Frontiers of the Public-Private Interface in East Asia's Infrastructure

Report on a High-Level Conference held in Jakarta, Indonesia, September 2–4, 1996
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This report was prepared by Harinder Kohli, Ashoka Mody, and Michael Walton of the World Bank and edited by Lauren Pitto. It highlights the main findings and conclusions of a high-level conference organized by the East Asia and Pacific Region and the Economic Development Institute of the World Bank and co-hosted by the Government of Indonesia in Jakarta. The conference was opened by H. E. President Soeharto and attended by ministers and senior officials from 16 countries as well as senior private sector executives from within and outside the region. The full proceedings of the conference are being prepared by the Government of Indonesia.
Overview

INTRODUCTION: FINDING COMMON GROUND

Governments and the private sector agree that the progress of private infrastructure in East Asia has been unacceptably slow. The region's total infrastructure needs for the next decade are estimated by the World Bank at $1.2 trillion to $1.5 trillion—needs which can only be met with the help of private initiative and finance. Yet despite significant private activity in telecommunications and power generation and, to a lesser extent, in toll roads, the share of private capital at risk in infrastructure investment has been less than 10 percent in the past few years. The conference sought to identify common ground that would enable substantial private investment while addressing public concerns about due process in the award of contracts and the achievement of broader societal goals.

DELIBERATIONS

While governments initially looked to private involvement for primarily fiscal reasons, conference participants emphasized the importance of harnessing private sector incentives to deliver high-quality services at low cost to sustain growth and competitiveness and to improve the quality of life in the region. Another consensus, surprising yet widely held, was that financial resources—even the availability of debt financing—are not the real cause of the slow progress to date. Rather, the problem lies in the shortage of good, bankable projects. Infrastructure investments have the potential for high economic returns, but bankable projects are scarce: transaction costs and risks (real and perceived) are high and prices are often below economic values, leading to a sizable gap between the required, risk-adjusted rate of return and the actual expected returns to private investors (the "IRR gap"). Private representatives emphasized that transaction costs and risks are high because of slow, non-transparent bidding and negotiation processes and uncertainty over the longer-term policy framework for provision of services. While recognizing the legitimate requirements of private investors, government representatives emphasized the importance of the social and political context for private infrastructure provision: delivering quality services at fair prices, reaching the poor, and improving the environment.

CONCLUSIONS

The private-sector and government representatives agreed that moving forward depends on strong, high-level government commitment to increasing the role of the private sector in infrastructure development. They further concluded that achieving this goal requires a clear policy and institutional framework to ensure the efficient allocation of resources across sectors and projects, timely and credible contracting, and cost effective services responsive to the needs of consumers.

The participants also established that, despite slow overall progress, a wide variety of successful approaches and solutions is fast evolving within East Asia (Indonesia, the Philippines) and elsewhere (Australia, Chile). They emphasized that experience is recent, the problems are complex, the best practice will evolve over time, and each country is likely to follow its own route toward private involvement (with sectoral variations). But all agreed that the case studies presented offered valuable lessons as to what works:

• The core elements of a framework for private infrastructure delivery are: (a) sectoral pricing reforms; (b) introduction of competition among service providers and, where appropriate and feasible, direct competition by suppliers for final consumers, allowing feedback on consumer preferences and direct assumption of commercial risks; (c) transparent and competitive contracting processes; (d) credible legal and regulatory structures; and (e) clear definition and assignment of risks.

• Societal concerns about reaching the poor, equitable pricing, the environment, and resettlement need to be dealt with explicitly as an integral part of project selection, design and operations.

• Successful countries have been quick to seize opportunities and build on initial successes while learning from failures, often focusing on private-sector involvement in one sector at a time.

• New and more sophisticated administrative capabilities are needed to deal with the complex issues involved in maintaining a balance between public and private interests in infrastructure provision. These enhanced capabilities will also ensure streamlined approval and regulatory processes and coordination of the policies and actions of various governmental ministries and agencies, including those at the sub-national level.

• The domestic debt market must be developed in parallel with the policy and transaction framework. Infrastructure projects need long-term domestic debt instruments and provide an opportunity to develop them.
• **Water supply, sanitation, and urban transport** are the "next frontier". Early breakthroughs in these sectors will help reach unserved populations (generally among the poorest urban dwellers), tackle rising urban congestion problems, and improve the urban environment.

• **Information sharing** among governments and between governments and the private sector is extremely valuable. The public-private dialogue should continue, non-binding policy and investment strategies should be promoted as best-practice benchmarks for private sector participation, and lessons of experience should be shared regularly. Multilateral fora such as APEC can provide an opportunity for such exchanges.

Participants also felt that the World Bank and other multilateral institutions have an important role to play in facilitating public-private dialogue at both the country and regional levels through: (a) sharing information and lessons of experience from within and outside the region; (b) helping countries develop frameworks for private involvement; (c) assisting in the development of new financing mechanisms, including development of domestic bond markets; (d) formulating standards for bidding and contracting documents; and (e) catalyzing private finance through guarantees.
Introduction: Finding common ground

The conference was designed to address the widespread sense of disappointing progress to date in attracting the private sector to infrastructure development in East Asia despite broad government endorsement from most countries and huge interest from private sector developers and financiers (including substantial upfront spending by developers). Both governments and private companies expressed frustration at the mismatch between expectations, the large numbers of memoranda of understanding, and the small number of operational projects.

Yet the discussions revealed considerable optimism about the prospects of private initiative in infrastructure, an optimism largely stemming from several ongoing experiments and the continuing ability of governments and the private sector to seek common ground in small but significant steps. The sharing of these experiments at the conference—between ministers from different countries and between ministers and senior private sector representatives—led to a deeper appreciation of the common features of problems faced by countries.

Why involve the private sector? Many countries, from Australia to China to the Philippines, initially turned to private sector finance to overcome tight fiscal constraints and public debt limits. But the involvement of the private sector is increasingly being driven by the objective of getting better services at a lower price. Even Singapore—which has no fiscal constraint on infrastructure finance, having run a large fiscal surplus for many years—has turned to private involvement to (a) effectively harness the human and institutional resources of private companies for project design and development, which are necessary to rapidly expand the stock of infrastructure, and (b) improve the efficiency of the services it needs to sustain growth in a high-wage, high-productivity, high-technology economy.

THE NEED FOR BANKABLE PROJECTS

There is a widespread perception that there is a financing constraint to infrastructure finance in East Asia. The first major result of the conference was the agreement by the public and private sectors that the problem today is not financing, but rather the lack of good, bankable projects. There is ample international equity, and while there is less debt looking for projects in the region, there is no shortage of debt finance for sound projects at this stage. In most of the low- and middle-income countries there is still relatively little domestic equity and even less long-term domestic debt. Tackling this situation is important for the future, especially since infrastructure projects are not direct foreign exchange earners. But the availability of international resources and the sound macroeconomic fundamentals of most East Asian countries will prevent this issue from being a constraint on finance in the next few years.

Why is there an absence of good projects? The shortage of infrastructure in economies with rapidly growing incomes should imply high, even very high, economic returns for new projects. The experiences shared revealed two reasons. First, in some sectors (especially water but also electric power) and countries there is uneconomic pricing: investments do not provide the financial returns necessary to attract the private sector. Second, the presence of significant risk adds to the "IRR gap"—the large difference between the risk-adjusted rate of return that private developers and financiers demand and what is judged politically reasonable by governments. The risks flow from the substantial uncertainties that surround the development, construction and operating phases of infrastructure projects, with significant effects on both project costs and future cash flows of projects with intrinsically long payback periods. These risks raise the required return, since investors need a premium to compensate for higher risks, and they discourage serious developers from developing the pipeline of potentially good projects. Both of these effects reduce the stock of financeable projects.

Considerable attention has been paid to risk unbundling and assignment (of commercial risks to the private sector, and policy and sovereign risks to the government), but fundamental risk reduction is at the heart of the solution. Both government and private sector representatives emphasized that reducing risks is not a technocratic problem. The social and political context of infrastructure projects is central to both sides of the public-private interface. It is essential to governments because of the political necessity of assuring the supply of fairly-priced services and avoiding "excessive" profits (or sweet deals) at the expense of the people. This is a hotly and publicly debated issue in countries such as Australia, India, the Philippines and the United Kingdom, but one that applies to all countries. Equally important is the government's mandate to meet important societal goals: to provide basic services to the poor (sometimes with subsidies), to tackle environmental concerns (in the case of a gas pipeline to Chile or of hydropower development in Lao PDR, for example), and to humanely manage resettlement of households displaced by infrastructure development. Many countries also want to foster domestic industry, which
has influenced policy toward private involvement in infrastructure in Australia and Malaysia.

The social and political context is also essential for the private sector, because of its influence on overall perceived risks, and the potentially significant influence on project risks and costs of concerns (in both the host and home countries, in the case of international investors) about the environment and resettlement.

BUILDING ON EXPERIENCE

While the discussions revealed that the issue of private involvement in infrastructure is much more complex than initially thought, the second major conclusion of the conference was that there are solutions that are working in a wide variety of social and political contexts, both within and outside East Asia. This emerging stock of experience confirms a number of common principles for success: setting sectoral and project priorities; ensuring economic pricing; relying as much as possible on competition in all phases of the development and delivery process to achieve quality at reasonable prices; laying the rules for contracting to ensure timely and efficient completion of bidding; and facing social issues explicitly and squarely from the beginning, often with the participation of civil society. These features—the ingredients of a sound framework for private involvement—can sharply reduce risks, powerfully affect the incentives for preparation and delivery of projects, and help ensure rapid, high-quality, and low-cost expansion of infrastructure services through commercially viable projects.

In the remainder of this synthesis, the current state of play in private infrastructure in the region is outlined, followed by the major lessons that emerged from the conference in terms of what works in the design of a framework for private involvement, in issues of financing of infrastructure and in the continuing role of governments.

Private involvement in East Asia’s infrastructure

THE CURRENT STATUS

The World Bank estimates the region’s infrastructure investment requirements for the next decade at $1.2 trillion to $1.5 trillion to reach growth, competitiveness and quality of life goals (see Box 1), but the conference highlighted that private capital at risk now finances less than 10 percent of new infrastructure. Although much variation exists between East Asian countries, all of them provide considerable government support, even to “private” projects.

How much private involvement is there in infrastructure in East Asia? While data are weak, one estimate based on publicly-reported information suggests that some 60 or 70 privately-financed projects are in operation, mainly in China, the Philippines and Malaysia, with a total value of $26 billion: $13 billion in power, $8 billion in transport, and $5 billion in telecommunications. A further $17 bil-

BOX 1

Why infrastructure services are critical to East Asia

A continued push for the development of infrastructure services is crucial to East Asia’s development as it enters the 21st century.

- **Growth.** Demand for modern infrastructure rises at least as fast as overall growth rates—and for many sectors significantly faster. Expanding infrastructure is essential for sustaining future rapid growth. For example, China’s transport infrastructure is becoming increasingly congested, due to unusually high capacity utilization rates, and economic growth will be choked off if the investment rate is not lifted. The Korean government estimates that infrastructure shortages have reduced its GDP by some 16 percent in the mid-1990s.

- **Competitiveness.** Quality telecommunications, transport and power services are necessary in poorer and richer economies alike to sustain growth and maintain competitiveness in an increasingly integrated world. In Indonesia, industrial firms that use captive power pay more than double the economic cost of power from the grid.

- **Quality of life.** Inadequate infrastructure services mean a lower quality of life, despite rapidly rising incomes—especially in urban areas. Household access to services is still low for the income levels in many countries. Poorer households who have to buy water from vendors pay some 60 times the price of piped water in Bandung, Indonesia, and almost 20 times the price in Manila and Ho Chi Minh City. Congestion in cities from Bangkok to Shanghai leads to hours of daily commuting in air quality conditions way below WHO standards.

- **Safety.** The need for infrastructure is also critical for safety, especially for transport. In Asia, the number of road accidents and deaths due to traffic collisions is on the increase, mainly due to rapid expansion in the number of vehicles, as new projects and expanded networks are completed.

- **Environment.** Environmental concerns are also important in infrastructure development. The need to address climate change is becoming increasingly recognized in the region, and the role of infrastructure in achieving this objective is crucial. This includes the need to reduce greenhouse gas emissions from energy use, as well as the need to address other environmental concerns such as air and water pollution, and the need to ensure that infrastructure projects are designed and constructed in an environmentally sustainable manner.

- **Social issues.** Social issues are also important in infrastructure development. The need to address social equity and sustainability is becoming increasingly recognized in the region, and the role of infrastructure in achieving this objective is crucial. This includes the need to ensure that infrastructure projects are designed and constructed in a socially sustainable manner, and that they are accessible to all segments of society, including the poor and marginalized communities.

- **Financial sustainability.** Finally, financial sustainability is also important in infrastructure development. The need to ensure that infrastructure projects are designed and constructed in a financially sustainable manner is becoming increasingly recognized in the region, and the role of infrastructure in achieving this objective is crucial. This includes the need to ensure that infrastructure projects are designed and constructed in a financially sustainable manner, and that they are able to generate revenue that is sufficient to cover their costs and provide a reasonable return on investment.

The emerging stock of experience confirms a number of common principles for success: setting sectoral and project priorities; ensuring economic pricing; relying as much as possible on competition in all phases of the development and delivery process to achieve quality at reasonable prices; laying the rules for contracting to ensure timely and efficient completion of bidding; and facing social issues explicitly and squarely from the beginning, often with the participation of civil society. These features—the ingredients of a sound framework for private involvement—can sharply reduce risks, powerfully affect the incentives for preparation and delivery of projects, and help ensure rapid, high-quality, and low-cost expansion of infrastructure services through commercially viable projects.
lion in private capital is accounted for by privatization, mainly of the telecommunication utilities in Korea, Singapore, and Indonesia. These numbers are large in absolute terms, but are small relative to the stock of infrastructure, probably representing well under 5 percent of the total value of infrastructure in East Asia.

A similar picture comes from information on project flow. Compared with estimated annual infrastructure investment of some $80 billion in East Asia in the mid-1990s, the value of major projects that were financially closed in 1995 was only $5 billion, of which $3 billion went to just two major power projects, Paiton in Indonesia and Suai in the Philippines. The private sector is now directly participating in less than 10 percent of new investment. Malaysia's partial privatization of telecommunication and electricity assets combined with significant private involvement in toll roads and water makes it the leader in harnessing private investment. However, since most projects also involve some form of government support, it is likely that private capital at risk provides only about a quarter of Malaysia's new infrastructure investment.

By contrast, there is a much larger volume of projects under consideration—projects worth some $120 billion have been reported as being past the contract award stage. But these are at highly varying stages of development and many may unravel before financial closing. There is a huge mismatch between the level of interest and activity and the number of projects that have reached financial closure: there is continued interest in power generation, but little activity in power transmission or distribution; there are a limited number of toll roads relative to high initial expectations; and, with the exception of Malaysia and Macao, water projects are only in the early stages of development.

FUTURE PROSPECTS

Is this slow progress a sign of intrinsic problems with private involvement in infrastructure? Conference discussions and evidence presented by leaders in private involvement suggest not. In Malaysia, over half of new investment in infrastructure is expected to come from the private sector. In Chile, the telecommunications and energy sectors are now virtually fully private, there is rising private involvement in transport, and a major privatization of water is planned. Privatized sectors are experiencing rapid investment, face no financing constraints, and receive no direct or implicit support from the public sector. Chile has grown at 7 percent per year for a decade and, like most East Asian economies, faces a rapidly-expanding demand for infrastructure services. Of a total projected infrastructure investment of $18 billion over the next six years, some $13 billion—72 percent—is projected to come from the private sector. Korea has historically had very little private involvement in infrastructure, but has recently raised its target for private finance of its infrastructure requirements by 2001-02 to 40 percent of total spending, up from the original target of 10 percent. The experiences of Malaysia, Hong Kong, and Chile—and similar results from the United Kingdom and some Australian states—suggest large shares for the private sector are feasible.

The scale of private sector involvement in infrastructure will depend on societal preferences and also on the institutional and policy conditions of different societies. Realistically, major segments of infrastructure investment, such as feeder roads, will continue to be publicly financed. In most countries in East Asia, it is likely that well over half—up to 80 or 90 percent in some cases—of total spending will be in the public domain in the next decade. Traditional concerns about improving the efficiency of public sector investment programs and infrastructure operation and maintenance will continue to be important, not least because they are more likely to involve infrastructure services for relatively distant areas and people.

COUNTRY SUMMARIES

The major East Asian economies can be roughly categorized as follows:

Indochina
In Vietnam, Laos and Cambodia, the institutional framework for private involvement is limited. With the introduction of a basic framework for BOTs there is likely to be scope for power generation projects and port and terminal projects in Vietnam. The Nam Theun dam in Lao PDR, if it proceeds, is huge in relation to the size of the economy and would be a special enclave project.

China
While the overall framework for private involvement is still being developed, there is already a great deal of activity, mainly at the provincial level, in power generation, toll roads, and bridges. However, most of these projects are joint ventures and apart from a few pilot projects, few purely private projects have been completed. There is potential for a significant acceleration of private involvement, including in joint venture activities, depending on sector-wide reforms in power and telecommunications. There are also very large needs for transport to sustain growth in the coastal areas and integrate slower-growing inland provinces into the national growth process: these are only likely to be achievable with large-scale private involvement in commercially viable
projects. China's unusually tight fiscal position makes private involvement urgent on public finance grounds, and high private savings and strong foreign direct investment (FDI) inflows clearly show that the constraint is not one of availability of financial resources.

**The Philippines, Indonesia, and Thailand**
Each of these is at a transitional stage, having had substantial private involvement in different sectors—the Philippines in power, Indonesia in toll roads, Thailand in transport—driven largely by individual transactions. But moving to the next stage and reaping real efficiency gains will depend on the development of a national and sectoral framework for private involvement; early implementation of such a framework is in progress in the power sector in all three countries and in the Indonesian telecommunications sector. There is also a need to strengthen public sector capabilities for managing private involvement outside the strongly competitive sectors.

**Malaysia**
Malaysia is a clear leader in terms of the proportion of private involvement in infrastructure and the scale of privatization, but, in contrast to Chile, it has pursued a course with much greater state management of the process. This is seen in its provision of financial support and in its preference for negotiation in contracting, with a strong preference for national developers and contractors.

**Korea and Singapore**
Both Korea and Singapore have had some of the most effective international records of public provision of infrastructure. Singapore is now moving sharply, via privatization and new projects, into greater private involvement for efficiency reasons. Korea is planning to accelerate in this direction on both efficiency and public finance grounds. These countries have the public-sector capabilities for sophisticated management of competitive contracting processes and regulation of monopolistic sectors.

**The policy and institutional framework**
A recurrent theme of the conference was that a clear framework for private involvement could simultaneously tackle the interrelated objectives of:

- reducing the risk factors and pricing distortions that are central causes of the weak pipeline of bankable projects;
- ensuring that private providers deliver high quality services efficiently and at reasonable cost;
- ensuring projects are approved efficiently, fairly and in a timely fashion; and
- dealing with important societal concerns about the environment, resettlement, and provision of basic services to the poor.

**INITIAL CONSIDERATIONS**
Not all elements of the framework need be in place before private entry commences. Indeed, many conference participants emphasized that there was no magic formula, and most countries have been proceeding in an evolutionary, learning-by-doing fashion. However, policy instability and a lack of strategic commitment can substantially raise perceived risks and required returns. Sometimes this will mean striking a balance between efficiency or other objectives and the need to ensure that commitments to the private sector are maintained when the rules of the game are changed, as in the grandfathering of a guarantee to a major power project in Victoria, Australia despite deeper sectoral reforms.

While a whole range of institutional and policy approaches are at work in the region, successful experiences share important common principles: clear rules, transparent processes, competition wherever possible, and explicit, upfront management of societal concerns. Government representatives also underscored the continuing—indeed increasing—importance of sophisticated public administration capabilities.

In laying out the common elements of the framework, two distinctions were emphasized (see Box 2). First, there are the differing phases of an infrastructure project. Private sector representatives expressed great concern over risks in the development phase. In this phase, the contracting process, delays in grant of permits, and management of environmental and resettlement risks are crucial. There was also concern about certain elements of the operational phase, such as changes in contract agreements (including early termination of contract), inability to obtain payment for services rendered, and the inability to convert domestic currency into foreign currency. Also, projects in water and transport may face direct market risk.

Second, there are important differences between activities that are potentially competitive and those that are intrinsically monopolistic. The latter will require special measures to prevent the granting of favors to potential monopolists, limit the abuse of monopoly power, encourage efficient service provision, and ensure the maintenance of asset quality. A significant part of the initial activity has been in power generation and telecommunications, both potentially competitive activities.
Different issues arise in competitive and monopolistic activities. Technological change has already made power generation and long-distance telecommunications potentially competitive, with potential for competition in local calls, and electricity distribution. Many other activities are at least in part natural monopolies. This applies especially to network industries, such as electricity transmission, gas and water supply, and to road and rail transport. In most cases consumers will have higher-cost alternatives, such as purchasing water, alternative energy sources, or competing transport modes. But substantial market power and special pricing problems remain as policy issues.

### The framework for involving the private sector in infrastructure

<table>
<thead>
<tr>
<th>Potentially competitive sectors (e.g., electricity generation, long-distance telecommunications)</th>
<th>Development phase</th>
</tr>
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<tbody>
<tr>
<td>• designing market structures in the public to private transition</td>
<td>• general competition policy, including network interconnection arrangements</td>
</tr>
<tr>
<td>• establishing rules for environmental and resettlement issues</td>
<td>• explicit subsidies for basic services for the poor</td>
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<tr>
<td>• limited and declining direct role in contracting</td>
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<table>
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<tr>
<th>Natural monopolies (e.g., electricity transmission and distribution; toll roads; ports; water supply)</th>
<th>Service delivery phase</th>
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<tbody>
<tr>
<td>• efficient management of the contracting process; using “competition for the field”</td>
<td>• regulation to ensure fair pricing, low-cost service delivery, quality of service and adequate future investment</td>
</tr>
<tr>
<td>• effective management of environmental and resettlement issues</td>
<td>• explicit subsidies for basic services for the poor</td>
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The following sections outline how the four interrelated objectives mentioned above—reducing risk factors, ensuring low-cost, high-quality services, ensuring timely and fair project approval, and addressing societal concerns—can be achieved, for both monopolistic and potentially competitive activities and in all project phases.

### The transition to market structures in potentially competitive activities

The countries at the conference that have gone furthest in private involvement in infrastructure have all made use of competition in the telecommunications and power sectors. In telecommunications, Australia, Chile, and Malaysia have multiple, competing operators. This is based on the view that there is little reason to restrict new entry into telecommunications networks since there are several technical options for supplying services (radio, satellite, cable networks, traditional land lines). In power generation, Chile and the Australian state of Victoria already have competitive structures, and the Philippines is planning to introduce competition.4

Private entry into power generation has primarily been through long-term (“take-or-pay”) power purchase agreements between private suppliers and government-owned power companies. Though multiple private generators exist in some countries, they do not compete with each other directly since they supply under long-term contracts which specify capacity payments under the take-or-pay contracts to cover the investment financing costs. Such investments typically occur through “build-operate-transfer” (BOT) arrangements and are thus primarily a device to assist governments in financing new capacity by deferring payments.

The transition to competition in these sectors is one of the potential new frontiers in East Asia. The experiences of both Chile and Victoria, Australia, were presented at the conference. They illustrate gains in both efficiency and investment: private sector finance has eagerly come in to support expansion and purchase state assets with bid—sometimes at surprisingly high prices, to the great advan-
tage of public finances. This was despite the absence of any public power purchase agreement (see Box 3).

Other countries in East Asia are considering sectoral reforms in electric power. Reform is high on the agenda in China, for example, as reported at the conference. In countries where private entry is at an early stage, there is opportunity to skip the stage based around BOTs and power purchase guarantees. However, there are important preconditions for successful competition. Where the buying power utility is not creditworthy, new entry is unlikely to occur. Successful cases have had price reforms to ensure overall viability and structural reforms of the power utility, often including privatization. Competition also requires the establishment of “power pools” and mechanisms to ensure fair dispatch (and hence the choice of generation plants with the lowest marginal costs of supply).

In competitive sectors the task of regulation is significantly eased, since competition fosters efficiency and fair pricing. However, experience shows that market structures are not always rendered competitive merely by permitting new entry. Market structures created at the time of restructuring or privatization can have long-lasting influences. In Chile a vertically integrated power company was allowed, creating the potential for the owner of the grid to give preference to the generating plants belonging to the same company. By contrast, in the deregulation in Victoria, Australia, there was a move to five generating companies and an independently owned grid. Thus, even after the principle of a competitive structure is established, the regulator or competition authority needs to keep an eye out for emerging anti-competitive tendencies.

**COMPETITION FOR THE MARKET AND TIMELY AND EFFICIENT CONTRACTING**

Many infrastructure projects are not in competitive activities, either because they are natural monopolies, or, as in much of the power generation and telecommunications investment in East Asia, because service provision has not yet been deregulated. This generally implies direct government management of the choice of project and award of contract. Government representatives at the conference particularly emphasized the need to ensure fair deals for society and avoid the excessive profits (and political fallout) associated with highly favorable contracts. Private sector representatives were especially concerned about lack of clarity in the rules of contracting and the overall cost of a process that is entirely financed with equity and should therefore yield a high return.

There was considerable discussion of the contracting process. Wherever direct competition in supply is limited, an additional source of discipline is competition “for the market” or for the “right to supply.” Such competition requires governments to identify projects, invite competitive bids, evaluate the bids, and award contracts. To exploit the potential of such competition, governments need to establish the basic rules and legal framework for eligible projects, identify qualified suppliers, and conduct individual transactions that result in prices that are fair and beneficial to consumers and are perceived as such. Where private involvement is mature and consumers are well-informed, there is potential for substantial government withdrawal from the contracting process, as demonstrated by the example of natural gas supply in Chile (see Box 4).

**BOX 3**

**Beyond power purchase agreements:**

*managing the transition to competition in power generation*

In the Philippines, the framework for competitive electricity supply is beginning to emerge and is likely to be implemented in the next three to five years. This will raise the issue of how to handle existing power purchase agreements. The Australian state of Victoria has already made this transition. The first major private entry was through the sale of the half-finished 1,000 MW Loy Yan B. Negotiations were costly, complex and lengthy, and the eventual deal involved a 33-year take-or-pay power purchase agreement and the state electricity utility taking all the construction risk during completion. Victoria subsequently introduced full competition in generation and complementary reforms in transmission and distribution. It chose, however, to grandfather the power purchase agreement with Loy Yan B in order to avoid adverse effects on the overall business environment, despite potential efficiency losses. The priority given to the overall stability of the business environment, combined with deep sectoral reforms, has led to strong private interest—without guarantees. As one measure of private interest, the 30-year-old Hazelwood power plant was purchased for three times its book value, with no power purchase agreement. This sale as well as sales of distribution companies helped transform the state’s finances.
blackouts. However, in recent transactions the reliance on competitive sourcing; several bidders have typically ated with selected parties rather than being subject to competition. This was true in the is indeed a key dimension of the procurement process-other investors to the power sector during the emergency period of tract is procured. While centrality is often accorded to the choice between competitive and non-competitive procurement—and this features of the transaction can also substantially influence the outcome. Early contracts in a country or sector are often directly negotiated with selected parties rather than being subject to competition. This was true in the Philippines initiative to attract private investors to the power sector during the emergency period of blackouts. However, in recent transactions the Philippines has relied on competitive sourcing; several bidders have typically responded, resulting in substantial competition and a steady lowering of the price at which power is purchased. Another successful example of competitive procurement has been in Thailand, where bidders were invited concurrently to bid on projects to provide up to 4,000 MW of power. Competitive bidding was also effectively used in Indonesia for telecommunications contracts.

But while competitive bids have brought obvious benefits in many instances, a large number of projects have been and continue to be procured through direct solicitation or in response to private sector proposals. For example, in Malaysia, which has the largest portfolio of private projects of any country in the region, virtually all projects have been directly procured rather than competitively bid. Many rationales are advanced for the benefits of non-competitive bids: less time is spent in the procurement process, overall preparation costs are lower since the costs that would otherwise have been undertaken by unsuccessful bidders are eliminated, and the private sponsor has the opportunity to display creativity in project design, which is not possible in a competitive situation where all bidders have to respond to a common basic request for proposals.

Examples presented at the conference, however, revealed that in practice, the gap between competitive and non-competitive contracts can be narrowed by overlaying the positive features of one upon the other. For example, sole source bids may be subject to an open and competitive price challenge prior to the award; in such cases, the original proponent may be given some priority for early design and development costs. Also, the costs of project preparation may be subsidized to attract a larger number of bidders, a practice that has been used in the UK’s Private Sector Initiative and is likely to be adopted in the Philippines. In Southern Australia, a negotiation process akin to that in sole sourced contracts was conducted in parallel with competing bidders (see Box 5). Preparatory work by the government is an important element of successful approaches to contracting.

Equally, the ills of either method often apply to the other, demonstrating the need for transparency of process, with a heavy emphasis on information disclosure, irrespective of whether a contract is procured competitively. While the suspicion of political patronage almost inevitably exists in the case of directly negotiated deals, a competitive process can also be tainted—or at least perceived to be so. There exists no necessary presumption that a competitive bidding process will be fairly and transparently conducted. Recent examples include heavy controversy surrounding the award of a water treatment contract in Thailand and a set of telecommunications contracts in India. In the important and widely-cited example of a water supply concession in Buenos Aires, the compe-
Managing competition in contracting:
South Australia's experience in water supply

The example of South Australia's award of a water supply contract demonstrates that a competitive bid may be designed to benefit from some of the presumed benefits of directly negotiated contracts. Certain features of this contract award are worth noting.

- Detailed technical and financial information was provided to prospective bidders based on past operations under public provision, but bidders were invited to and expected to undertake their own due diligence, including demand assessment.

- Detailed criteria were provided for choosing the winning consortium and as the basis for conducting any re-negotiations. As indicated above, re-negotiation does occur, even in competitive situations, and pre-specification of re-negotiation criteria will ensure greater transparency.

- Having received proposals from four prequalified bidders, the South Australian authorities engaged in a relatively novel—and potentially delicate—set of parallel negotiations with the bidders. Elaborate precautions were taken to prevent the abuse of confidential information and the process allowed a validation of the assumptions underlying each bidder's proposal, hence limiting the possibility of post-contractual re-negotiations.

- The bidding process was completed in 18 months under the supervision of highly experienced professionals, including international consultants.

USING REGULATION TO PROMOTE EFFICIENCY

Contract award is a one-time occurrence. However carefully this event is conducted, continual project oversight is generally required to ensure that contract terms are being met and that unexpected effects are not interfering with societal concerns. Such ongoing oversight is referred to as regulation. As with contract award, the process—and hence transparency and accountability—of regulation is at least as important as its technical features.

East Asia has limited experience with modern regulatory practices, but conference participants agreed that such practices, increasingly based on exploiting the incentives of service providers to behave in a socially desirable manner, will need to be adopted in the region. Such "incentive regulation" minimizes the information requirements of the regulator. For example, prices have in the past been determined to ensure that the provider receives a prespecified rate of return, a system that creates the perverse incentive for increasing capital costs while leaving the regulator with the difficult task of determining the appropriate level of investment. In contrast, an increasingly popular method of price regulation limits prices (and/or their rate of growth) rather than rates of return. Under this system, providers have an incentive to minimize costs rather than raise them unnecessarily. In practice, such a "price cap" system does require benchmark estimates of rates of return at the time the cap, or limit, is established. Ideally, the determination of price caps should occur once every five to seven years, thus limiting the information needed for effective regulation. Such price cap procedures are being used in power generation contracts throughout the region, although an important contract for a national sewerage system in Malaysia is being regulated on a rate of return basis.

Regardless of the technical method of regulation, measures are required to ensure the accountability and independence of regulators. Regulatory decisions need to carry authority and demand respect. The relationship between the regulator, the legislature, and the executive is typically blurred and needs to be clarified. One view holds that the regulator should be accountable to the legislature, with regulatory commissions staffed by commissioners with overlapping terms so that an entire commission cannot be summarily dismissed.
DEALING WITH BROADER SOCIETAL CONCERNS

Discussions stressed the importance of dealing with societal concerns explicitly and early, often with both public and private involvement. Doing so allows both investment risks and opportunities to be efficiently addressed. For example, when environment and resettlement concerns are addressed during the project development phase, opportunities for innovative, “win-win” solutions can be exploited. Similarly, the goal of extending service coverage and providing the poor with affordable services needs to be clearly stated and reflected in the regulatory framework and the pricing structures adopted.

Resettlement and environmental concerns are frequently important in infrastructure projects and can become major sources of project risk. The large size of transportation and hydroelectric facilities makes resettlement a special concern in such projects. Governments in the region are formulating policies and procedures for resettling those displaced by infrastructure projects (see Box 6). Where international lending agencies are involved, the pressure for effective design and implementation of resettlement plans is increased. Even with purely private infrastructure investments, the risk of political opposition to the project requires active government involvement to ensure that the concerns of the affected parties are fairly and equitably addressed through consultative processes, choice of relocation sites, and adequate support (including compensation) to provide an effective base for long-term income restoration.

Similar considerations apply to dealing with environmental concerns. Most project sponsors tend to view such concerns as increasing project costs and risks, both during project development and later on, through unexpected liabilities due to changes in regulation and discovery of sensitive environmental problems. However, as a background paper for the conference demonstrated, perceived risks can often be turned to the advantage of both developers and society when increased operating efficiency and improved environmental performance go hand in hand—such may be the case in energy, transportation, and water projects. To realize this potential for mutual benefit, regulators must be clear about the performance standards to be met and allow sufficient operational flexibility to the project sponsors.

In most countries large segments of the population, both poor and non-poor, often lack access to electric power, telephones and piped water supply. In many cases, however, they will actually pay much higher prices for alternatives, as in the case of vended water. For many societies, provision of minimum access standards for such services is a policy objective, especially in middle-income countries approaching universal access to infrastructure networks. This often implies subsidized access to basic services for some of the poor, potentially jeopardizing the commercial viability of service supply. The generally agreed principle in such cases is an explicit subsidy provided for targeted households. A practice in Argentine water contracts, for example, is the full billing of services provided but with a portion of the bill paid by the households and the subsidy charged directly to the government. In Chile, subsidies for rural electrification are built into contracts that are then competitively bid.

Issues relating to sector regulation, contracting, resettlement, the environment and reaching the poor come together in the water supply sector. To date there have been very few finalized deals in East Asia outside of Malaysia, but there was considerable interest in the sector during the conference. Despite the complexity of the issues it is an important new frontier for private involvement in the region (see Box 7).
Issues in infrastructure finance

THE CURRENT SITUATION

The finance discussion established that there is no shortage of international funding, and that while more domestic capital market development is critical for the future, it is not a binding constraint at the present time. Significant equity funds exist in both mature developed countries and, increasingly, in the region. East Asia has the highest domestic savings rates in the world and its newly-industrializing economies are now major sources of foreign investment. Hong Kong, for example, was reported to be the fourth largest source of foreign direct investment in the world and the leading source of foreign investment in ASEAN.

In the past few years, debt availability has been perceived as a limitation to the progress of private infrastructure, principally because both commercial banks and long-term investors such as pension funds tend to be highly risk-averse. However, participants agreed almost unanimously that under present conditions no viable project is being constrained because of limits on debt finance: along with the export credit agencies, commercial banks and long-term debt markets are displaying a sufficient appetite for infrastructure projects.

RISK

The finance discussion united the major themes of earlier sessions, highlighting the risks at various stages in the project cycle (Box 8). Private sector participants emphasized that their resources have an opportunity cost and therefore returns should match those of alternatives after allowing for risks.

While risk management in the development, construction, and operational phases is key to financing infrastructure projects in the immediate future, it was recognized that for the long-run development of private infrastructure, international and domestic debt institutions and markets would need considerable stimulation. Three core issues emerged:

• Domestic financial sector institutions, both capital markets and banks with project finance capabilities, are underdeveloped and, in most countries, are intermediating a tiny fraction of domestic savings into infrastructure finance.

• Government guarantees are often required but need to be provided cautiously and phased out as experience accumulates and risks are reduced through establishment of sectoral frameworks.

• Relatively few international banks participate in the private infrastructure business and international capital market institutions remain cautious. The OECD countries will need to liberalize the

BOX 7

Water supply and sanitation—regulation, the environment and the poor

Because water is a basic necessity and clean water is required to prevent the spread of disease, the universal supply of affordable water is a high priority everywhere. But water supply systems throughout the region are under great stress as rapidly-growing urban populations place increasing demands on existing systems. Typically, the prevalence of subsidies has perversely limited the expansion of supply without providing benefits to the poor, who have little access to the public system and buy water at high prices from private vendors. Sewerage systems are even less developed and service prices are much too low to cover the substantial investments required. As a consequence, poor sanitation is a growing threat to public health and the environment in many countries.

Private entry into water and sanitation has been restricted by existing system inefficiencies, uneconomic pricing, and government wariness of awarding monopoly distribution rights in such a sensitive sector. A major sewerage contract has been awarded in Malaysia, a number of water sourcing and treatment contracts have been awarded in Malaysia and Thailand, a private party manages the water distribution system in Macao, and similar contracts are being discussed throughout the region, notably in Manila, Jakarta, and a number of cities in China. But the needs extend well beyond these early efforts.

Regulating the water and sanitation sectors is a challenge because large investment requirements and higher environmental standards imply the need for long-run price increases. Balancing the goals of providing access to a much larger proportion of the population, including the poor, protecting the environment, and preventing abuse of monopoly distribution rights creates a policy challenge which can be overcome only by increasing experience and collaborative public-private efforts.
The project development phase, when the risks are greatest, is financed almost entirely with (often substantial) equity funds. A drawn-out contract award process and a lack of transparency can greatly increase project preparation costs, hence high returns are expected on this exploratory work.

During the construction period, project sponsors characteristically seek 70 percent debt financing. Since capital markets are typically cautious of financing construction, banks are called upon to play a prominent role, for which they demand relatively large spreads because of the greater risks. Since commercial bank resources are limited—and there are relatively few experienced banks in international project finance—it will be increasingly important to recycle bank resources into new projects and refinance projects via capital markets once they are operational. While, in principle, governments do not bear construction risk in most projects, as ultimate guarantors in many projects they do bear residual risk.

Once projects are up and running, cash flows are subject to market and regulatory risks. The basic solution, as described earlier, is to reduce the regulatory risks prior to operation by establishing sound sectoral frameworks, including those associated with environment and resettlement.

international flow of funds, and the export credit agencies and multilateral banks will continue to play a major role through direct lending, guarantees, and project due diligence services.

DOMESTIC CAPITAL MARKET DEVELOPMENT

Weak domestic capital markets were a key discussion theme, though the development of domestic banks with strong project finance capabilities is also increasingly important. There is a potentially powerful complementarity between the demand for long-run local cost financing for infrastructure and the importance of such demand for fostering capital market development. It is likely that already fast-growing domestic equity markets will emerge relatively quickly as sources of infrastructure finance—and public offerings by infrastructure corporations will support equity market deepening.

Paradoxically, the weak state of domestic capital markets is partly due to the sound state of public finance in the region, since capital markets usually grow around a core of government bond issues. However, some countries—Thailand for example—are using regular bond issues to develop benchmarks, even when there is no fiscal need for doing so.

The more fundamental issues lie in the intermediation of long-term savings to private infrastructure. There are potentially large sources of long-term savings in populations that are now rapidly aging, with sharply rising demand for old-age financial security. Pension reforms in the direction of funded schemes and insurance-sector development could lead to very rapid growth in long-term savings. In Chile this has been an important supply-side source of capital market development. Pension reforms are firmly on the agenda in many countries, notably China. The need for supply-side development of long-run savings is accompanied by the need to ensure a sound, prudential basis for management of pension fund assets, especially publicly-managed schemes, so that the savings of the population at are not exposed to unreasonable risk.

THE ROLE OF GUARANTEES

A consensus emerged between the public and the private sectors that while guarantees will continue to play a role in private-sector infrastructure development, they need to be used with caution and phased out as soon as sectoral reform is undertaken. Otherwise, private-sector involvement will lose its viability as governments run out of capacity to provide guarantees.

Governments everywhere have provided a variety of explicit and implicit assurances backed up by obligations for financial compensation to attract private investors to infrastructure projects. These guarantees typically cover a variety of regulatory risks (including that of the pricing regime and of outright or creeping expropriation), risks of non-payment by state-owned utilities (in the power and water sectors), and the risk of lack of convertibility of domestic currency. Typically, these guarantees or comfort letters are overlaid with political risk insurance from bilateral or multilateral agencies.

In the Philippines there is clear awareness of the macro policy implications of guarantees—extending into commercial risks—that were provided in the emergency power program of the early 1990s. These have left substantial conditional fiscal liabilities that are now being incorporated into public budgeting. While the guarantees are judged to have been justified to solve the power crisis, the Philippines (along with other countries) has recognized that the past approach is unsustainable and is now moving
Managing guarantees in the Philippines

Under its emergency program for attracting private investment for power generation, the Philippine government provided full faith and credit guarantees to back the obligations of the National Power Corporation (NPC) which had entered into long-term power purchase agreements with private suppliers. These guarantees covered the entire risk of NPC’s payments: failure to pay for any reason would trigger government liability.

With considerable experience in private power generation, and hence a track record of honoring payment obligations, the Philippines is in a position to scale back on guarantees provided. In 1995, the government adopted a policy with four objectives, namely:

- to unbundle the risks to be able to sharply demarcate covered risks;
- to reduce coverage by guaranteeing 75-80 percent of payment obligations;
- to introduce the concept of guarantee “fall-away” (for example, the guarantee of foreign exchange coverage falls away when the Philippine government achieves an investment-grade credit rating and retains that rating for a two-year period);
- to create administrative mechanisms for more careful guarantee review, pricing, and budgeting, including possibly retaining reserves against guarantee claims.

The principles of risk unbundling, reduced coverage, and guarantee fall-away have already been adopted in some of the recent guarantees provided. The Philippine government is investigating options for a present value budgeting system that would reduce the budgetary incentives to provide guarantees.

toward narrower guarantees (see Box 9). In Australia, the New South Wales auditor has ruled that a number of “private” projects are fully public liabilities owing to guarantees. The State of Victoria provided guarantees for its first private power plant but these are no longer required in the present competitive structure. Chile has had virtually no guarantees in any sector. It was emphasized that in both cases there is no financing constraint in the fully privatized sectors.

While both domestic and international guarantees (such as the multilateral development banks’ partial risk guarantees) have a carefully circumscribed role in a transitional period—especially when parts of interconnected systems remain public—the experiences of deeper reform imply the potential of a system based on reputation for national policy and market-based contracts for commercial transactions.

INTERNATIONAL CAPITAL AND THE ROLE OF OFFICIAL FINANCE

The conference consensus was that no special policies are required to stimulate the development of financial instruments. Alternative financing techniques, including the use of needed mezzanine debt instruments, will naturally emerge from the market when the basic frameworks are in place and project pipelines strengthen.

The focus was therefore on sustaining the flow of private international capital and the complementary role of official finance. Specific recommendations included:

- an enhanced role for export credit agencies in project finance as well as other measures to ease international capital flows, including reduced restrictions on pension and insurance funds;
- the use of concessionary official development assistance in financing complementary investments, such as access roads and environmental protection; and
- an enhanced role for multilateral development banks in support of private involvement in infrastructure (see Box 10), including providing advice on project structuring, due diligence, and guarantees to further catalyze debt flows.

Government strategy, capabilities and coordination

There was strong endorsement of the central role of effective government in this phase of private involvement in East Asia’s infrastructure. While in some areas, especially competitively supplied infrastructure services, there will eventually be a smaller role for the state, this crucial transitional period will place demands on governments that are as great, and often
BOX 10
The role of multilateral agencies

Many participants felt that the World Bank and other multilateral institutions have a crucial role to play in bringing about a sharp increase private participation. Several elements of this role were proposed:

- facilitating continued public-private dialogue at both the country and regional levels;
- sharing information and lessons of experience from within and outside the region;
- helping countries develop a more conducive framework for private participation;
- supporting the development of new financing mechanisms, including the policy framework for domestic financial sector development, including bond markets;
- formulating standards for bidding and contracting documents; and
- financing more privately-sponsored projects in a manner that maximizes the leveraging of Bank commitments.

more complex, than those required by the direct public provision of infrastructure.

MAKING STRATEGIC CHOICES

Involving the private sector in infrastructure is characteristically highly demanding in the early phases, requiring both high-level political commitment and the attention of key individuals in central government ministries. There have been marked differences in the sequence in which private involvement has begun to occur in different countries: power in the Philippines, toll roads in Indonesia and mass transit in Thailand. These choices reflect particular pressure points, political economy conditions, and societal preferences. Conference participants stressed, however, that moving sequentially often makes practical sense because of the high political and technocratic demands on governments.

POLICY FORMULATION, PLANNING, COORDINATION, AND STREAMLINING OF PROCESSES

Outside the clearly competitive sectors, for which free entry is likely to be acceptable, there will be a continuing role for policy formulation, planning, and priority setting. In the contracting phase, there is an equally important need to coordinate many agencies, especially with the rising involvement of sub-national authorities. Some countries, including Malaysia and Korea, solve this problem with a powerful central unit, though other countries may choose alternative solutions.

STRENGTHENING PUBLIC SECTOR CAPABILITIES

Establishing and sustaining a policy and institutional framework that generates confidence in investors requires new capabilities and skills within the public sector. Government officials and the staff of regulatory authorities (when these are formed) must develop a greater appreciation of mechanisms that create incentives for efficiency in contracting and service delivery, heightened sensitivity to risk sharing, and improved management. Such staff will need to manage complex legal, economic and technical issues, often in dealings with utilities that have substantial information advantages.

Attracting and keeping well-qualified staff will often require attention to pay structures.

The conference concluded that although there is no magic formula for sharply increasing private-sector involvement in infrastructure, there is a set of common principles for fostering such involvement while achieving efficiency gains and meeting societal goals. These principles—transparent processes, stable rules, price reforms, maximum competition, and incentive-based regulatory structures—are the pillars of a basic framework that can be customized by each country depending on its priorities and institutional characteristics.

Reaching effective solutions will be an evolutionary process, with countries learning from their experience with each phase of transactions. But systematic information-sharing within the region and between East Asian nations and other countries, at all stages of development, will allow all concerned to reap powerful gains. Late starters may be able to skip the "learning-by-doing" phase, jumping directly to deeper reforms and enjoying the efficiency, investment expansion, finance and public confidence gains thanks to the shared experience of earlier innovators.
Background Papers

The following background papers were prepared for the conference. These are being revised and will be available in the coming months.

AHLUWALIA, Montek S. “Financing Private Sector Infrastructure.”

GENTRY, Bradford S. “Breaking the Bottlenecks to Private Participation in East Asian Infrastructure: Environmental and Resettlement Issues.”


RUSSELL, Donald Eric. “Private Sector Infrastructure: The Importance of Government Commitment and Organisation.”


NOTES

1 Dollar amounts are in US$.

2 This excludes the long-standing private projects (for example the Harbour Tunnel in Hong Kong).

3 BOT refers to Build, Operate and Transfer, a common form of private involvement in which a private company or group contracts to construct and operate a project for a specified period and then return the assets to the government.

4 Other countries outside East Asia such as New Zealand, the United Kingdom, and the United States have all moved to competitive market frameworks in both sectors and many Latin American and Eastern European countries are moving in this direction.

5 Evidence from the US supports the view that real efficiency gains come from competitive market structures in power, rather than from private ownership.

6 In the UK some observers now judge that excessively large power generation companies (and in telecommunications, a legal duopoly for a period) created the potential for abuse of market power at the expense of consumers.

7 Gentry, 1996.
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