas such as cellular, and paging services, they largely operate in exclusive product markets. Both TOT[44] and CAT are being privatized by 2000. Presently, the telecoms regulatory structure is confusing and outdated.

In accordance with a commitment to the World Trade Organization to fully liberalize the telecommunications market to foreign competition by 2006, as well as because of IMF loan conditionalities, Thailand has begun to open the sector to private competition. This strategy is put forth in the Telecommunications Master Plan, approved by the Cabinet in November 1997, which envisages a partial liberalization of the market for domestic competitors followed by full liberalization. According to the Telecommunications Master Plan, the government intends to convert BTO concessions into BOO licenses, after which operators, including CAT and TOT, will pay license fees to a newly established National Communications Commission (NCC). Compensation from concession conversions will be used to reduce service fees.

Draft Telecom and NCC Acts to regulate the sector are currently being reviewed by the Juridical Council and the Ministry of Transport and Communications which hopes to launch the NCC by the end of 1999.

As regards the postal sub-sector, the existing MOTC Plan proposes the creation of a new Postal Act and the formation of a new public enterprise out of the current post division of CAT. The sector plan envisages a transitional market structure with restricted competition of 2-5 years, while the open competition regime with greater product and functional market competition will commence in 2002 to 2005.

Water and sanitation

Water supply and distribution systems in Thailand are primarily covered by three state owned enterprises. The Metropolitan Waterworks Authority (MWA), which deals with the production and distribution of tap water for Bangkok and the outlying urban areas, the Provincial Waterworks Authority (PWA), which treats and distributes tap water for regions outside of urban areas, and the Waste Water Management Organization (WWMO), which treats wastewater. Municipal and private water companies also exist.

The Master Plan proposes two strategies for increasing private sector participation in MWA, aimed at improving service quality and reducing the city's unaccounted for water (40 percent of total production). Options include a long-term concession or Corporatization and sale of shares to a strategic partner.[45]

For PWA, the Master Plan proposes dividing the authority into several separate regional water utilities, with private sector participation initiated on a case by case basis. MWA and PWA currently serve as both policy maker and regulators for the water sector. In the future, with increased private participation, it is expected that these authorities will shed their policy making and service provision functions and be transformed into regulatory bodies.

Malaysia

Crisis and Adjustment

Before the East Asia crisis erupted, Malaysia had been among the most vibrant East Asian economies. Between 1991 and mid-1997, GDP growth averaged eight percent annually. Market capitalization at the Kuala Lumpur Stock Exchange (KLSE) had grown from $64 billion in 1991 to $313 billion in 1996, becoming one of the largest in the region.[46] Privatization, formally launched in 1991 under the Privatization Master Plan (PMP), was on a well-established course and by early 1996 a total of 165 privatizations and project financings had been completed. Private participation in infrastructure had been particularly striking in the areas of transport and power generation and major projects undertaken through mid-1997 were efficiently implemented on a timely basis.

However, signs of increasing stress in Malaysia's economy became evident since 1994, as a result of increasing credit growth rates and slowdowns in exports. By early 1997 the stock market began to drop and the emerging excess supply in the property sector pushed down real estate prices.

After the Thai baht was floated in July 1997, the government sought to support

the ringgit by intervening in the exchange market and sharply hiking short -term interest rates; after those measures proved to be inadequate, authorities allowed the exchange rate to depreciate. In December 1997, large infrastructure projects (representing 22 percent of GDP), including the Bakun Hydroelectric Dam, the second phase of the new federal capital city, and the Kuala Lumpur Linear City were indefinitely postponed. The government sought to reduce speculative pressures through administrative measures, such as restraints on foreign exchange swap transactions, which regardless eroded investor confidence and intensified pressures in financial markets. Confidence was further weakened by the proposed takeover of Renong by its subsidiary United Engineers Malaysia (UEM).[47]

Notwithstanding the financial turmoil, new deals in the infrastructure sector were completed in 1997, including the Kuala Lumpur International Airport and the sale of KTM, the national railway network. In the same year, major infrastructure concessions were awarded, including the KL Elevated Highway, the Pandan Corridor Highway, Muar-Segamat-Tangkak Highway, Kajang Traffic Dispersal Ring Road, KL Airport Highway, the Powerton Resources IPP for 120 MW, the Stratavest IPP for 60MW, and the PowerCorp IPP for 30 MW.

Throughout the first half of 1998, economic conditions continued to deteriorate; late in the spring the government introduced more aggressive policies to strengthen the financial sector and revive the economy. In May 1998, under a special act, the government established Danaharta,[48] an asset management company, to speedily acquire and manage non-performing bonds from banking institutions and to enhance their ability to lend. In august 1998 another agency, Danamodal, was established to assist in recapitalizing the financial sector and facilitate new lending activities.

To complement the role of Danaharta and Danamodal, the central bank established the Corporate Debt Restructuring Committee (CDRC) to promote voluntary restructuring between debtors and creditors.[49]

In the second half of 1998, fiscal austerity was replaced by an expansionary strategy and monetary policy was eased. Despite these measures, non-performing loans continued to rise, and the economic conditions deteriorated, with a GDP contraction rate of 8.6 percent in 1998.

To date there are signs of improvements in Malaysia's economy: interest rates have fallen significantly, the stock market has risen more than 100 percent from its lows in September 1998, foreign exchange reserves have risen. The government has put in place a comprehensive corporate and financial restructuring framework.[50] Securities regulations and the Kuala Lumpur Stock Exchange listing requirements have been amended to provide greater protection to minority shareholders and force corporations to immediately announce defaults in debt payments.

Currently a master plan for the rationalization and consolidation of the financial sector is being formulated and is expected to be completed during the first quarter of 1999. Plans to reduce the number of finance companies from 39 to 8 through a series of mergers were announced in early 1998, however the rationalization process has been slower than anticipated due to difficulties related to the economic contraction.

As regards the corporate sector, many corporations are still facing difficulties in

servicing their liabilities. However, relative to other crisis struck countries the external dimension of corporate distress is limited because the bulk of corporate liabilities are in domestic currency rather than in foreign exchange.

The Infrastructure Sector: An Overview

Infrastructure development has been a high priority in Malaysia over the last two decades. Due to the rapid growth of the Malaysian economy, pressure on infrastructure was also growing, particularly in electricity supply, ports, highways, telecommunications and water supply. Power and transportation were identified as crucial infrastructure sectors to be privatized (often under BOT or BOO schemes).

According to the Seventh Malaysia Plan, covering the 1996-2000 period, the private sector is expected to contribute RM68.3 billion ($27.2 billion) or 78 percent of total infrastructure spending in the 1966-2000 period. However the government has been providing support through a number of mechanisms, such as government soft loans, equity investments, directed lending through banks and provident funds, and explicit and implicit guarantees.[51]

Most major concessions have been awarded to local firms. The Malaysian government has emphasized local participation in infrastructure development in order to reduce reliance on foreign funding and expertise, and also to promote indigenous industries. This has been largely successful as Malay share of ownership in industry has increased from two percent in 1970 to over 40 percent in mid-1997.

The financing of infrastructures has been dominated by local capital markets, aided by Malaysia's high domestic savings rate and the government's compulsory pension fund—the Employee Provident Fund (EPF).[52]

In 1996, the government approved the listing on the Kuala Lumpur Stock Exchange of Infrastructure Power Companies (IPCs) to facilitate large privatization projects to be financed directly by the capital markets, provided the project meets certain government and Securities Commission requirements. The IPC listing was designed to encourage new strategic infrastructure projects. PowerTek, an IPP, and Litrak, a toll-road operator, took advantage of their status as IPCs to go to market in 1996.

The crisis in the region forced the postponement of several high-profile privatizations and listings, among them the Bakun hydroelectricity/dam project, one of the world's largest privately-funded infrastructure projects. Reportedly however, even without the crisis, Malaysia's privatization program had started to slow down in 1997 after five years of intense activity (table A4).

In 1998 the government approved three new major infrastructure projects—the KL Elevated Highway, the Pandan Corridor Highway, and the Muar-Tangkak-Segamat Highway—but none of them have progressed. Projects involving neighboring countries, such as the Unity Bridge over the Straits of Malacca, have also been dropped.

To date, the most significant initiative under way to help finance ongoing projects has been the establishment, under the auspices of the Ministry of Finance, of the Infrastructure Development Corporation (IDC). In the first part of 1999, IDC is scheduled to merge with Bank Pembangunan, the government's

Table A4 Malaysia—Infrastructure Projects

	1995 $ (m)	no	1996 $ (m)	no	1997 $ (m)	n	1998 $ (m)	n
Energy and Power	220.00	1	1946.00	2	1362.46	3	717.00	1
Oil Refinery/LNG & LPG Plants	0.00	0	1900.00	1	360.00	1	0.00	0
Oil Exploration and Development	0.00	0	0.00	0	600.00	1	0.00	0
Power	220.00	1	46.00	1	402.46	1	717.00	1
Water	0.00	0	811.36	1	0.00	0	0.00	0
Transport	3344.62	7	825.00	1	147.20	1	0.00	0
Airport	0.00	0	825.00	0	0.00	0	0.00	0
Bridge	677.80	3	0.00	0	0.00	0	0.00	0
Port	63.00	1	0.00	0	0.00	0	0.00	0
Rail—Infrastructure	0.00	0	0.00	0	147.20	1	0.00	0
Urban railways/LRT/MRT	2267.81	2	0.00	0	0.00	0	0.00	0
Road	336.00	1	0.00	0	0.00	0	0.00	0
Telecommunications	383.05	2	1388.18	2	0.00	0	0.00	0
TOTAL	3947.67	10	4970.54	6	1509.66	4	717.00	1

Source: CapitalDATA, Euromoney, ADB, years ending December.

development bank, to form the Development and Infrastructure Bank of Malaysia (DIBM).

Sub-Sector Profiles

Power generation and distribution

Malaysia's total installed capacity is 12,630 MW. Many of the recently built power plants have been fired by gas and by 2000 as much as 70 percent of installed capacity is expected to be gas-fired.

The principal electricity suppliers are: Tenaga Nasional Bhd (TNB), Sabah Electricity Bhd (SEB), and Sarawak Electricity Supply Company. Malaysia projections for power capacity needs are 16,500 MW by 2005, and 40,000 MW by 2020.[53] However, short term needs appear to be satisfied by the current capacity. Recently TNB and EGAT of Thailand have agreed to a 70 milie 300/kV HVDC interconnection between the two countries.

The push for cogeneration is part of the government's drive to decentralize power production, reduce government involvement in the electricity sector, lighten demand on TNB's system during peak periods, lower electric and production costs to industry by as much as 30 percent, and reduce power plant emissions.

The government is seeking FDI as a means of helping the country weather the crisis. But FDI remains a contentious issue in Malaysia and the government is likely to restrict total foreign ownership of power sector assets.

TNB (the largest Malay electricity utility, with installed capacity of 7,500 MW) was partially privatized in 1992 but due to the volatility of its stock since then, the government has not attempted to float it again and continues to be the principal shareholder. A separate company, Tenaga Nasional Generation (TNG) now holds TNB's generation assets. TNG also acts as an IPP.

Currently TNB is struggling to make payments to IPPs and is trying to renegotiate the PPAs. In 1998, Tenaga sold its 330MW gas-fired plant in Malacca to Powertek,[54] and during the third quarter 1998, TNG established a grid system as a step toward creating an Independent Grid System Operator (IGSO) by 2000 that will manage the transmission and distribution system. The creation of IGSO is

part of the government's plan to separate generation from transmission and distribution. It would also allow the purchase of electricity from IPPs through a competitive pricing structure rather than relying solely on PPAs.

Tenaga's losses in 1998 have resulted principally from ringgit depreciation (expensive foreign currency debt service, oil and coal supply cost increases; table A5). Additionally, Tenaga is unable to raise tariffs because it is an SOE and the government has explicitly prohibited it from raising tariffs before 2000. Revenue losses are also arising from meter tampering and theft. Tenaga recently swapped a part of its dollar denominated debt into yen denominated debt,[55] thereby reducing dollar exposure from 40 to 30 percent.

As regards SEB, the other major electricity utility, during the 3rd quarter 1998, a consortium formed by Tenaga Nasional Bhd, Petronas, and Sabah state government agreed to invest $394 million in SEB over the next 7 years, as part of a deal to take control of the 350 MW utility as of Sept. 1 1998.

Oil and gas

The principal player in the domestic oil sector, Petronas, has been able to weather the ringgit fluctuations due to the fact that its revenues are generally US dollar-denominated. Given its strong financial position, Petronas is confident of fulfilling its commitments, which are primarily capital-intensive projects with long gestation periods. Currently, Petronas and Esso are working together on a major gas development project to develop 22 gasfields in the northeastern coast.

Transportation

Before the crisis, the transportation sector was promoted to support economic development and grew quite rapidly.

Table A5 Tenaga Key Indicators

For financial year ending on August 31, in RM billion

	1997	*1998*
Turnover	10.0	11.4
Operating Profit	1.4	0.6
Foreign Exchange Loss	(1.3)	(3.5)
Loss After Tax	(0.1)	(3.1)

Source: The Star, Nov. 1998.

As of October 1998, there were 26 toll bridge and expressway projects in Malaysia for which concessions had already been signed. Of these, 12 projects are open to traffic, six are under construction, and the remaining eight are under negotiation.

Although the current financial crisis affected many of the projects, some of the earlier roads, including the major North-South Expressway, have been financially successful, even though since the eruption of the crisis three-quarters of revenues have been used to service loans. However, projects contracted in more recent years are proving to be financially unviable under the current economic situation.

Kuala Lampur is a modern city served by a network of rapid rail systems (STAR and PUTRA light rail systems, and KTM commuter rail) and high quality roads, mostly built with private sector participation. The rapid pace of infrastructure and real estate development has abated, due to the regional economic crisis. Additionally, serious problems have emerged in the main components of the KL transport sector, namely: financial failure of urban rail mega-projects, and the attendant burdens on government; operational and financial difficulties of the public road passenger transport regime; and increased congestion associated with ineffective private vehicle restraint policy.

All of the urban rail mega projects in KL are facing severe financial difficulties. They are neither in a position to borrow or to pay interest. The government bears a considerable financial exposure to capital costs for the five mega projects under consideration: STAR, PUTRA, KL PRT, ERL and Sentral Station.

Telecommunications

The telecommunications market in Malaysia is one of the most competitive among the South East Asian countries. Fixed line services account for the bulk of Malaysia's telecommunications business and for about 84 percent of telecommunications industry revenues. Three are the major providers (Telekom Malaysia,[56] Celcom, and Binariang[57]). Besides there are two niche players (DiGi Telecom[58] and Time Telkom).

Most telcos have been seriously affected by financial turmoil—Time Telkom has filed for Section 176 which provides court protection from creditors. Binariang, as a result of its cash infusion from British Telecom, is in the strongest position. It is expected that Telkom's fixed line growth will decline 5 percent or more in 1999-2000.

Equal access deregulation (which came into effect in Jan 1 1999 and allows consumers to choose from any of the five providers)[59] is expected to affect competition only in the longer term, after 2000.

The cellular market in Malaysia has been one of the most progressive in Southeast Asia. However, the crisis led to consolidation into fewer, albeit more powerful players. The government has responded to the crisis by increasing the foreign ownership limit (from 30 percent to 49 percent) in an attempt to attract foreign funds into the industry.

The outlook for the Malaysian telecommunications industry remains bleak over the next one to two years. But as the economy recovers, competition among telcos with equal access will pick up.

Water and sanitation

Since before the crisis, several water supply and treatment projects have been constructed on a build-operate-transfer basis. However, poor collection rates are a critical ongoing problem complicated by the economic slowdown and lack of an effective enforcement mechanism.

Prior to the awarding of the Indah Water Konsortium (IWK) concession, local governments bore responsibility for providing sewerage services. However, in most cases they lacked necessary financial or technical resources which resulted in poor maintenance. Through the IWK's project (awarded in 1994), there has been a dramatic improvement in the level of investment and in the quality of service. However, well before the crisis, IWK began facing serious difficulties that threatened its financial viability, and soon after the concession was awarded consumers protested against the rates charged; the compensatory arrangements were reestablished in 1997 at much lower levels. Moreover, in mid 1998 the economic crisis prompted a further 30 percent reduction in charges to commercial sector customers. As a result of these various factors, the government has had to make more than RM 450 million in long-term soft loans to IWK, in addition to other support.

Indonesia

Crisis and Adjustment

Before the crisis unfolded during mid-1997, Indonesia's economy appeared robust, sup-

ported by tight fiscal policies and prudent monetary policies. Privatization was proceeding smoothly,[60] and key macro-economic indicators were stronger than in Thailand and other East Asian countries. The current account deficit had been modest and export growth had been reasonably well maintained.

Nevertheless there was growing evidence of private sector exposure to massive unhedged short-term external debt and weakening in the financial sector. In July 1997, soon after the floating of the Thai baht, pressure on the rupiah intensified. Doubts rose about the government's ability to defend the currency peg. Following a widening of the intervention band in July, the rupiah was floated in mid-August 1997. By early October, the cumulative depreciation since early July became the largest in the Region.

In November 1997, the IMF approved a 3-year stand-by arrangement with Indonesia equivalent to $10 billion. Additional financing commitments included $8 billion from the World Bank and the Asian Development Bank. The main elements of the policy package included tight monetary policy combined with exchange market intervention to stabilize the rupiah, a plan to strengthen the financial sector (including closure of nonviable institutions), and an initial set of structural reforms to enhance efficiency and transparency in the corporate sector.

In order to demonstrate its commitment to the privatization program and to reassure investors, the government continued to grant new contracts for private participation in infrastructure during the first months of the crisis. Proposals were made to establish two new institutions, the Public Private Partnership (PPP) Center, responsible for advising, training, and providing technical assistance to stakeholders involved in privatization projects in infrastructure, and the PPP Coordination Body, to develop and support integrated policies for "cross-sectoral" infrastructure development. Nevertheless, in September 1997, the government issued a decree to review or postpone major infrastructure projects.[61]

Despite the IMF stabilization program, the rupiah depreciated 57 percent relative to the dollar in 1997. The Jakarta Stock Exchange Composite Index was down 37 percent for the year and the exchange rate fell precipitously during December-January. Several banks were insolvent, or at least were suffering from serious weaknesses, well before the crisis. The absence of a coherent strategy and the massive liquidity support from the Bank of Indonesia ultimately led to a loss of reserves. As a result, many IPOs planned for 1997, among which Jasa Marga and PLN, were deferred until market conditions improved.

In early 1998, the government announced a stronger program to reverse the decline of the rupiah. The program included a commitment to tight monetary policy and a comprehensive package of structural reforms prepared by the World Bank. Market reaction was skeptical and the macroeconomic program continued to lag, in part due to the preparations for the March presidential election; meanwhile the economic downturn deepened, while inflation accelerated sharply.

After the re-election of the President and the formation of a new government, the program was cast off track by severe civil unrest, which ultimately led to the resignation of President Soeharto on May 21, 1998. Production, exports, and domestic supply channels were disrupted, banking activities were paralyzed, unemployment was rising, and food prices were soaring. Between June

1997 and mid June 1998, the rupiah registered a cumulative depreciation of 85 percent.

With the continued depreciation of the rupiah the external debt of the private sector became an issue that had to be addressed.[62] An agreement with a steering committee of private creditors was reached on June 4, 1998 ("Frankfurt Agreement") and in September 1998 the government announced a framework (the "Jakarta Initiative") to initiate a market-based, voluntary process of corporate debt workout.[63] A new government entity, the Indonesian Debt Restructuring Agency (INDRA), was established to operate the scheme and implement a set of nonbinding guidelines for debt work-outs with domestic and foreign creditors, according to the Jakarta Initiative.[64]

A revised bankruptcy law came into effect on August 20, 1998.[65] The Frankfurt Agreements, the Jakarta Initiative, and bankruptcy procedures are all complementary parts of an integrated program to accelerate corporate debt workout and corporate restructuring.

In view of the deep Indonesian structural and balance of payments problems, additional financing sources were provided by the IMF, the World Bank, the Asian Development Bank, and bilateral sources.[66]

In recent months, market sentiment has improved and the rupiah has appreciated significantly, providing room for lower interest rates. However, political turmoil, and lack of a clear transparent approach to reforms, continues to dampen economic conditions and prospects.

The Privatization Process: An Overview

By the time the Asian contagion began in mid-1997, Indonesia had made significant strides in expanding private participation in infrastructure.

In 1988 Presidential Decree No. 5 provided the framework for improving the performance of SOEs. A number of measures were taken, including the flotation of minority shareholdings in six companies on Indonesian and other stock exchanges; the use of a wide variety of reform tools such as restructuring, mergers, and other forms of private sector participation (including public share offerings and direct placement or trade sales) were authorized. Stress was placed on accountability for adequate performance, and monitoring tools were strengthened.

Privatization per se was not mentioned as a reform tool. However the Ministry of Finance, in 1989, published a reform program encompassing more than half the then 180 SOE's. The program was not implemented but a number of actions were undertaken, such as changes in the status of some SOE's. Over the following eight years, minority shares in six companies were floated on the Jakarta and Surabaya (and in some cases the New York and London) stock exchanges.

None of the public flotations were privatizations: management control remained with the State, which continued to hold 65 percent or more of the shares. Flotation did however require some prior restructuring, and opened the companies to public scrutiny, audit and accountability. Over this same period various Decrees encouraged private sector majority joint ventures, including those in core sectors of the economy. A number of joint ventures were authorized, notably in the power and transport sectors.

In November 1998 the Masterplan for the Reform of the SOEs was finally published. The Masterplan includes the government's objectives, policies, methods, processes, and

implementation agenda for privatization and restructuring. However, as a result of averse market conditions, only six SOEs out of the planned twelve were slated for privatization in 1998/1999.[67] It is unlikely that the government will be able to privatize even these six (only Semen Gresik has been completed as of December 1998), even though the MoSE is under considerable pressure to generate revenues.[68]

The government is mulling over the idea of popular capitalism and is exploring opportunities to have broader share ownership. It is also considering using privatization proceeds to fund SMEs over the long-term. Broadening share ownership may well increase the population's support for privatization. However, privatization has become highly controversial in Indonesia forcing the government to proceed carefully. Because of overwhelming political uncertainties, the government is afraid to commit to the privatization program and the MoSE itself is highly divided.

Sub-Sector Profiles

Power generation and distribution

PT PLN has primary responsibility for the provision of electricity within Indonesia and is accountable to the Ministry of Mines and Energy.[69] An ongoing restructuring process has taken place since 1994 when four separate entities were established to own and manage power generation activities.

Before the crisis, Indonesia has experienced strong growth in electricity demand with an average rate of growth of 14 percent pa from 1993 to 1997. Since 1985 the private sector has been allowed to invest in power generation. The Independent Power Program began to take shape in the early 1990s and provisions for the development of IPP plants were included within the 6th Plan (Repelita VI) covering the period 1994 through 1999.[70] The first IPP Purchase Power Agreement was signed in February 1994 for Paiton I.[71] Additionally private sponsors were allowed to submit unsolicited proposals to develop generation plants.

However, by the end of 1997 PLN still maintained the monopoly in generation, transmission and distribution., with 98.7 percent of the total installed capacity[72]; only one Independent Power Producer had plants in operation at the end of 1997. Additionally, in 1996 the responsibility to negotiate PPAs with private sector developers was transferred from the Ministry of Mines and Energy to PLN.

However, as of December 1997, PLN had signed 26 PPAs with private companies[73] and there were plans to privatize two of PLN's subsidiaries (both in the generation sector accounted for about 80 percent of PLN's 1996 total revenues). Because of the crisis several regulatory issues had to be resolved before the privatization could take place, and thus plans were postponed.

In late 1997 most projects were suspended[74] or cancelled by presidential decree, including some which had reached financial closure and had begun construction. Fears of an over supply on the Java-Bali grid system began to surface even before the crisis.

Suffering a severe shortage of cash flow, PLN, in desperation, sought to unilaterally amend PPAs by paying in local currency at a rate well below the market. Since that time, PLN has met its payment obligations to the small number of operating IPPs, while it negotiates with those which are expected to come on-line in 1999 (including the Paiton

plants). PLN's profitability has gone down drastically; i.e. from profits of Rp. 1.2 trillion in 1996 to losses of Rp. 0.6 trillion in 1997 and Rp 14.5 trillion in the first half of 1998. With more than 9,000 MW of capacity under construction or at an advanced stage of development, financial stress is likely to increase for PLN over time.

Based upon agreements with the IMF, the government agreed to raise tariff levels by 20 percent in May, August and November 1998.[75] However the increase for small consumers introduced in May 1998 was subsequently reversed and the increases planned for August and November 1998 were scaled back to 18 percent. Both increases have since been cancelled with the government citing social issues and the prospect of civil unrest.

In 1998 in response to the problems raised by the currency crisis, the government developed a Power Sector Restructuring Policy to restore financial viability, to increase competition, and to stimulate private participation.[76]

The program envisages geographical unbundling of electricity supply as well as separation among generation, transmission, and distribution. An independent regulatory agency is expected to be established and there are plans to introduce a power pooling system for the Java Bali grid system.[77]

According to the Privatization Master Plan, the restructuring objectives are to strengthen the balance sheet and cash flow of PLN, and prepare PLN for privatization in2-3 years time.

At present Indonesia neither exports or imports electricity from neighboring countries in South East Asia. However this is expected to change with the implementation of an ASEAN wide electricity grid. Plans have been put forward for a large 5,000 MW coal fired plant, to be located at Cirenti, that would form the basis of future electricity trade with Peninsula Malaysia. The catalyst for electricity trading with East Malaysia is likely to be the development of the Bakun hydroelectric dam in the Malaysian state of Sarawak. Through a 600 MW natural gas fired power plant on Batam, Indonesia could become a member of the electricity pool in Singapore. Approvals for the construction of the new plant are currently being finalized.

Oil and gas

In 1980-1981, the oil industry accounted for over 70 percent of the government's total domestic budget revenue and for 82 percent of export earnings. Since then the economy has diversified. In 1996-1997, oil industry products were still the single largest source of fiscal revenue and foreign exchange, accounting for 23.6 percent of government revenue and 12.7 percent of export earnings. In recent years, however, production capacity, and investments have been falling. Indonesia may become a net importer during the next century. In 1997, Pertamina, the oil and gas state monopoly, was identified for privatization. However at present there is no plan for a public offering in the short or medium term.

To reduce exploration costs of Pertamina, while at the same time to reduce risks faced by foreign contractors, private companies continue to be involved in oil and gas exploration. As of end 1995, there were 193 oil and gas Production Sharing Contracts[78] and 28 Joint Operation Arrangements[79] between Pertamina and private companies.

The extensive gas reserves are being developed in cooperation with private companies through contract mechanisms similar to those in the oil sector. The sharing ratio for gas, however, is based on a fixed formula

that allows the contractor to retain an after-tax income of about 30 percent of the value of the gas. LNG is being exported to regional trading partners.

Additionally, Indonesia has encouraged private participation in the coal industry through the use of 30-year concessions. Several licenses have been awarded to domestic companies for coal exploration and development. Coal output increased from less than 650,000 tons in 1983 to about 52 million tons by 1997.

Transportation

At the end of 1997, the private sector had participated under a BOT system in constructing 148km (approximately 31 percent, of toll roads operated by Jasa Marga[80]) while another 236 km was in construction phase.

Indonesia has been one of the main East Asian countries implementing private toll road BOTs. In developing a framework for private sector participation in roads, the Government of Indonesia has passed through a number of development stages:

- Toll roads financed, constructed and operated by a government body (1978-1983).
- Toll roads financed with foreign development loans (1983-1990).
- Non competitive engagement of the private sector in toll road construction and operation through BOT projects (1987-1993).
- Open competition and tendering of BOT toll road projects (1994—present).

Railways are state-owned. However, in 1994 Perum Kerata Api, the public company started partial privatization by inviting private firms to form service joint ventures on a profit-sharing basis.

Ports have been significantly developed, particularly with foreign assistance. In February 1999, Indonesia awarded a management contract to operate Jakarta's largest port authority to a private company. This has been the first successful deal in quite some time for Indonesia's stalled privatization initiative.

The liberalization of the shipping industry in recent years has resulted in efficiency gains. One component of these liberalization measures in shipping has been to raise the maximum allowed foreign equity holding from 80 percent to 95 percent. Additionally, reforms introduced in 1994 enables a greater extent of private and foreign investment in airports, primarily through the BOT scheme. Garuda Indonesia, the international airline, and PT Pelabuhan II, the port, are slated for privatization in the next two to three years.

Telecommunications

The domestic and international telephone systems are operated mainly by two predominantly state-owned enterprises, PT Indosat and PT Telkom, which were partly privatized in October 1994 and November 1995 respectively, and by a privately owned firm, PT Satelindo.

The State-run operators PT Telkom (Telkom) and PT Indosat (Indosat) have exclusive rights to offer domestic and international services respectively. The Basic Telecommunications Law No. 3, passed in 1989, authorizes the participation of private companies to provide telecoms services and infrastructure.[81] Together with government regulation No. 8/93 in January 1993, these policies asserted the government's commitment to the deregulation of the telecoms sector.

The private sector can proceed to provide non-basic services without the co-operation

of either Telkom or Indosat, although a license form the MTPT remains a requirement.

To achieve the fixed line targets of its development plan, Repelita VI, the government introduced the "Kerjasama Operasi" (KSOs) or joint operating scheme formula. In 1995 , five international consortia agreed to set up KSOs with Telkom. Each of five private consortia was awarded development and operational responsibilities in one of Telkom's regional markets. The material terms of each KSO agreement are essentially the same; each consortium is treated as a division of Telkom, and is managed and operated by the KSO investor on behalf of the national operator for a term of 15 years beginning in 1996. Collectively, the KSO investors have been charged with the planning, engineering, financing and construction of a minimum of 2 million lines.

In mid 1998, the Indonesian government extended the deadline for KSO operators to install telephone lines on behalf of PT Telkom (from March 31, 1999 to March 31, 2003) in light of the economic crisis.

At present, the government is working on a telecommunications bill to open up the sector to both foreign and local companies which will end the market leads of the two SOEs, PT Telkom and PT Indostat. The bill will allow foreign and local firms to run domestic, long-distance and international telephone systems. To date, liberalization has been limited only to domestic basic line and cellular services.

Indosat is expected to be privatized in the near-term. Additional privatization of Telkom[82] will take much longer as corporate re-structuring must take place before strategic investors will be interested.

Capacity utilization of both Telkom and KSOs improved in 1998. However, a large percentage of installed lines (over 1.6 million or 23 percent of Telekom's local access network) do not have any traffic and thus do not generate revenues. Therefore, developing a marketing strategy to make these operations more profitable must be a priority in 1999.

At the end of September 1997 there were 1,041,467 cellular subscribers compared with 689,402 subscribers at the end of March 1997. Nevertheless, as a result of the economic crisis and sharp price increase in handsets,[83] Indonesia's mobile cellular operators have encountered a substantial reduction in subscribers. Between September 30 1997 and September 30, 1998, the total number of cellular subscribers decreased by 26.8 percent.

In May 1998, government responsibility for Telkom and Indosat has moved from the Department of Tourism, Posts and Telecommunications to the Ministry for State-Owned. To date, substantial work has been undertaken to prepare a new draft law for the telecommunications sector and the new draft regulations that will in part consolidate a large number of existing government regulations, presidential decrees and ministerial decrees.

Water and sanitation

A number of concessions have been awarded to the private sector to manage the water supply and distribution network and to implement greenfield projects under the BOT scheme, as reported in table A6.

However more transparency and regional autonomy for sectoral planning, implementation, and financing are required. In the Miyazawa initiative document there are recommendations for a water sector adjustment loan to implement water sector

Table A6 Water Projects in Indonesia

Year	*Project name*	*Sponsor*	*Location*	*Amount*	*Contract type*
1996	Adhya Titra Batam	Biwater, Bangun Cipta, Syanbata Cemerlang	Batam Island	$200 expansion investment; $10 m initial investment.	25 concession for water supply
1997	Medan	Lyonnaise	Northern Sumatra Province	$85m	BOT, greenfield project; 25 year contract; construction to be complete by 2003; 260,000 cubic meters per day.
1997	North Aceh Industrial water supply	PT Titra Putrall Pase	Lhokesumawe, North Aceh	Investments of $52.8 m over project life	25-year BOT concession; capacity for 40,000 cubic meters per second;
1997	Sidoarja	United Water of Thames Water and Compagnie Generale des Eaux	Sidoarja city	$34.4m	25-year BOT concession; capacity of 20,000 cubic meters per day.
1998	Jakarta	PT Garuda Dipta Semesta of Salim Group and Suez Lyonnaise de Euax	Jakarta-Eastern District	$80 m initially will amount to $300 m by end of concession.	25 year BROT, municipal concession;
1998	Jakarta	PAM Jaya, KT and Kekarpola Airindo (owned by Thames water and Kekar Plastindo)	Jakarta-Western District	$26 million initially; plans to borrow $80 m in first five years; $276 total project cost.	25 year BROT municipal concession; capacity of 291,800 cubic meters per day.

Source: [77]

reforms thus improving policies, budget procedures, and public and private involvement arrangements.

Philippines

Crisis and Adjustment

After the economic and financial crises of the late Eighties and early Nineties, the Philippines launched a robust reform program which included privatization, trade liberalization, and the involvement of the private sector in the development and financing of major infrastructure projects. As a consequence of the economic and financial reforms, real GNP grew at 6.9 percent by 1996, poverty was reduced, FDIs almost tripled between 1991 and 1996, and market capitalization multiplied six-fold in the four years to 1996. However, early in 1997, the rising trade deficit and the rapid pace of credit expansion led to anxiety over the Philippines' financial market; when the Thai crisis

erupted, the Philippine economy was among the first hit in the region.

Faced with a substantial attack on the peso after the Thai devaluation on July 2, 1997, the central bank (Bangkok Sentral Ng Pilipinas—BSP) reduced its intervention in the foreign exchange market as of July 11, 1997; consequently the peso devaluated significantly. At end of 1997, adjusted gross reserves reduced by one-third to $7.6 billion. Net inflows of foreign capital collapsed (from some $8 billion in 1996 to less than $1 billion in 1997) and there was significant drop in the number of investment proposals presented to the Board of Investments by the private sector.

Yet, the economic and social impact of the crisis was restrained in 1997, with a 5.1 percent increase of real GNP growth. The recession became more evident in 1998 due to high interest rates, low domestic and external demand, uncertainty in financial markets, and the effects of el Niño on agriculture which led to an overall GNP growth decline at 0.7 percent, despite the successful containment of inflation at below 10 percent.

In the last months, the peso has strengthened, in response to better than expected resilience in the economy. Early in January 1999, the Philippines became the first ASEAN country to re-enter the global bond market.

Overall, the economic downturn has been one of the least severe in the Region, and there has been no need thus far for the government to recapitalize private banks. While there is at present no systemic crisis in the banking[84] and corporate sectors,[85] Philippine banks and corporations are facing major strains. Non-performing loans among commercial banks (which hold 90 percent of the banking system assets) have increased to around 11 percent as of December 1998. There has also been an unprecedented increase in the number of firms seeking protection from their creditors under the country's quasi judicial process for dealing with bankruptcy. This process is administered by the SEC. A large number of profitable firms are facing liquidity constraints.

The commercial banking sector remains the dominant source of debt financing. At present there are restrictions on investment allocations for non-bank intermediaries and constrains in debt securities issued by private companies. Ongoing and proposed reforms in the contractual savings sector are expected to enhance the role of non-bank financial institutions in providing long term debt. Efforts are underway to develop the capital market,[86] expand the pool of contractual savings, and reform the housing finance system.

At present the government's objective is to maintain inflation under control, to stimulate the economy through public deficits to be financed though international rather than domestic sources, and ease downward interest rates through reductions in reserve requirements in order to stimulate bank lending to the private sector.

The Legal Framework for PPI Projects

In 1987 Napocor's (National Power Corporation) monopoly in the power sector was ended through Executive Order 215 (EO 215). In 1990 the government passed Republic Act 6957 (RA 6957), the first BOT law in Asia, which expanded the participation of the private sector in infrastructure development to sectors such as telecommunications, ports, toll roads, airports and water utilities. The private sector was allowed to operate the facility and to charge user tolls, fees and rentals

sufficient to earn a reasonable return on investment. By the same act, the government relaxed some restrictions on foreign ownership and prevented the use of explicit government guarantees.

In 1994, the BOT law was modified and a new BOT law introduced, Republic Act 7718 (RA 7718) so that a greater number of variants on the BOT scheme would be allowed. In addition, the new law endorsed a streamlined approval process and allows the consideration of unsolicited project proposals; direct negotiations could be carried out under certain conditions.

The BOT law was intended to promote private sector participation in infrastructure. However, apart from some major investments in BOT power projects, the developments in other areas have been slow and only two major projects, the Light Rail Transit (LRT) line No. 3, and the privatization Metropolitan Waterworks and Sewerage System (MWSS), materialized. Part of the delay can be attributed to the decentralization process which began in 1991 gave local governments the authority to promote infrastructure projects but did not provide them means to negotiate effectively the agreements.

Other constraints for private participation stem from weak or inadequate regulatory systems and institutions, as well as government's own cautiousness with taking on additional liabilities. Additionally, lack of an effective competition policy has heightened barriers to entry and adversely affected the efficiency of the private sector. The new Securities Act, which has been recently presented to Parliament, would greatly enhance the possibilities for enforcing disclosure standards and protect the rights of minority shareholders.

According to the latest Bank estimates, the country's need for infrastructure is between $36 to $45 billion for the next ten years, approximately an average of 7 percent of the Philippines' annual GDP. Due to the lack of GOP budgetary resources and the massive infrastructure requirements there is still the need for private sector presence.

Foreign investments for infrastructures and facilities can also be attracted the development of an integrated package of policies and streamlined procedures to be offered by ecozones, which are integrated parts of industrial, commercial, or residential complexes.[87]

The latest development in the Philippines private participation scheme favors the Build-Operate-Own model instead of the Build-Operate-Transfer mechanism. The BOO scheme is popular given the difficulty in defining the correct transfer price and the uncertainty about the ability of the government to pay the transfer price at the expiration time, as well as doubts about the government's ability to take care of future maintenance.

However, while the commitment to PPI is high at the senior central government level, it is more uneven and less clearly expressed at the level of Local government Units (LGU).

At present, there are many potential PPI projects in various stages of development, but few are coming to closure. Moreover, the East Asian financial crisis has adversely affected the development of a future pipeline of projects.

While the environment for FDI has improved greatly, the economy is still underperforming relative to its potential. The Philippines may lag behind the other countries in the Region in attracting FDI because of uncompetitive investment incentives offered by the Board of Investment (BOI) to attract foreign capital.[88] Additionally the gov-

Table A7 Summary of Installed Capacity as of December 1998

December year end	*Unit*	*1994*	*1995*	*1996*	*1997*	*1998*
State owned/operated	MW	5,634.3	5,997.2	5,993.3	5,992.9	6,168.7
percent of total	percent	60.2	60.5	54.6	52.3	53.1
NPC owned - PO	MW	2,024.5	2,074.5	2,134.5	2,104.5	2,104.5
percent of total	percent	21.6	20.9	19.5	18.4	18.1
IPP power plants	MW	1,702.0	1,834.0	2,843.6	3,370.5	3,344.8
percent of total	percent	18.2	18.5	25.9	29.4	28.8
Total installed plants	MW	9,360.8	9,905.7	10,971.4	11,467.9	11,618.0

Source: AID Research.

ernment of Philippines has low financial and staffing resources earmarked for investment promotion.

The most recent Philippine National Plan, Plan 21, promotes close collaboration between the GOP and the private sector in terms of planning, designing, and implementing infrastructures. Plan 21 recognizes that PPI enhances the GOP's critical role of mobilizing the resources for modern infrastructures that foster integration of markets within the country and the rest of the world. However, the regulatory and policy framework will need to be clarified if progress with PPI is to be maintained.

Sub-Sector Profiles

Power generation and distribution

The National Power Company (Napocor or NPC) the largest state-owned company in the Philippines, is responsible for electricity generation and transmission. It also purchases electricity from a number of Independent Power Producers.

The total installed capacity connected to the transmission and distribution network was 11,618.0 MW at the end of December 1998, of which 28.8 percent is from IPP plants (table A7). Including those projects where the private sector operates power stations (indicated as NPC—PO in table A7), the IPPs account for 46.9 percent of total installed capacity.

The Manila Electric Company (MERALCO) is the largest private distributor in the country. The distribution of electricity is provided also by some 135 private investor-owned distributors (IOD) or member-owned cooperatives,[89] all of whom have exclusive rights to provide medium and low voltage services within their franchise areas and are subject to price regulation.

Since 1993, the Philippines government has taken steps to achieve sufficient power production capacity. In particular, the government signed Executive Ordinance 215, and then developed a series of BOTs, in particular in power generation, on the basis of it.[90]

After BOT law approval, the immediate needs in the power sector were successfully addressed, but at a significant cost to the government; the GOP assumed heavy contingent liabilities to offset part of the risks of Independent Power Producers (IPPs), ultimately translating these into high end-user tariff for consumers.

The regional financial turmoil has exacerbated the already weak financial position of

NPC. The major impact of the economic downturn has been to defer the commissioning of new projects in the short to medium term.

A process of reform is currently in progress and will lead to the eventual privatization of NPC which will leave the company with responsibility for the transmission network only. Privatization plans for NPC assume that after 2005 the company will source all new generation capacity from the private sector. Once the privatization of NPC has been completed the State sector will own and operate less than 10 percent of all generation assets installed.

NPC launched a one day sales program at the end of 1998 as the first step towards a fully fledged power pooling system in the Philippines. The advent of the Omnibus Electric Power Bill will provide further opportunities for the private sector and will include a re-negotiation of the existing contracts.

At present, regulation of the sector is undertaken by the Energy Regulatory Board and the key policymaking institution is the Department of Energy. In addition, there is a National Electrification Administration responsible for promoting the total electrification of the country. Implementation and monitoring of the industry rules and regulations is carried out by the Energy Regulatory Board.

Oil and gas

In late 1998 the government announced its intention to privatize the Philippine National Oil Corporation-Energy Devpt Corporation (PNOC-EDC).

The Department of Energy has launched an indigenous natural gas program that aimed to add 4,500 MW of new capacity between the period 1996 to 2005. PNOC-EDC is reviewing plans for the development of power plants based upon gas findings on Fuga island and in southern Mindanao.

At present the majority of plants continue to use oil (fuel and diesel) and the objective of the program is to diversify the use of fuels as well as cut down on imports. The principal gas field to form the base for natural gas power stations is the offshore Camago field, in the South China Morning Sea operated by Shell, which is seeking a long term gas sales contract with the government.

Transport

The Philippines transport sector is essentially bi-modal: road transport and inter-island shipping. Together, these account for almost 100 percent of freight and 97 percent of passenger traffic.

The road network is poor and rural areas can be hard to reach. The objective of the Department of Public Works and Highways is to increase the road density from 0.54 km / km2 to 1 km /km2 in the year 2000. This implies construction of 139 000 km of new roads.

In terms of private investment in the road network, the government has proposed 26 projects valued at more than $ 10 billion, although of these only three/four are under implementation.[91] Many projects might efficiently be turned over to the private sector through ROT[92] or other forms of contracts.

There are close to 100 ports, but the six biggest account for 80 percent of commercial use. The main international ports are Manila, Cebu, and in the near future, Subic Bay. The Philippine Ports Authority (PPA), an autonomous agency under the jurisdiction of the Department of Transportation and Communication (DOTC) owns and operates the majority of ports in the Philippines and regulates the nation's port system. PPA ports

have private operators with short-term lease agreements.

Warehousing, storage and cargo handling are provided by both PPA and private operators. Outside of the PPA system, private operators continue to own and run terminals associated with industry-specific captured cargo. The railroad system is almost nonexistent and cannot be used for transportation. There are only 840 km of railroads. However, several projects are in the pipeline. A privately owned company is working on a rail link between Manila and Clark. Additionally the government is involved in the development of its light rail transit system in Manila through private arrangements. One of the most recent deals was the Build Lease Transfer contract to implement the Light Rail Transit line 3 (LRT 3).[93]

The airport sector is managed, operated and regulated by the Aviation Transport Office (ATO), an office under direct supervision of the Department of Transportation and Communication (DOTC). To date no airports in the Philippine have been sold, concessioned, leased, or built on a BOT basis[94] and there are no plans for decentralizing Philippine's airports or restructuring ATO.

Telecommunications

PLDT, a private monopoly, has been the dominant provider of telephony service in the Philippines until recently. In 1993, the government decided to liberalize and open up the Philippine telecommunications sector to competition through two Executive Orders (EOs). EO 59 forced PLDT to interconnect with other operators, thereby sharing the profitable long distance revenue stream as well as offering other operators access to PLDT subscribers. EO 109 awarded local telephone exchange licenses to operators.

Under EO 109, the companies granted cellular or international gateway (IGF) licenses were required to build local telephone lines in specific regions of the country[95] in return for attractive licenses. In all, a total of 11 licenses were awarded under the principle of 2 operators per region (PLDT plus one new licensee).[96]

The current concern of the new players is the issue of interconnection because the only nationwide telecoms backbone is operated by PLDT and an interconnection fee has to be remitted to PLDT. As the PLDT's interconnection fee is about ten times that of the United States, Australia, Canada, Sweden and Britain, a company, Telicphil, owned by the other operators, is setting up an alternative network.

The mobile wireless segment is the most dynamic in terms of growth, competition, and technology. In 1992 there were only two cellular mobile telephone operators, Pilipino Telephone (PILTEL) and Express Telecommunications (EXTELCOM) in the cellular mobile telephone industry. These two were joined by Smart Communications in 1993, and later by Globe Telecom and Isle Communications, both using digital GSA technology.

The Public Telecommunications Policy Act of 1995 formalized the role of the two entities responsible for regulating the telecommunications sector in the country. These are: (i) the Department of Transport and Communications (DOTC), and (ii) the National Telecommunications Council (NTC). The DOTC is responsible for policy formulation, while the NTC is charged with policy implementation, sector supervision, license issuance and tariff regulation. While both DOTC and NTC are autonomous bodies, they come under the ultimate authority of the Department of Telecommunications.

Water and sanitation

The main water providers are:

- The National Water Resources Board (NWRB) which oversees, coordinates and integrates water resource development and management;
- The Metropolitan Waterworks and Sewerage System (MWSS), which supplies water and sewerage services in Metro Manila and the surrounding urban centers and rural areas.
- The Local Water Utilities Administration (LWUA), which supplies water and sewerage services in the large provincial urban communities.
- The Department of Public Works and Highways and the Department of Interior and Local Government, which provide water and sewerage services to provincial rural areas and small urban communities. DILG is responsible for overseeing the capacity building of the local government units.

The major problem related to water infrastructure in the Philippines is inadequate water supply coverage. In addition to the low water supply coverage, service is concentrated in the Manila metropolitan area only.

The government aims to bring the water supply coverage to 84 percent of the total population by the year 2000. Given the magnitude of the investment needed, the government recognizes the urgency to develop a framework to promote PPI in the water supply and sanitation sector.

As of end-1997, about $ 7 billion in BOT projects took place in water and waste, and more projects are being implemented (tables A8 and A9). The Philippines water sector made significant progress in 1997 with the

Table A8 National BOT Projects Awarded and Under Construction as of End 1997

Project Name	*Agency*	*Proponent*	*Scheme*	*Estimated project cost ($ millions)*
MWSS privatization	MWSS	Benpres Holding, Ayala Corp (USA, France, Philippines)	CAOM	7,000
Subic Water and Sewage	SBMA	BiWater/DMCI (UK, Philippines)	JV	120
Clark Water Supply and Sewerage	CDC	Kemayan/Ciriaco Corp (Malaysia, Philippines)	JV	55

Table A9 National BOT Projects with Unsolicited Proposal

Project Name	*Agency*	*Proponent*	*Scheme*	*Estimated project cost ($ millions)*
Mananga II Water Supply	MCWD	Johan Holding/G. Keng (Malaysia)	BT & BOT	160
Bulacan Bulk Central Water Supply I	LWUA	Penta Capital Investment Corp (Philippines)	BOT	50
Puerto Water Suppiy I Extension Project	PPCWD	Lurgi Bamag GMBH/CAMS Asia, Inc (Germany)	JV	24
Metro Manila Solid Waste	MMDA	Jancom Intl, Dev (Australia)/First Int. W-E Mgrs, Inc (Philippines)	BOT	270

Source: IBRD.

privatization of the Metropolitan Waterworks and Sewerage System in Manila (MWSS). The MWSS privatization took the form of vertically integrated water and sewerage operations under a 25-year concession agreement awarded to two concessionaires.

Annex Notes

1. With the onset of the economic crisis in 1997 and the upward spike in interest rates, five major groups with a combined work force of 107,000 employees and assets of 26.7 trillion won ($20.6 billion) quickly failed, unable to pay their debts. 18 of the largest 30 groups were at risk of bankruptcy. The major banks (with government encouragement) provided a series of emergency loans ($1.5 billion) to a number of major groups at risk which had not yet filed for bankruptcy. The problems of the largest groups quickly spread to small and medium enterprises (SMEs).

2. These were supported by SAL I and II. Key initiatives include the following:

- Tax Exemption and Reduction Act: provides tax breaks for restructuring of firms,
- Bank Act: increases the ceiling on bank ownership of other firms' equity from 10 percent to 15 percent, or higher subject to FSC approval;
- Corporation Tax Act: advances removal of deductibility of interest on excessive debt from 2002 to 2000;
- Foreign Direct Investment and Foreign Capital Inducement Act: permits takeovers of non-strategic companies by foreign investors without government approval and raises the foreign stock ownership ceiling (subsequently raised to 100 percent for non-strategic listed companies);
- Securities Exchange Act: liberalizes mergers and acquisition activity by increasing the portion of shares that can be acquired without board approval from 10 percent to 33 percent;
- Antitrust and Fair Trade Act: prohibits any new cross (debt) guarantees amongst and between chaebol affiliates and subsidiaries and eliminates all existing cross guarantees by 2000;
- Employment Insurance Act: temporarily reduces the minimum contribution period and increases the minimum benefit period; and
- Labor Standards Act: legalizes employee layoffs as a result of mergers and acquisition activity or to avoid financial distress.
- International Accounting Standards: Recently, the FSC has approved the adoption of international GAAP for accounting purposes.

3. The PBC is working in consultation with the Ministry of Finance and Economy (MOFE) and the relevant line Ministries.

4. Led by the Deputy Prime Minister.

5. To help offset the country's lack of significant natural reserves, the Korea Petroleum Development Corp., Korea Gas Corp., and the resource development division of Daewoo Corp. plan to construct a 3,125-mile natural-gas pipeline to transport gas from eastern Siberia to Korea. In the oil sector, Daen Han Oil Pipeline Co. (as of April 1998, 48.8 percent government owned, not including 3.9 percent held by Korea Petroleum Development Corp.) is building a $780m oil pipeline network throughout Korea. The GOK plans to divest its equity in the company by the year 2000.

6. The new investments would be used to upgrade and develop coal-fired plants in northern regions, hydro plants in the central provinces, and gas-fired plants in the south.

7. According to the government's own estimates, before the crisis three-fifths of approximately 5,800 state-owned enterprises (SOEs), were 'unprofitable' and the rest were experiencing difficulties, evident from declin-

ing profits and tax contributions. The SOEs' problems spilled over into the financial system and since the onset of the crisis Vietnam's state banks have carried a heavy burden of non-performing SOE loans.

8. In spite of the reforms, the authorities continued to favor a dominant role for SOEs pursuing the goal of a socialist-oriented, mixed economy operated on market principles. During 1997, the number of ad-hoc measures introduced to support state enterprises rose considerably. Steps back from commercial oriented lending, which ultimately led to impair the banking system, included the elimination of collateral requirements for SOEs when borrowing from a state-owned commercial bank; permission of lending to loss-making firms if a sound business plan were presented; the roll-over of outstanding credit to enterprises facing repayment difficulties.

9. The equitization scheme, as the government calls it, is neither a complete privatization scheme nor a full step towards a market economy; rather, through equitization, the government aimed to reduce SOEs reliance on the State while allowing the State to maintain some control over enterprises.

10. The FIL has been changed three times since it was enacted in 1987. The most recent change, in late 1996, maintains that foreign investment is crucial for the development of certain regions and industrial sectors. Yet, the legal guidelines underlying FIL and its interpretation remain unclear to foreign companies.

11. Responsibility for the equitization program was to be shared by the Ministry of Finance and the State Bank.

12. State enterprises still enjoy privileged legal status; receive explicit and implicit preferences in access to credit, land use rights, fiscal and regulatory treatment; and enjoy targeted trade protection.

13. Article 10 of Decree 62 contemplates that GOV may nominate a GOV body to guarantee the performance of the financial obligations of Vietnamese enterprises under BOT contracts. However, there are a number of concerns about whether or not some GOV bodies could honor an obligation to pay in foreign.

14. Electricity production and consumption had grown, in GWh terms, by 79.3 percent and 93.9 percent respectively over the period 1993 through 1997.

15. An IPP at Hiep Phuoc sells power to EVN and to businesses in the Saigon-South industrial zone. In addition, some companies, households, and rural communities generate their own power.

16. MPI granted an investment license in September 1997; EVN and the project company signed the PPA in November 1997.

17. The Law was passed in 1993 and a follow-up implementation decree was passed in December 1996.

18. The status of this project is uncertain and the private financing is being sought domestically.

19. In the mid-1990s, the Southern Airport Authority solicited qualification statements for a $200 million Build-Transfer, turn-key expansion terminal for Tan Son Nhat Airport (Ho Chi Minh City), but that bidding process was eventually suspended. There is no indication that the project will be rejuvenated.

20. The Law was passed in 1993 and a follow-up implementation decree was passed in December 1996.

21. BCCs are essentially Build-Transfer (BT) schemes. Joint ventures are permitted in the manufacturing of telecommunications equipment, and several such companies have been established.

22. Before the crisis, in order to keep up with rising demand for telephone connections, which was rising about 35 percent annually, VNPT entered into revenue sharing agreements with foreign telecoms (Telstra of Australia, NTT of Japan, Cable & Wireless of UK, France Telecom).
23. The number of mobile phone users has jumped from just 200 in 1993 to over 35,000 in 1996.
24. The $30 million project has a designed capacity of 100 000 cubic meters a day; the contractual agreement is to supply water to Ho Chi Minh City Water Supply Company (a provincial level SOE) for 20 years.
25. The central bank issued $23 billion in forward foreign exchange contracts at a time when reserves amounted to $25 billion.
26. The underlying adjustment program was aimed at restoring confidence, reducing the current account deficit, reconstituting foreign exchange reserves, and limiting the rise in inflation. Upon approval of the program, Thailand drew$1.2 billion from the IMF and received a further $4 billion from bilateral and multilateral sources.
27. In particular the privatization of EGAT through unbundling met stiff resistance from the employees union for fears of major job losses.
28. The depreciation of the baht badly damaged the corporate sector, with large debt obligations denominated in foreign exchange, much of it unhedged.
29. The CDRC is chaired by the Bank of Thailand Governor and include representatives from the Thai Bankers' Association, Foreign Bankers' Association, Federation of Thai Industries, Chamber of Commerce, and Association of Finance Companies.
30. The framework requires that a lead institution, and a designated individual within the lead institution, be appointed early in the restructuring process to actively manage and coordinate the restructuring according to defined objectives and deadlines.
31. These measures comprise:(a) additional Bank of Thailand interventions to accelerate consolidation of banks and finance companies; (b) private investment participation in the sale of two financial companies; (c) a framework for the voluntarily removing of bad assets from balance sheets.
32. The Law had met with serious opposition from employee groups, and eventually it was passed because a number of compromises were made; the provisions include a requirement that a public hearing take place prior to corporatization and employees be represented on the committee managing the preparatory process towards corporatization.
33. In 1998, these enterprises had total revenues of 884.2 billion baht ($ 24 billion) and employed almost 340,000 people, just over 1 percent of the labor force. Revenues of state enterprises accounted for a significant portion of economic activity—approximately 14 percent of 1997 GNP.
34. Thailand privatization efforts date back to 1961.
35. The framework included registering/corporatizing companies, reducing government share in selected companies to 70 percent or less, and, as a final step, reducing government share to less than 50 percent so as to end companies' status as SOEs.
36. Among the proposals, there is the review of some existing laws, such as the Competition Laws B.E. 2532 (to protect new entrants and other enterprises from abuse of monopoly power); the NEC 281 (foreigners are not allowed to hold more than one-half of the total shares in privatized SOEs, with the exception of infrastructure projects approved

by the Board of Investment); Intellectual Property Laws; Private Sector Participation Act B.E. 2535 (conflicts with private offerings to strategic partners both in the objectives and process); Company Law The Public Company Act B.E. 2535 ("Golden Shares" are not envisaged under Thai Law); Securities Laws (acquisition or holding of 25 percent of shares in a public company is deemed a "take over" and a tender offer is required).

37. EGAT was made solely responsible for generation and transmission under the 1968 EGAT Act. EGAT sells power to MEA and PEA. The EGAT act was amended on 1 March 1992 to allow private electricity generators to produce and sell power.

38. At present EGAT accounts for 85.3 percent of total generation, with 16,142MW of installed capacity, 46 percent of which is gas fired, 6 percent oil fired, 18 percent coal fired, 19 percent hydro, and 10 percent alternative sources.

39. The SPP program is more rapid requiring only bilateral negotiation between private producers and EGAT. The IPPs, on the other hand, will be awarded only after a public tender procedure.

40. The phase II bidding round under the IPP program has been put off until the 2002/2003 period. As a response to the recession, EGAT has either closed or reduced capacity in the older thermal plants, including the Mae Moh plant. Additionally, oil-fired plants are being converted into natural gas plants.

41. Thus far, EGAT has signed contracts with seven IPPs to supply 5878 MW over 25 years.

42. EGCO was spun off of EGAT and is developing plants on its own. The privatization of EGAT's 4600 MW Ratchaburi plant will begin in third quarter 1999 whereby Ratchaburi will be transformed into Ratchaburi Holding Co. EGAT will hold 33 percent while 25 percent of shares will be listed. The plant will be re-named as Power-Gen 1. Other EGAT plants as they are privatized will be called Power Gen 2, Power Gen 3 and the process is to be completed by 2001.

43. There is no electricity pooling system in Thailand.

44. TOT employees are getting a 4 percent share in the enterprise in return for their support of the privatization initiative.

45. Two private sector participation options exist for MWA. The first option consists in the horizontal separation, and creation of East Bangkok Co. and West Bangkok Co. Under this option, each company will be responsible for the range of activities, from bulk water supply to distribution, billing and metering. The second option involves the corporatization of MWA to form MWA Co., which in turn will take on a strategic partner to undertake operation and management of the utility through a management contract.

46. In early 1997, the three largest privatized companies on the KLSE, Telekom Malaysia, Tenaga (electricity utility), and Petronas Gas together made up for 10 percent of total market capitalization.

47. UEM purchased a controlling share of Renong without making a general offer to all Renong shareholders, as required under Securities Commission rules. The deal was ultimately approved by the Foreign Investment Committee (FIC), which reserves the right to approve all takeovers and mergers.

48. Danaharta was enabled to appoint special independent administrators to develop workout proposals with borrowers.

49. The CDRC process is voluntary, along the lines of the "London Rules" approach. The goal is to reduce the legal costs as well as time associated with restructuring under court protection and supervision.

50. Banks have been forced to recognize all non-performing loans and to sell non-performing loans in excess of 10 percent of total loans to Danaharta typically at a 30-50 percent discount over face value. Danaharta buys the non-performing loans by issuing zero coupon bonds guaranteed by the government.

51. I.e. guarantees on the minimum revenue or traffic volume in transportation projects, and "take-or-pay" contracts with minimum revenue levels in power generation projects.

52. The EPF, which entered the market in 1993, has been central to the development of several IPPs and other big projects such as the Light Rail Transit, and the KL International Airport. Islamic financing is another popular mechanism of funding for major projects. Islamic financing was used in the privatization of Petronas Gas and the KL International Airport.

53. From International Private Power Quarterly, 4th Quarter 1998.

54. This is expected to the first of a series of generation asset sales by Tenaga to IPPs. Tenaga also plans to sell off its 1,500MW Kapar power plant.

55. The yen debt carries a significantly lower interest rate. However having the yen weakened recently, Tenaga also takes on the risk of possible yen appreciation.

56. Telekom Malaysia owns 98 percent of the 4.8 million fixed lines in Malaysia. Recently TM signed interconnection agreements with three providers: Binariang, DiGi Telecom, and Celcom. TM is still under no immediate threat to loose its dominant market position, as it will take some time before equal access, which kicked in in Jan 1999, starts to erode TM's market share.

57. With the recent sale of a stake to British Telecom, Binariang has improved its financial situation and continues to have solid growth levels; it poses the largest threat to Telekom Malaysia's market dominance.

58. Formerly Mutiara; Mutiara improved its strength forming a joint venture with Swisscom.

59. Equal access is currently available only on the fixed-line network, but it will be broadened to include the cellular market.

60. In 1995 the global initial public offering of Telkom (the largest Asian equity offering completed to that date) was undertaken. The climate for privatization was enhanced by strong economic growth and a new "superteam" of government officials committed to expanding private participation in the economy. In 1997 companies slated for privatization included Jasa Marga, the principle toll-road developer/operator, and Perusahaan Listrik Negara (PLN), the national electric utility.

61. Also in September 1997, the 49 percent foreign ownership restriction on publicly-listed shares was removed, thereby reducing the incentive for Indonesian firms to list overseas.

62. Talks with a steering committee of private bank creditors began in February 1998, followed by meetings in April (New York), May (Tokyo), and June (Frankfurt). A private external debt team set up by the authorities prepared and coordinated the negotiations with assistance from outside consultants and in collaboration with the Fund, the World Bank and the Asian Development Bank.

63. The "Jakarta Initiative" is an adaptation of the "London Rules" to the Indonesian conditions for the voluntary restructuring of external obligations of the corporate sector, the restructuring of interbank debt, as well as the establishment of a trade facility to help restore normal trade financing. The

agreement offered a government exchange guarantee to creditors and debtors who agreed to restructure their debt on the basis of certain minimum conditions (a three-year grace period and an eight-year maturity).

64. The purpose was to shift the associated foreign exchange risk of existing private corporate debts to the Indonesian government. INDRA would not take on commercial risk but would ensure foreign payments to the creditor on the basis of rupiah payments received from the debtor, the latter being determined based on the most appreciated real exchange rate during a specified period.

65. A special Commercial Court was inaugurated August 21 to deal exclusively with bankruptcy cases that emerge in the corporate restructuring process.

66. In September 1998, an agreement was reached on the rescheduling or refinancing of Indonesia's bilateral external debt to official creditors.

67. The six are: PT Semen Gresik (cement), PT Indosat (telcom), PT Aneka Tambang (mining), PT Pelindo II (seaport), PT Angkasa Pura (airport), PTPN IV (plantation).

68. The MoSE has not publicly stated what its revenue targets are.

69. PT PLN was established in 1961 as an operating division of the Ministry of Energy and acquired a separate legal status during 1965. In 1972 PLN became a Public Utility Company taking on also the formal role as the Electric Energy Authority for Indonesia. In 1994 PLN was transformed in a full corporate entity with limited liability and adopted the current name, Perusahaan Perseroan (Persero) PT Perusahaan Listrik Negara (PT PLN).

70. This plan assumed 4,960 MW of new capacity was to be contributed by the IPPs in the period to March 1999 and a further 3,845 MW would be commissioned during the course of the 7th Plan.

71. Construction of the power plant started in 1995 and it is expected to start delivery of electricity during the middle of 1999. Political risk insurance was offered by OPIC. The US EXIM provided the export credit financing for equipment purchases. The PPA price agreed for the project was to start off at $ 0.0856 cents per kWh and reduce to $ 0.0554 per kWh for the final years of the 30 year concession period. The project is expected to be completed after the re-negotiation of the PPA contract terms, although electricity sales might be postponed until year 2000.

72. The total installed generation capacity was 19,191 MW.

73. The PPA contracts signed include provisions for the payment of power in US dollars and all projects were awarded on a Build-Operate-Own basis with terms ranging from 10 to 30 years. The majority of the new generation capacity, for which PPA contracts were signed, were for coal-fired plants. The PPAs were supported with the Goverment's letter of "comfort" which was acceptable to the bond markets as a "full faith and credit" support. Regarding procurement, apart from the Irian Jaya project, which was competitively awarded, all IPPs were procured on a negotiated basis (with Paiton being the "template agreement").

74. The short term plans called also for a 800 MW nuclear BOT power facility to be in operation by 2003; a consortium led by Westinghouse secured agreement in principle to build this plant at Mount Muria; this project has been postponed indefinitely.

75. In early 1998, the rupiah depreciation reduced PLN's retail tariff from 7 cent per kwh to 2 cents per kWh. Retail tariffs would have had to be raised over 200 percent in

order for PLN to cover project costs. A new tariff rate basis was introduced in May 1998 to replace the previous standard for electricity tariffs implemented five years earlier in November 1994.

76. The restructuring program addresses six important areas: "1. industry restructuring, 2. introduction of competition, 3. tariff setting, cost recovery and subsidies, 4. rationalization and expansion of private participation," 5. redefine government's role, and 6. strengthen the regulatory and legal frameworks. The program is to be undertaken over a 5 year period.

77. The objective is to meet peak demand through a power pooling system; basic and 'medium' demand will be satisfied through PPAs signed with PLN generation units or IPPs.

78. PSCs were implemented in 1966 to encourage foreign investment in the oil industry; foreign firms can finance exploration, development, and production costs in exchange for being able to retain a share of output. PSCs usually have a term of 30 years.

79. JOAs are an abbreviated version of PSCs which permit the development of fields that have already been partially explored.

80. Jasa Marga has partnerships with 40 private companies to develop toll roads; there are plans for an IPO to float 25-30 percent of its shares in the near-term.

81. Under Law No. 3 of 1989 services have been classified as either basic or non-basic. Services that involve the exchange of information through a channel established in a network between caller and receiver without any processing or modification of the information are considered basic. Non-basic services are services that use equipment or facilities to process or modify information.

Indonesia Classification of Telecommunications Services, 1998

Basic services	*Non-basic services*
Local telephony	Electronic mail
Domestic long distance telephony	Store ad forward facsimile
Fixed wireless	Abbreviated dialing
Mobile cellular	Multi-call address
Leased lines	Electronic data interchange
Packet switched data	Paging
Telex and telegraph	Video conferencing
Vsat	
Telecast	

Source: Telecom, Pyramid Research.

Private companies are allowed to offer basic telecoms services, but only in co-operation with either Telkom or Indosat and pursuant to a license from the MTPT. The law allows such co-operation through joint ventures in which either Telkom or Indosat has a direct or indirect equity participation, joint operating schemes (KSOs), and management contracts.

82. As of November 30, 1998, 24.2 percent of Telcom's common stock was held by the public and the rest held by the government. Telcom accounts for approximately 14 percent of the total capitalization of the Jakarta Stock Exchange. Telcom's common stock is listed on the Jakarta, Surabaya, London and New York Stock Exchanges. The listings on the London and New York Stock Exchanges are in the form of American Depository Shares (ADSs).

83. Prices for the imported phones have more than doubled from their pre-crisis levels.

84. This is explained in part by relatively strong pre-crisis capital positions and portfolio quality among Philippine banks, a relatively strong banking regulatory and supervisory framework, and low debt-equity ratios by regional standards in the corporate

sector, as well as strong export growth and remittance flows.

85. In general, companies in the Philippine have weathered the regional financial crisis relatively well. Unlike corporations in other East Asian countries, most corporations in the Philippines entered the crisis period with reasonable levels of total indebtedness and manageable exposures to foreign currency debt. Furthermore, export sales continued to grow and domestic sales related to private consumption remained robust.

86. Despite the increase in capitalization, turnover and investor interest, the number of listed companies remains relatively small and the 10 largest index stocks account for a relatively high 35 percent of market capitalization. However, in recent months the Philippine Stock Exchange index has almost doubled.

87. By the first quarter of 1998, the Philippines developed 87 ecozones, 61 of which by private developers. Local governments are now looking for private sector joint venture partners, since ecozones can be privately constructed and managed, reducing the financing burden for the government.

88. Such examples include: (i) allowances for accelerated depreciation and loss carryovers; (ii) general fiscal package available to foreign investors; and (iii) promotion schemes for attracting the regional headquarters of multinational companies.

89. They serve small towns and villages and their performance is judged to be from acceptable by the poor. There are only 40 cooperatives and IODs that have achieved losses below 15 percent.

90. The first BOT project, developed by Hopewell Holdings, was a 210 MW single-cycle gas turbine power plant at Navotas. The government bore all foreign exchange risks and all NPC's risks were covered by a central government guarantee.

91. The Southern Tagolog Arterial Road (through a BOO scheme) has reached implementation, while joint venture for selected projects (Metro Manila Skyway, Manila-Cavite Expressway and North Rail) have been formed and detailed preparation is underway.

92. The private sector rehabilitates, operates and maintains the existing State owned facility; the government retains ownership upon expiration of the contract.

93. A 17.8 km elevated light rail line which will travel along one of the most congested routes in the city.

94. In 1997 the government approved an unsolicited bid from local developers to build on a BOT basis a new passenger terminal at Naia. According to BOT law, the government then allowed external bidders to submit independent offers. Although a competitive bid was approved, the project has yet to come to financial closure.

95. Each cellular company was required to build about 400,000 lines by mid 1998 in its service area whereas each IGF operator was required to build about 300,000 lines by mid 1998.

96. For the area of Luzon, there is a third licensee.

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