

**ROLE OF THE FINANCIAL SECTOR:  
CHANNELING PRIVATE SAVINGS TO  
INFRASTRUCTURE INVESTMENTS IN EAST  
ASIA AND THE PACIFIC (EAP)**

**October 29, 2004**

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Note: This Paper was commissioned for the ADB-JBIC-World Bank East Asia and Pacific Infrastructure Flagship Study. The views expressed are those of only the authors.

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**ROLE OF THE FINANCIAL SECTOR: CHANNELING PRIVATE SAVINGS TO INFRASTRUCTURE INVESTMENTS IN EAST ASIA AND THE PACIFIC (EAP)<sup>1</sup>**

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**Chapter 1: Introduction**

***1.1 Background and Objectives***

The World Bank, in conjunction with the Asian Development Bank (ADB) and Japan Bank for International Cooperation (JBIC) (collectively the “Sponsors”), is developing a major report (the Flagship Report<sup>2</sup>) on how to mobilize private savings for infrastructure in East Asia and the Pacific (EAP)<sup>2</sup> while minimizing fiscal risk to the public sector. In connection with this project, this background paper (the “Paper”) reviews the lessons of experience in EAP in accessing financing from both domestic and international private sector sources (as distinct from governmental resources) for infrastructure projects via equity investments, bank loans and financing in debt capital markets.

The Paper sets out SCIC’s approach, methodology, findings and recommendations. We include a list of parties who were contacted in person or via telephone or email (Annex 1) for market soundings.

***1.2 Methodology***

The Paper is based principally on (i) research materials provided by the World Bank or gathered by SCIC, (ii) facts and opinions gathered via face-to-face or telephone interviews with more than sixty key financial market participants such as sponsors, portfolio managers, investment and commercial banks, rating agencies, monoline financial guarantors, multilateral agencies, private credit risk insurers, etc. and (iii) certain parallel reports being prepared as part of the Flagship Report, including appropriate Background Papers mentioned in the Issues Paper.

***1.3 Financing Capabilities of Individual EAP Countries are Diverse***

The ability of individual countries in the region to mobilize private savings for infrastructure development varies. Some of the larger countries have relatively active domestic financial markets and are also rated (e.g., China, Malaysia, the Philippines, Indonesia, and Thailand) and

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<sup>1</sup> By Mahesh Kotecha, President, Structured Credit International Corp. assisted by Sharon S. Ryan, Senior Financial Advisor of SCIC, with data analysis on ProjectWare by Brian Andrews, then an Associate at SCIC. Submitted originally in July 2004 and revised in October 2004. The author would like to thank market participants too numerous who provided comments and assistance including but not limited to those in Annex 1 as well as Suman Babbar, Mansoor Dailami, Arvind Gupta, Javed Hamid, Ellis Juan, Kamran Khan, Hami Kharas, Hana Polackova, David H. Scott, Marc Shotten, Martin C. Spicer, P.S. Srinivas, Philippe Valahu and Jon Walters all of the World Bank Group and David Ehrhardt of Castalia.

<sup>2</sup> The countries included in the Flagship Report are as follows: (i) middle income, large population: China, the Philippines; (ii) middle income, medium population: Malaysia, Thailand; (iii) middle income, small population: Fiji, Kiribati, Marshall Islands, Micronesia, Palau, Samoa, Tonga, Vanuatu; (iv) low income, large population: Indonesia, Vietnam; (v) low income, medium population: Cambodia, Lao PDR, Mongolia, Myanmar, Papua New Guinea; (vi) low income, small population: Solomon Islands, Timor Leste.

have, to varying degrees, enjoyed international capital market access. For this group of countries, the fiscal burden on the government sector of fostering private capital flows through risk mitigation and co-financing may be relatively moderate and could decline over time.

Most of the rest (Cambodia, Fiji, Kiribati, Lao PDR, Marshall Islands, Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor Leste, Tonga, Vanatu, and Vietnam) have very little financial sector development. The four countries among them (Fiji, Mongolia, Papua New Guinea, and Vietnam) that are rated have such low ratings (well below investment grade) that their capital market access remains limited. As these countries can look forward only to a limited improvement in international capital market access, the fiscal burden of facilitating infrastructure development will be relatively greater. These countries might benefit proportionately more from domestic financial market development, particularly in the banking sector.

Investment grade countries like Malaysia, China and Thailand (see Table 1) have access to international financial markets. To access international private capital, non-investment grade rated countries such as Indonesia, the Philippines, and Vietnam may require not only co-financing from multilateral and bilateral lenders but also “four-point” public or private sector political risk cover, which includes cover for breach of contract. To achieve better market access, both investment grade and non-investment grade countries will need to improve their investment climate in general and their policy environment for infrastructure investments in particular. Improvement in the investment climate may lead to higher credit ratings, which often serve as a barometer of market confidence in the international financial community. Non-rated countries may benefit from getting and learning how to use formal credit ratings to facilitate both debt and equity capital flows. The benefits of ratings include lower cost of debt, longer-term debt financings, and a broader investor base for debt and equity. These benefits come with the costs of maintaining a rating, which include increased transparency with the glare of the financial markets on policy makers.

Recommendations are made on measures EAP countries, international financial institutions, and the private sector could take to attract more private financing of infrastructure. If implemented, there could be a return to the levels of private investment seen before the Asian financial crisis, but this will require a restoration of the credibility of the EAP countries, risk mitigation from official and private sources, and viable project designs from the private sector. Based on experience of renegeing on contractual obligations, Indonesia will have a difficult time regaining such credibility. However, capital will be attracted to such countries as Thailand, Malaysia, China, and perhaps in time to the Philippines as well as new investment destinations such as Vietnam that will also stake out their claims.

#### ***1.4 Executive Summary***

SCIC has conducted a market survey and research, which are the basis for the following recommendations. The challenges of financing infrastructure for EAP countries over the next decade are enormous. The lessons of the last decade suggest some key lessons and lead us to make the following recommendations (see also Chapter 8). Many of these recommendations are supported by the discussion on financing infrastructure in the *Global Development Report 2004* (see Chapter 6), notably: the importance of investor protection, the need and increasing ability to

pursue local currency financings, the unique role of multilateral agencies in long term lending, poverty alleviation, risk mitigation, promotion of sub-sovereign financings, and improving the creditworthiness of public providers of infrastructure.

The EAP governments should first seek to reduce exposures to foreign exchange risks through more domestic financing of infrastructure. Development of domestic capital markets (both corporate and municipal) should be given a priority to complement the limited capabilities of domestic banking systems to provide long term financing for infrastructure. Second, as foreign lenders and investors are risk averse, the EAP government should seek to establish reasonably attractive sector policies that above all are predictable. Third, in a competitive market place, perceptions of risks can be quite damaging. To help mitigate such perceptions or risk governments that do not have formal sovereign ratings should seek them and those that have them should not only try to improve them but also try to use them more effectively.

It is difficult to make recommendations to the private sector as they are free agents and cannot be compelled to invest or to lend. However, three points seem to be self-evident and in their own interest. First, the experience of the last decade in the region demonstrates and has convinced most of them that successful projects are those that are viable from inception. Time and again, poorly designed projects have failed in the face of difficult challenges, which are bound to come sooner or later given the long lives of infrastructure projects. Second, financial engineering can help reduce risks in different ways. Pooling of multiple project cash flows has been insufficiently used and offers some potential but will require disclosure of data on past default rates and loss given default so rating agencies and investors can make reasonable investment decisions in pooled structures. The role for risk mitigation instruments should be expanded beyond political risk insurance to comprehensive risk cover and may require public private partnerships (e.g., between multilateral institutions and monolines). Third, steps should be taken to align the interests of long term debt holders and equity holders in a variety of ways: (i) seniority of debt should be provided for in the cash flow waterfall, along with comfortable debt service ratios and dividend lock-up provisions so equity holders have incentives to meet as closely as possible their base case projections; (ii) there should arms length relationships between concessionaires and related construction contractors to ensure that some shareholders do not get their money back through the back door before others and (iii) protections like political risk insurance, if afforded to equity holders, should be available equally to senior lenders so interests of both parties are aligned.

For the official sector, there are also some key lessons and recommendations. First, market participants value the potential role of multilateral institutions as “honest brokers” though there are concerns about their objectivity when they have their own balance sheets at risk. This role could perhaps be formalized in some fashion so that project problems can be worked out before a resort to legal action. Second, there is great potential in the areas of lending as well as risk mitigation and in forging public-public and public-private partnerships.

Clearly, some recommendations will take longer to implement than others. In general, measures designed to reduce real risks through better policies, local capital market development, changes in credit culture and possible increase in the leverage applied to multilateral institutions’ guarantee products will likely take longer to define with greater precision and implement than reforms in

bank regulatory treatment of infrastructure loans which are already in train, greater effectiveness in the availability and use of risk mitigation instruments, better knowledge on how to use ratings go address market perceptions of risk, etc.

#### ***1.4.1 Projects Must be Viable***

A key conclusion of our work is that risk mitigation alone cannot offset poor project economics or poor host government policies for infrastructure. This view is based on market experience of the last decade, which takes into account the experience both before and after the onset of the Asian financial crisis in 1997. Projects that tend to do well under economic and political stress are those that have sound economic fundamentals and provide essential services at affordable prices on a profitable basis. It is possible to develop viable projects only within a framework of sound sector strategies, good policy planning, a willingness to uphold legal contracts even in diversity and a long-term commitment to improving country ratings. Thailand<sup>3</sup> and the Philippines<sup>4</sup>, which did uphold contracts in the aftermath of the Asian crisis, are better regarded on this specific issue in the credit markets than Indonesia, which reneged on some contracts.<sup>5</sup>

With the benefits of hindsight and greater scrutiny at all levels – the sponsors, the governments, and the financiers -- the quality of projects that see the light of day is improving. This has often led to delays pending the recovery demand or of fiscal capacity or both, greater willingness of some countries to honor contracts to preserve market access, greater focus by sponsors on project economics and greater credit discipline among lenders when offering debt financing.

Predictable and sound infrastructure strategies and policies, transparent legal and regulatory environments, a willingness to abide by contracts and enforce arbitral awards, hospitable investment climates, and acceptable country credit ratings characterize viable projects, which must also have sound deal fundamentals, including experienced and reliable sponsors, quality supplies with acceptable prices, sensible and transparent take-or-pay contracts, tariffs with

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<sup>3</sup> Thailand has come through the financial crisis successfully but financial and corporate sector reforms have not been as deep and wide as expected and the election to be held in 2005 creates some uncertainties. Energy is considered the most attractive sector for financings. EGAT honored all PPAs and paid on time though there were some amendments of indexation to inflation. Toll road sector and mass transit projects have been problematic. Hopewell has withdrawn from high-speed rail deal and the Bangkok Mass transit system is still not integrated although the Skytrain is operating. Thailand needs to develop its domestic capital markets (including securitization, corporate, utility and municipal bonds) so as to offer long maturities and fixed rates. It needs to improve policy, regulatory and administrative framework for the sectors in which megaprojects are being considered, including concessioning, rate setting, and supervision of state owned enterprises. It also needs to improve the reputation and capabilities of TRIS, a Thai rating agency, possibly through foreign technical assistance / investment.

<sup>4</sup> The Philippines was generally careful to respect its PPAs. In fact, the government stated publicly that it would not abrogate on its obligations under off-taker contracts. Thus IPPs were paid whether or not power was dispatched. Tariffs have been high because of oversupply of high cost power. Some PPAs were renegotiated (especially those with Mirant) and the government achieved some savings. The government is considering privatizing transmission and generation assets and some of the IPPs are for sale. Power demand is picking up and there will be financing requirements but the markets skeptical as the Electric Power Infrastructure Reform Act of 2001 (“EPIRA”) has created some uncertainties. In addition, the markets are skittish on the Philippines, reflecting not only concerns about the elections but also about the post-election economic policies of the new Arroyo government.

<sup>5</sup> For overall country risk reasons, however, some lenders were more inclined to consider Indonesian financings rather than those from the Philippines, despite their different track records on PPAs, as of mid-2004.

adequate cost recovery, breakeven demand at affordable prices and attractive returns on investment.

**Table 1: Ratings of EAP Countries<sup>6</sup>**

Country	Standard & Poor's Local/Foreign Currency	Moody's Local/Foreign Currency	Fitch Local/Foreign Currency
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**Middle Income, Large Population**

China	BBB+/BBB+	NR/A2	A/A-
The Philippines	BBB/BB	Ba2/Ba2	BB+/BB

**Middle Income, Medium Population**

Malaysia	A+/A-	A3/Baa1	BBB+/BBB+
Thailand	A/BBB	Baa1/Baa1	BBB+/BBB

**Middle Income, Small Population**

Fiji	NR	Ba2/Ba2	NR
Kiribati	NR	NR	NR
Marshall Islands	NR	NR	NR
Micronesia	NR	NR	NR
Palau	NR	NR	NR
Samoa	NR	NR	NR
Tonga	NR	NR	NR
Vanuatu	NR	NR	NR

**Low Income, Large Population**

Indonesia	B+/B	B2/B2	B+/B+
Vietnam	BB/BB-	NR/B1	BB/BB-

**Low Income, Medium Population**

Cambodia	NR	NR	NR
Lao PDR	NR	NR	NR
Mongolia	B/B	NR	NR
Myanmar	NR	NR	NR
Papua New Guinea	B+/B	B1/B1	B+/B

**Low Income, Small Population**

Solomon Islands	NR	NR	NR
Timor Leste	NR	NR	NR

Poor project fundamentals can increase pressures on host governments to renege on contractual commitments provided to induce sponsors and lenders to undertake the project, such as mechanisms to recover costs that may in retrospect prove to be excessive. In the Meizhou Wan

<sup>6</sup>As of July 9, 2004.

transaction, tight documentation could not offset the risk that a government may decline full cost recovery as specified in the contract when alternative power is available at lower cost, especially at a time of weak demand.

#### ***1.4.2 Rising Profile of Domestic Banks and the Attendant Risks of Directed Project Lending***

Domestic banks in some countries have provided projects with term funding for over fifteen years in local currency – e.g., BLCP in Thailand and Nanhai (petrochemicals) in China, helping limit foreign exchange risk for these projects. In China, domestic banks are also prepared to provide dollar loans and thereby finance projects without any need for foreign bank participation. This development is possible where there is a high level of liquidity in domestic banking system and where internal risk management guidelines and regulatory authorities permit maturity mismatches and significant risk concentrations to large infrastructure projects. Such local currency lending reduces and may even eliminate foreign currency exposures for projects.

As long-term loans entail significant maturity mismatches given the relatively short maturities of deposits as well as large and lumpy credit risks, it may not be sustainable where the banking systems are weak. To the extent such loans might have been made with government jawboning, they could also entail a moral hazard and hence a potential liability for the government in the event the projects or the banking system encounter problems.

Chinese banks have been very active in lending to infrastructure projects on very competitive terms not only in local currency but also in dollars, often beating out foreign banks in competed transactions. Chinese banks are also following Chinese sponsors and going abroad. State bank loans and equity are cheap: e.g., ROIs for equity investments made through bank affiliates are low (8-9%). Moreover, market participants indicate that Chinese banks are not very familiar with proper documentation of project financings and may be taking excessive risks.

As of year end 2002, infrastructure loans made up 16% of Chinese domestic lending driven in part by the government requirement for banks to co-finance long term construction bonds. Chinese banks' infrastructure lending may be even higher as some corporate lending is for infrastructure: e.g., power sector has large domestic sponsors who prefer corporate deals as they have high operating margins and can launch IPOs. This growth in lending is even more significant given the expansion of domestic credit from 88% in 1995 to 138% by year-end 2002. . Though highly liquid, the Chinese banking system, dominated as it is by state-owned banks, is still weak with a typical foreign currency rating of BB. Market observers believe that non-performing loans (NPLs) represent 20% of total assets, giving little credence to the government's projections that NPLs will drop to 3% to 5% by 2007. The banks have weak capitalization and a return on average assets of was an abysmal 0.18% for the largest four state-owned banks in 2002, according to Standard & Poor's (S&P). Therefore, S&P believes it is unlikely that Chinese banks can resolve the overhang of NPLs without state aid.

Thai banks (with foreign currency ratings generally in the B or BB categories) are also very liquid and have recently become more aggressive in project lending at a time when banking industry risk remains "high" according to S&P, with recurring problem loans, low profitability and weak capitalization. Therefore, it is a potential concern in this context that the Thai government has

plans for megaprojects, which may be financed through directed lending by the domestic banking system, increasing its single risk concentrations and potentially reducing its asset quality.<sup>7</sup> Countries with relatively weak banking systems, need to work to strengthen their banking systems through improved regulation (including bank examinations, oversight of asset and single risk limits), improving corporate credit culture and standards, higher capitalization, and better asset and liability matching through longer-term deposit substitutes that can better match the long durations of project loans. Innovative products such as ADB's term swap facilities can also help inject longer-term funds into banking systems. Progress in banking system reforms can be measured through changes in the credit ratings of domestic banks. For example, the recapitalization of two large government owned Chinese banks in late 2003 was recognized in early 2004 by rating upgrades. Though the rating agencies are known for being lagging indicators on individual credit ratings, their ratings of domestic banks do tend to point the out fundamental strengths and weaknesses of a country's banking system. Therefore, ratings combined with insights of bank regulators can serve to warn of weaknesses in the domestic banking systems.

### ***1.4.3 Rising Profile of Asian Sponsors***

As risk turned out to be higher and returns lower than expected, the post-97 period has seen a significant retreat by US and European project sponsors from Asia, particularly in power and telecommunications sectors. In the power sector, this has been exacerbated by turmoil in the industry, with many restructurings among potential US and European sponsors resulting from financial market turmoil, mergers and acquisitions as well as management changes leading to sharp changes in strategies. The retreat has come in the form of asset sales, projects not completed as well as investments not pursued. Into the void have stepped Asian regional players. In power, there are sponsors based in Singapore, Hong Kong, Japan, China, Korea, Australia, and Malaysia. For example, the BLCF transaction involved CLP from Hong Kong and Banapu, the domestic Thai coal company. Another example is Phu My 3 where the sponsors are the Singapore-based SembUtilities as well as Kyushu Electric Power and Nissho Iwai of Japan. Phu My 2.2 had two Japanese sponsors, namely, Sumitomo and Tokyo Electric Power.

This is generally a welcome development (even if not a panacea) as it represents investments by regional players who may have a better understanding of neighboring markets and perhaps longer staying power as they are closer to their home markets than international sponsors. But the greater participation of regional sponsors also reflects some distressed sales by retreating international player. Moreover, regional players are unlikely to replace international players as regional players have limited geographical target markets, often pursue niche product strategies where they have a

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<sup>7</sup> Thailand has come through the financial crisis successfully but financial and corporate sector reforms have not been as deep and wide as expected and the election to be held in 2005 creates some uncertainties. Energy is considered the most attractive sector for financings. EGAT honored all PPAs and paid on time though there were some amendments of indexation to inflation. Toll road sector and mass transit projects have been problematic. Hopewell has withdrawn from high-speed rail deal and the Bangkok Mass transit system is still not integrated although the Skytrain is operating. Thailand needs to develop its domestic capital markets (including securitization, corporate, utility and municipal bonds) so as to offer long maturities and fixed rates. It needs to improve policy, regulatory and administrative framework for the sectors in which megaprojects are being considered, including concessioning, rate setting, and supervision of state owned enterprises. It also needs to improve the reputation and capabilities of TRIS, a Thai rating agency, possibly through foreign technical assistance / investment.

competitive edge, have limited experience with international non-bank financial institutions such as export credit agencies and the international financial institutions, may be no less prone to retreat, e.g., Hopewell from Bangkok high-speed rail deal, and have relatively limited resources and technology. .

#### ***1.4.4 Increasing Role for Risk Mitigation***

Risk mitigation, also no panacea, may offer new opportunities to broaden the investor base for infrastructure financings and to distribute the risks more widely so as to limit their adverse impact. This can be done with risk mitigation designed to segment, allocate, manage, distribute, control and manage risks inherent in project financings. At the country level, governments may need to find ways to increase the credibility of assurances, undertakings and contractual commitments that make project sponsors willing to take huge risks.

Multilateral lenders (including the World Bank and ADB) provide two types of guarantees that can be important risk mitigants in infrastructure finance - partial credit guarantees (PCGs), which cover credit risks and can facilitate longer maturities, and partial risk guarantees (PRGs), which provide protection from policy risks. Coverage is typically available for new investment and not generally offered by multilaterals for refinancings or restructurings. PRGs are also provided by bilateral agencies such as the US Overseas Private Investment Corp (OPIC), JBIC, US Export Import Bank, and NEXI.

In an era where money is in principle available aplenty from the private sector, a unique core competence of multilateral institutions is their ability to mitigate risks. Yet the World Bank's guarantees barely amount to one percent of its loans and even at the Asian Development Bank, the volume of guarantees is well below 5% of its loans. The willingness of a multilateral to offer PCGs and PRGs is to some degree limited by its statutory leverage guidelines for such guarantees. For example, the World Bank and the Asian Development Bank apply one-to-one leverage to guarantees as they do to loans, without adjusting for evidence that may show that guarantees may be less risky. This restrictive leverage for guarantees limits their guarantee capacity and increases the need for capital before the markets demand it. By contrast, MIGA and IFC use a leverage ratio of four to one, while enjoying the same triple-A rating as ADB and the World Bank. There are also, no doubt, some limits to the market's demand for such guarantees particularly as they are currently structured.

Specialized political risk insurance (PRI) from the private sector insurers provides virtually identical political risk coverage as PRGs,<sup>8</sup> and can be procured from insurers such as Sovereign Risk Insurance, AIG, and Zurich Re. The appetite of private insurers for PRI has been somewhat dampened in the aftermath of the Asian financial crisis as well as other difficulties such as those in Argentina<sup>9</sup> but there has also been some market innovation.<sup>10</sup> As a practical matter, insurer

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<sup>8</sup> These abbreviations are often used interchangeably, although PRI is a term that can be applied to both public and private sector political risk cover whereas PRG is a term typically applied to cover from multilaterals.

<sup>9</sup> Some observers believe that the crises in Asia and Argentina led to a contraction of capacity for political risk insurance from \$1 billion to \$500 million per deal and to a reduction in demand for such cover as lending volumes fell. For example, there has been little new activity in Asia other than restructurings and refinancings. There is market interest for Indonesia, China, Vietnam (for power, oil and gas), and in Mongolia (for mining) but none in the Philippines due to unease about the current arbitration proceedings on the airport transactions.

appetite for providing political risk cover will also be a function of the relative profitability or otherwise of other insurance lines.

While PRI and PRG can provide indemnification against policy risks, the extent to which PRI and PRG was used pre-Asian crisis was modest. The proportion of foreign direct investment (FDI) covered by political risk insurance fell from just under 15% in 1990 to about 9% in 1996. This no doubt reflected the rising confidence in Asian economies especially in China, Indonesia, Thailand and the Philippines, where much of the investment activity was concentrated. The actual level of such coverage provided by the twenty-four members of the Berne Union worldwide fell from \$16 billion in 1996 to \$9 billion in 1997 and recovered to \$16 billion only in 2001.<sup>11</sup> In 2003, it is estimated that \$15 billion to \$18 billion of new PRI/PRG cover was written bringing the total volume of coverage outstanding to approximately \$80 billion at the end of 2003. Of the new cover written in 2003, one half was provided by bilateral sources, 40% by private sector insurers, and 10% by MIGA. Approximately 60% of PRI/PRG was provided to lenders/bondholders with the remainder to equity investors.<sup>12</sup>

Even where such PRI or PRG coverage was in place, lenders and investors often chose not to or were unable successfully to make claims. In the post-1997 period, OPIC paid only one claim of \$295 million for equity invested in an Indonesia geothermal project by Cal Energy through the vehicle CE Indonesia Funding Corp. and MIGA paid another much smaller claim by Enron for the modest development costs of the East Java project. Sovereign Risk Insurance Ltd. had provided and paid an “excess of loss” cover to OPIC of \$72 million out of a total of \$295 million payment related to the CE Indonesia Funding Corp. transaction.<sup>13</sup>

In Asia, there is now greater market interest in PRI/PRG among international banks, particularly for projects in non-investment grade countries. They seek insurance not only from bilateral sources, and multilateral lenders but also from private sector political risk insurers such as Lloyds syndicates (where availability of cover has generally declined in tenor from ten years pre-1997 to seven years), and the current “big three” private sector political risk insurers, namely, AIG, Zurich Emerging Market Solutions and Sovereign Risk Insurance Ltd. The decision regarding what source of coverage to tap, private, multinational, and/or bilateral is largely a function of market supply and demand. Sponsors and their advisors consider the following factors: price, time it takes to negotiate the insurance facility, the benefits in terms of additional funding available with versus without the guarantee, etc. Generally, where private sector lending capacity for countries such as Indonesia, the Philippines, and Laos is limited because (at least in part) of a perception of political risk, a PRI/PRG facility can have the most value to add. Countries that face a difficult task in attracting lenders and investors without PRI/PRG should consider what measures they could take to attract private lenders, which could include predictable and responsible macroeconomic and sector policies, a willingness to honor contractual commitments,

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<sup>10</sup> While the private sector has provided contract frustration cover for a long time, the Asian crisis has led multilaterals to provide similar “four-point” cover and capital market applications such as swap cover by MIGA in Phu My 3.

<sup>11</sup> See 2004 Berne Union Yearbook.

<sup>12</sup> See June 2004, Michael Jordan, “Assessment of the Availability of Political Risk Insurance for Infrastructure Development”

<sup>13</sup> The debt holders were not protected by any political risk insurance and MBIA / ASIA Ltd. took losses as a guarantor of the project bonds.

improvements in the investment climate and to offers of counter guarantee or other assurances or incentives to attract lending and guarantee capacity from such parties as the World Bank and others.

Partial and full credit guarantees are not a substitute for PRI/PRG as they cover different risks. There has been little use of partial or full credit guarantees in Asia. EGAT used a PCG in the form of a World Bank rollover guarantee in 1998 to extend the maturity, raise ratings and reduce financing costs in a benchmark cross-border transaction. Similarly and more recently, IFC provided a PCG to Telecom Asia to extend maturities in the domestic Thai capital market. Monoline financial guarantee insurance companies, virtually the sole source of full credit guarantees have been fairly active in financings for infrastructure in developed countries, e.g, US and UK and in Latin America e.g. Chile but have not yet had a major presence in Asia.

Pooling of project revenue is another promising strategy. For example, in 2004, Hong Kong government pooled cash flows from five tunnels and one bridge to raise funds in the capital markets, adding the security of access to its own revenues to provide additional comfort to investors. Pooling of project revenue streams can attract investors via structured finance products only where regulatory, tax, legal, and accounting and capital markets infrastructure has been developed for securitization. Road King, a company that builds and operates short-haul toll roads in China, provides another example of pooling, a corporation predicated on a business model of investing in infrastructure. Its portfolio approach to infrastructure finance was rewarded with a well-received IPO in Hong Kong.

#### ***1.4.5 What EAP Governments Could Do to Attract Private Financing***

Probably the most important step a country can take to attract private infrastructure investments is to establish predictable policies for the key infrastructure sectors including telecommunications, power, water, and piped gas. Investors are attracted by countries that have demonstrated their commitment to the rule of law in abiding by contracts and that enforce domestically without a reexamination arbitral awards granted overseas, as is required of signatories to the Convention on Recognition and Enforcement of Foreign Arbitral Awards (New York Convention)<sup>14</sup>. Countries can also adopt policies requiring greater transparency with respect to bidding, concessioning, contracting and regulation, with a coincident decline of corruption. To the extent that domestic banks finance infrastructure projects, it is also important to improve the credit culture of banking systems and reduce the extent to which credit is directed to borrowers with questionable creditworthiness by the state. In this context, increasing the effectiveness and promoting the development of local credit rating agencies and use of such ratings in risk management would also be helpful.

Infrastructure development often involves foreign currency financings even when project revenues are in local currencies because foreign financing is needed to procure overseas know-how and equipment and/or because long term financing is only available in offshore markets.

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<sup>14</sup> In EAP, most countries have acceded to the New York Convention. Many Pacific island nations and some others have not done so, including: Fiji, Kiribati, Marshall Islands, Micronesia, Myanmar, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor Leste, Tonga, and Vanatu. To attract investors, such countries might wish to consider signing the New York Convention.

Therefore, tariffs must often be pegged to foreign currencies to cover debt service. There is increased interest in reducing foreign currency exposures through a greater reliance on local currency bank or capital market financing.

The critical step in the development of local capital markets is the establishment of an appropriate legal and regulatory framework to broaden the investor base to include pension funds, insurance companies, mutual funds, etc.; to improve disclosure standards for private placements and public issuance; to strengthen domestic credit rating agencies; to foster utility and municipal bond market issuance and currency and interest rate swaps; and to help extend maturities through innovative use of multilateral and private sector risk mitigation tools. Governments may wish to encourage use of such market innovations to help extend maturities in local market financings as the use of PCGs and committed take-outs, maturity guarantees or puts, etc.

Countries can potentially reduce perceptions of risk by obtaining sovereign credit ratings, which serve to quantify the extent of political and economic risks. Ratings are generally necessary for international capital markets investors. While not necessary for bank financings, country ratings are increasingly being used by international banks in making their credit decisions, particularly on whether they might take on exposures to any given developing country. The benefits of ratings include but are not limited to a broader universe of investors and lenders, potentially a lower cost of funds if the ratings are investment grade, and longer maturities for higher rated countries. Market participants have noted that infrastructure financings are easier for countries that are rated investment grade, which in EAP are China, Malaysia and Thailand, than for those rated non-investment grade, which in EAP are the Philippines, Fiji, Vietnam, Mongolia, Papua New Guinea, and Indonesia (see Table 1). All other EAP countries are currently unrated and could potentially benefit from ratings.

Many countries do not understand fully the critical role of rating even when they have been rated. This is also the case for unrated countries. It is important for EAP countries to learn how to get, keep, improve and use credit ratings not only for bonds and loans but also for equity investments. Official aid agencies –both bilateral and multilateral – might consider providing of financing appropriate training and advisory services on ratings for EAP countries.

## Chapter 2: Overview of Investment Flows into Infrastructure

### 2.1 Sources of Information

We provide an analysis of EAP infrastructure financing from 1994 through mid-year 2004. The analysis includes the following countries: Cambodia, China, Fiji, Indonesia, Kiribati, Lao PDR, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor Leste, Tonga, Vanuatu, Vietnam and Hong Kong and Singapore. The latter two are included as they are important regional markets the first for Chinese and the second for South East Asian financings.

ProjectWare, a subscription service from Thompson Dealogic available to the World Bank, was used to compile the statistics specified for this Paper. Although the definition of infrastructure in this Paper tracks that of The World Bank's *Private Participation in Infrastructure Database (PPI)*, which we assume reflects the World Bank definition of infrastructure, the PPI database does not provide a breakdown required for the Paper of infrastructure financings by type of debt, whether bank loan or bonds as well as currency of the financings and whether the financing was in the international or the domestic markets.

Accordingly, we made the decision to use the ProjectWare database. We have included projects in the four sectors used by the PPI database, namely, energy (electricity generation, transmission, and distribution plus natural gas transmission and distribution), telecommunications, fixed or mobile local telephony (domestic long-distance telephony and international long-distance telephony), transport (airports runways and terminals; railway fixed assets, freight, intercity passenger, and local passenger; toll roads, bridges, highways, and tunnels; seaports channel dredging and terminals), and water (potable water generation and distribution; sewerage collection and treatment).

There are no doubt points of difference between PPI and ProjectWare, which become apparent only when attempting to compare their outputs. . For most countries, the ProjectWare data is lower than for PPI (except for Thailand and Mongolia). PPI also excludes Hong Kong and Singapore as "developed" locales notwithstanding the likelihood that much of Hong Kong investment is probably China related and some in Singapore is South East Asia related.<sup>15</sup> Other points of difference with ProjectWare could arise based on what is considered a private project by PPI, the fact that the PPI counts even cancelled projects if they have reached financial closure and that the investments are counted in the year in which they have been committed. For example, PPI counts multilateral development bank investments fully when committed rather than when paid, except in the case of telecommunications sector. Moreover, PPI excludes sole use facilities unless about 20% of the output goes into to an open market grid.

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<sup>15</sup> For purposes of this Paper, we have included financing data on Hong Kong and Singapore from the ProjectWare database as a significant portion of such financings are probably China related in the case of Hong Kong and South East Asia related in the case of Singapore.

## 2.2 Summary of Investment Flows

ProjectWare shows a total investment in EAP infrastructure of \$148.1 billion<sup>16</sup> for the period 1994 to mid-year 2004. As expected, investment in infrastructure dropped sharply in the aftermath of the Asian financial crisis, reaching a low point in 1999 and recovering thereafter (see Chart 1). The aggregate flows per country for the decade are summarized in Table 2, and are dominated by financings for China (including Hong Kong), Indonesia, Malaysia, Thailand and the Philippines, which account for \$94.4 billion of the total.<sup>17</sup> The currency composition of financings for the five countries is shown in Chart 2. In interesting development is the ability of Vietnam to tap \$2.6 billion virtually all from offshore sources.

**Table 2: Total Private Financing of Infrastructure from 1994 to 2004**  
(\$ 1,000,000's)

Cambodia	75.000
China	36,418.649
Fiji	0
Hong Kong	27,021.636
Indonesia	28,173.183
Kiribati	0
Laos	576.223
Malaysia	21,162.447
Marshall Islands	0
Micronesia	10.600
Mongolia	51.710
Myanmar	29.800
Palau	0
Papua New Guinea	55.390
Philippines	14,421.030
Samoa	0
Singapore	3,038.590
Solomon Islands	0
Thailand	14,473.494
Timor Leste	0
Tonga	4.900
Vanuatu	10.000
Vietnam	2,611.703
	<u>148,134.355</u>

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<sup>16</sup> Amounts are expressed (except when indicated otherwise) in US Dollar equivalent no matter the currency of issuance.

<sup>17</sup> Of the total for these five countries of \$94.4 billion, 14.4% was in local currencies, 78% in US dollars, 5.3% in yen and just over 1% each in pound sterling and in Euro, ECU or other European currencies, such as the Dutch Guilder, the French frank and deutsche mark. Uniquely, Malaysia met the majority of its financing requirements domestically (see Chart 2).

Offshore financing represents approximately 73% of the \$148.1 billion in total flows of \$148.1 billion, with loans accounting for \$119.2 billion, of which foreign syndicated bank loans total US\$ 87.3 billion. Equity flows total \$17.3 billion, of which foreign currency equity accounted for \$14.85 billion. Bonds account for a total of US\$ 11.6 billion, of which bonds in foreign currencies total \$5.9 billion.

### ***2.3 Equity and Return on Investment***

As equity is expensive, it is not surprising that aggregate debt leverage on equity is 7.56:1. Equity investment returns have varied widely but evidence on such returns is anecdotal and thus not definitive. The points of view of two different players are worth considering: the sponsors who are often referred to as strategic investors and private equity investors who are often referred as financial investors. They both seek financial returns measured as returns on investment, which includes any periodic cash received combined with the proceeds of an exit via a sale to another party or through an IPO. The financial investors typically have a ten-year time horizon after which they must return the funds invested plus returns minus fees and expenses to those from whom they raised their investment capital. A strategic investor typically has a longer time horizon though such investors can change their strategies and divest much faster than an infrastructure fund.

In actual practice, the Asian crisis led to substantial under-performance not only for private equity funds but also for sponsors who either withdrew or renegotiated their projects with lower returns. Some funds had negative returns and some projects are said to have been renegotiated down to equity returns in the single digits. Such poor performance of equity returns is one reason for the withdrawal of sponsors and private equity fund investors from the region.

**Table 3: Total Private Financing of Infrastructure from 1994 to 2004**  
**(\$ 1,000, 000s)**

	Foreign Currency	Local Currency	Total
Bonds	5,920.36	5,720.84	11,641.21
Loans	87,316.23	31,867.03	119,183.26
Equity	14,850.61	2,459.28	17,309.89
Total	108,087.20	40,047.15	148,134.36

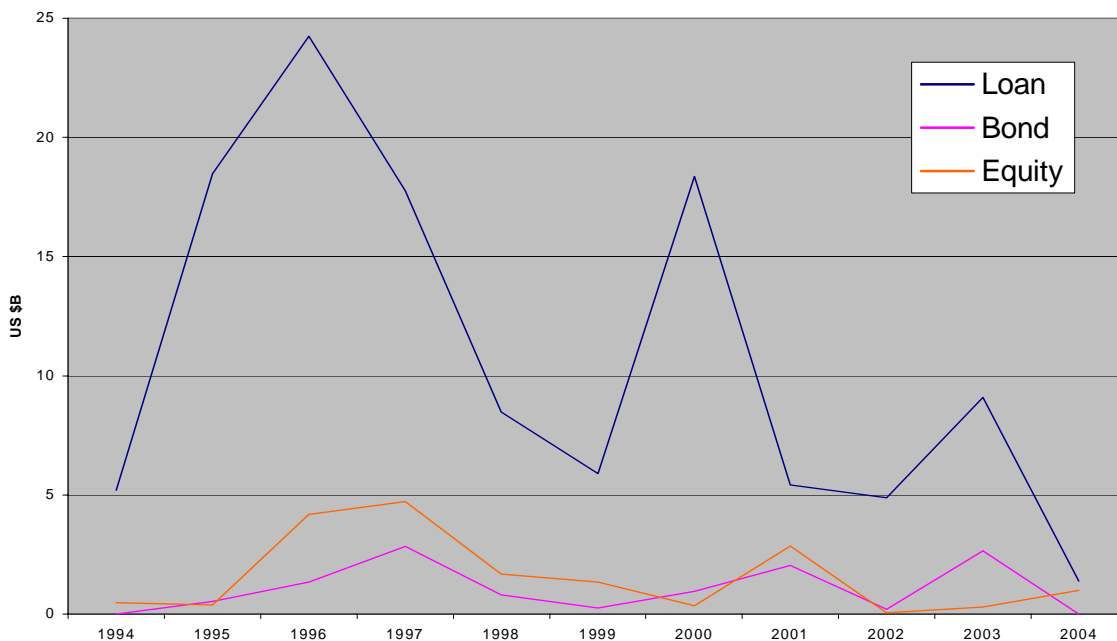
#### ***2.3.1 Private Equity Funds Investing in Infrastructure***

Typically, private equity funds act as fiduciaries, raising capital from a variety of sources including multilateral institutions such as ADB and IFC, government-owned national investment institutions such GIC (Singapore) and EPF Malaysia) and private financial institutions such as AIG.

The funds typically invest in specific opportunities in target markets and sectors and find ways to exit at a profit (or a loss) from the investment during the investment horizon, typically ten years. Private equity investors do not generally find investment time horizons or returns of greenfield projects attractive because they have long gestation periods and typically have returns below

private equity target returns of 20% to 25%. Such funds might purchase existing cash-generating infrastructure assets where profitable exits can be envisioned in the medium term. Some funds have invested in traditional infrastructure projects, including in the pre-crisis period. But most have withdrawn from this sector given poor returns and high risks. Instead, they tend to invest in corporate opportunities characterized by more predictable returns and easier and more profitable exits possibilities. While there have been spectacular success stories in infrastructure investments with project returns in the mid-thirties, there have also been many losses, especially in but not confined to Indonesia.<sup>18</sup> Overall, funds that were invested in the pre-crisis period and were harvested in the aftermath of the crisis probably sustained significant losses. Others seem to be doing better but it is not considered likely that many private equity funds achieved their target returns through infrastructure investments in Asia.

**Chart 1: Total EAP Infrastructure Financing by Instrument, 1994-2004  
(\$ Billions)**



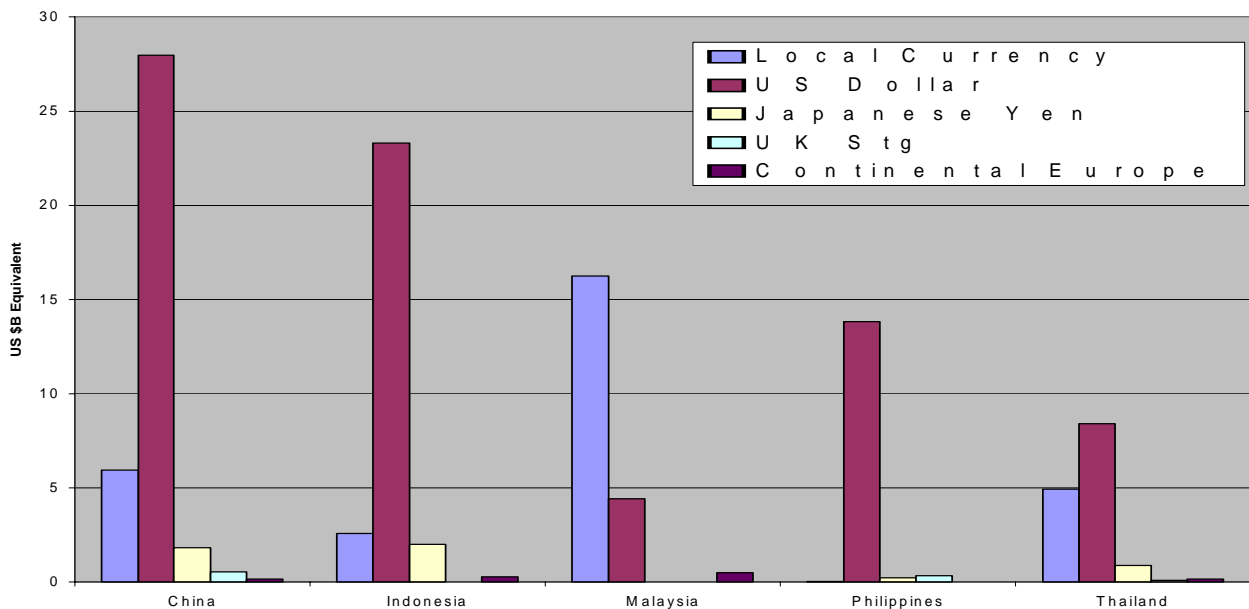
Source: Project Ware

<sup>18</sup> Indonesia dominated credit loss experience as the government-owned offtaker PLN refused to pay dollar-linked tariffs required in Power Purchase Agreements (PPAs) for new power plants after the Rupiah collapsed in 1997/1998. But after six years of negotiations, agreements were reached in 2003 to restructure two of the largest Independent Power Producers (IPPs), namely, the 1220 MW P.T. Java Power (debt of \$1.3 billion) and 1230 MW HT Paiton Energy (debt of \$1.8 billion). Since the Asian crisis, the economy and with it power demand has recovered, the exchange rate has improved and interest rates have come down. The extensions of tenors were modest, the export credit agencies were supportive, and project economics were reasonably attractive even with lower tariffs. Reportedly, provisions against the loans could be partially released. There is still little faith in the legal system and there is frustration with the level of corruption and lack of effective regulation. Toll roads are still hard to do but power deals may find lender interest though energy costs are high and PLN is bankrupt and not bankable. Indonesia needs to improve its regulatory framework and increase confidence in its legal and regulatory system. Although a signatory to the New York Convention for arbitration, the market believes it has rarely enforced any arbitral awards.

### 2.3.2 Sponsor Equity

The other genre of equity investor is the sponsor, who is typically unwilling to discuss returns for public attribution. An investment's realized return is also not known until the project life is completed. As sponsors are regarded as strategic investors, they may accept target returns that are lower than those expected by private equity or purely financial investors, in part because sponsors typically look for synergies with their other businesses to give them cross-selling or other returns in kind. For example, as sponsors, energy companies may seek to supply fuel to the project and major construction companies may seek to be the EPC contractor for the project. Such potential role as a supplier or a contractor may provide additional revenues to the sponsor and enhance otherwise less attractive equity returns.

**Chart 2: Currency Composition of EAP Country Financing, 1994-2004  
(\$ Billions Equivalent)**



Source: ProjectWare

\* Note: Continental Europe currencies include the Euro, ECU, Deutsche mark, Dutch guilder and the French franc

Sponsor equity returns are also subject to risks from such eventualities as expropriation, failure to honor commitments to increase tariffs to recover costs, etc. They can also be affected by economic fundamentals such as sluggish or declining demand, high supply costs, labor strife, terrorism, and other such risks.

Equity return targets for power sector are said to be in the high teens. The water sector returns are probably lower and those in telecommunications sector probably higher but they are difficult to document.

### ***2.3.4 Performance on Infrastructure Loans<sup>19</sup>***

Loan performance is no easier to document than equity return performance. Banks are reluctant to disclose the level of losses and delinquencies on specific loans. While they do report loan performance in the aggregate, they do not tend to break out performance by sector such as project financing nor by country. Information provided by market participants and gleaned from other sources suggest that losses were probably the greatest in Indonesia and in China, the former because of its collapse post-1997 and the latter because of the size of investments in the country and the situational determinants of project success and loan servicing in that country. Lenders and investors in Thailand and the Philippines were likely protected to some extent as project delays deferred the need to lend and invest and by government policies to honor contractual commitments on completed projects.

Bank loan volumes are influenced by perceptions about country risk, capital and provisioning treatment of such loans pursuant to home country bank regulations, market supply and demand factors, and availability of risk mitigation. Policies to influence bank lending could focus on regulatory treatment of project finance loans. Under BIS 2, such loans were to be given onerous capital charges but a concerted effort by banks along with Standard & Poor's provided BIS with some statistical historical evidence of past loan performance which has led BIS to reconsider capital treatment of such loans. A greater effort should be made to collect and disseminate such history of defaults and recoveries so that capital charges reflect actual experience and the effect of risk mitigation in syndicated loans.

### ***2.4 Performance on Infrastructure Bonds***

Moody's Investors Service ("Moody's") first rated project bonds in 1994 and as of summer 2001 it had rated over 240 project bonds in nearly 30 countries. According to Moody's, half the rated project finance issues that came to market in the mid-1990s defaulted, only one held an investment grade rating as of summer 2001 and nearly 70 percent of Asian project debt rated during mid-90s had either been downgraded or had its outlook revised downwards.<sup>20</sup>

The Moody's analysis identifies some further difficulties for projects to access the public debt markets. First, the assessment of risks for such projects is still an "embryonic discipline". Second, as such financings have historically been done in the private markets, there is not a lot of historic performance information. Third, projects as an asset class are heterogeneous, with few projects being alike in structure or purpose, making it difficult to apply lessons from one project to another.

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<sup>19</sup> Based in part on Andrew Kinloch, "Asia Pacific Project Finance: Recent Credit Loss Experience and Lessons to be Learned" in *Journal of Structured and Project Finance*, Spring 2004.

<sup>20</sup> Tom Marshella, "Debt Financing of Projects in Emerging Economies: Lessons from Asia," *The Journal of Project Finance*, Summer 2001.

**2.5 Reasons for Performance Below Expectations**

Projects that performed below expectations from a financial perspective often incorporated risk mitigants such as PPAs and cost recovery mechanisms but such risk mitigation from host governments proved ineffective with economic, financial or political stress. Counterparties who had accepted these risks were either unwilling or unable to meet their commitments. Legal systems failed to enforce contracts when the fundamental economics made them unsustainable. Regulatory approvals that had been considered routine proved to be difficult. Political will that had seemed unshakable when the projects were undertaken vanished with the crisis. Moody's believes that such projects went bad for reasons beyond the structuring of individual deals to the systematic risks in emerging economies as a whole.

**Table 4: Private Sector Project Financings By Instrument and Market  
(\$ 1,000'000s)**

	Total	Bonds F	Bonds D	Loan Fl	Loans D	Equity F	Equity D
Cambodia	.75	0	0	.75	0	0	0
China	36,418.65	1,812.20	603.90	24,493.99	5,336.55	4,172.00	0
Fiji	0	0	0	0	0	0	0
Hong Kong	27,021.64	91.72	38.80	14,885.00	8,758.23	2,790.00	457.89
Indonesia	28,173.18	1,280.00	0	20,985.33	2,523.93	3,314.43	69.49
Kiribati	0	0	0	0	0	0	0
Laos	576.22	0	0	547.223	0	29	0
Malaysia	21,162.45	528.95	4,783.59	3,229.13	10,396.26	1,147.32	1,077.19
Marshall Islands	0	0	0	0	0	0	0
Micronesia	10.60	0	0	0	10.60	0	0
Mongolia	51.71	0	0	51.71	0	0	0
Myanmar	29.80	0	0	29.8	0	0	0
Palau	0	0	0	0	0	0	0
Papua New Guinea	55.39	0	0	55.39	0	0	0
Philippines	14,421.03	2,027.50	0	10,661.56	34.47	1,697.50	0
Samoa	0	0	0	0	0	0	0
Singapore	3,038.59	0	0	2027.00	924.26	0	87.33
Solomon Islands	0	0	0	0	0	0	0
Thailand	14,473.49	180.00	294.55	7,912.49	3,864.72	1,454.36	767.38
Timor Leste	0	0	0	0	0	0	0
Tonga	4.90	0	0	4.9	0	0	0
Vanuatu	10	0	0	10	0	0	0
Vietnam	2,611.70	0	0	2347.703	18	246	0
	148,134.36	5,920.362	5,720.84	87,316.29	31,867.03	14,850.61	2,459.28

## **Chapter 3: Lessons from the Markets**

### *3.1 Situation as of Mid-1990's*

A decade ago, it was thought that Asia's growth potential was virtually unlimited. The region's high growth potential was expected to help the Asian markets attract funds from local, regional and international investors. Infrastructure financings were expected to be both a primary driver and a beneficiary of Asian growth. Indeed, private sector participation through public-private partnerships ("PPPs") had already been increasing under such arrangements as build-own-operate (BOO), build-operate-transfer (BOT), and build-own-operate-transfer (BOOT).

Several factors fostered this optimism. First, South East Asia and China were growing rapidly, with relatively low inflation, low external debt burdens, high levels of international reserves, and large and growing populations with rising incomes and high savings rates. Second, the development of social and economic infrastructure, including housing stock, roads, bridges, airports, railroads, utilities and telecommunications had not kept pace with economic growth. Whereas developing countries worldwide were spending on average 4 percent of their GDP and 20 percent of their total investment on infrastructure,<sup>21</sup> Asia was already outspending them at 5 percent of GDP.<sup>22</sup> Additional outlays of 2% of GDP were considered both necessary and reasonable for Asia to keep pace with the level of its economic activity.<sup>23</sup> Therefore, Asian infrastructure financing over the decade to 2005 was expected to exceed a trillion dollars.<sup>24</sup>

In several countries, local debt capital markets were also emerging with financings for infrastructure projects as well as asset securitization, e.g., in Malaysia, Indonesia, Thailand, Hong Kong and Singapore. However, these local debt markets were nascent, with few investors and issuers, limited yield curve benchmarks especially for the longer maturities, rudimentary legal and regulatory frameworks, inadequate disclosure requirements, restrictive issuing procedures, limited use of ratings, etc. Though local rating agencies were active in several countries including India, Malaysia, Thailand and South Korea, correlations between ratings and issue prices were poor.

### *3.2 Some Trends After 1997*

As the World Bank's Issues Paper of February 2004 notes, these bullish expectations ended with the Asian financial crisis of 1997, reflecting not only the deteriorating financial positions of Asian countries but also the global market conditions for private investments and concerns about social and environmental impacts of large-scale infrastructure projects. Investment in infrastructure projects with private participation in the EAP region fell sharply from since 1997 and have yet to reach pre-crisis levels. Only \$14.185 billion in project finance bonds were issued from late 1995 to early 2002 for Asian borrowers, of which \$ 3.4535 billion were for eleven issues from China, \$1.3 billion for two issues from Hong Kong, \$150 million for one issue from Indonesia, \$300 million for one issue from South Korea, \$ 5,950 million for thirteen issues from Malaysia,

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<sup>21</sup> World Bank Report, 1994.

<sup>22</sup> Asian Development Bank, Annual Report 1993, page 17.

<sup>23</sup> Asian Development Bank, Annual Report 1993, page 19.

<sup>24</sup> CapMAC used an estimate of \$1.3 trillion dollars in 1995 for its business plan for ASIA Ltd. for the following ten countries: China, Hong Kong, India, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand.

**Table 5: Brief Country Report Cards**

Country <sup>25</sup>	Post-Asian Crisis Developments	Outlook and Some Imperatives
China A2/BBB+/ A- \$36.4 billion	Deal economics are key as tariff increases specified in PPAs of several power projects faced with cheaper alternatives did not occur; many defaults on toll road financings; dominance of domestic directed credit (e.g., Nanhai project); a third of infrastructure financing in 2002 by the central government; another third by state owned commercial banks and just over a fifth by infrastructure enterprises owned largely by local governments.	China's size and dynamism make the investment climate attractive; private sector financing (other than via private savings sourced via state owned banks) limited by market perception that in China it is "the rule of man, not the rule of law"; must develop a viable commercial legal system; needs to strengthen domestic banks and develop domestic long term municipal and infrastructure bond markets, rating agencies and possibly financial guarantee companies
Malaysia Baa1/A-/ BBB+ \$21.2 billion	Successful domestic capital markets with a broad investor base, a diversity of debt instruments including infrastructure financings, a successful rating agency finally facing some domestic competition, a successful secondary mortgage market led by Cagamas; and a financial sector that is restructuring and regaining its health; IPPs have a good track record.	Private financing outlook depends on post-Mahatir policy frameworks and business climate; Singapore-based banks are interested to lend; foreign lenders and financial guarantors are cautiously optimistic but profitable opportunities are hard to come by because of robust domestic financing alternatives. Malaysia could serve as an interesting model for other EAP countries.
Thailand Baa1/BBB/ BBB \$14.5 billion	Has successfully emerged from the financial crisis; EGAT honored all PPAs. Toll road and mas transit projects had problems and Hopewell exited from high-speed rail deal. Bangkok Mass Transit system still not well integrated though Skytrain is operating. Domestic banking system highly liquid and able to offer large financings, e.g., BCLP.	Needs significant improvements in policy frameworks, regulation and administrative systems, particularly outside the power sector, to make more projects viable; needs to develop local capital markets including domestic rating agency; need to improve policy framework especially for megaprojects currently under consideration by the government; PRG, PRG and PRI have all been helpful.
The Philippines Ba2/BB/BB \$14.4 billion	Generally respected PPAs; tariffs were high because of oversupply; shortages are developing again but financing outlook is clouded by EPIRA; problematic BOT projects across sectors (water, airport terminal, urban rail transit and toll roads).	Political and regulatory processes do not foster confidence; outlook for financings remains problematic. Need to develop greater transparency in concession-awarding process as well as substantial reforms of policy frameworks and regulations across all sectors to make projects viable. Risk mitigation will be key.
Vietnam B1/BB-/ BB- \$2.6 billion	Phu My 2 and Phu My 2.1 were financed with World Bank loans followed by Phu My 3 and Phu My 2.2 with project financings. IBRD and ADB have provided PRGs and Sovereign Risk Limited was involved as a reinsurer. JBIC has provided direct loans. Sponsors have included regional players such as Sembcorp Utilities of Singapore, Kyushu Electric and Power Nissho Iwai of Japan	Has potential for further private market access with more effective policy, legal, and regulatory frameworks and improved willingness and ability to work with the private sector; attracting private financings has required and may continue to require the use of PRG/ PRI in the medium term
Indonesia B2/B/B+ \$28.2 billion	Largest credit loss experience with PLN refusing to honor some contracts; OPIC and MIGA paid claims on PRI guarantees; but large projects like Java Power and Paiton were successfully renegotiated though with lower returns as deal economics could be restored	Demand has recovered but PLN is bankrupt and not bankable; concerns with corruption, a lack of credible counterparties, a deficient regulatory regime, an unreliable legal system and murky politics cloud private financing outlook though some Singaporean banks are willing to lend; risk mitigation instruments will be crucial.

<sup>25</sup> Ratings are for foreign currency obligations and from Moody's, S&P and Fitch, in that order. The figures show total private sector infrastructure financing volume (domestic and international) from Table 2 in \$ billions 1994 – mid-2004)

\$1,751.5 million for ten issues from the Philippines, and \$780 million for three issues from Thailand.<sup>26</sup> Official lending has also declined, especially in the power sector. Thus EAP infrastructure development has slowed even as population and urbanization have increased, stretching existing infrastructure to its limits.

Both financial and strategic equity investors in Asian infrastructure projects have been disappointed, having seen higher risks and lower returns than the high teens they had anticipated when investing in the heady pre-1997 days. International investors in Asia have included such institutions as AIG Infrastructure Fund and Macquarie Infrastructure Group. Hong Kong-based investors include such diversified investment companies as Cheung Kong Infrastructure Ltd., Hopewell Holdings Ltd., Jiangsu Expressway Co. Ltd., New World Infrastructure Ltd., Zhejiang Expressway Co. Ltd., and Road King Infrastructure Ltd. Singapore based investors include Government of Singapore Investment Corp., Temasek Holdings, Singapore Power, etc.

Among the recent experiences in Asian infrastructure financings noted by market participants are the following:<sup>27</sup>

- Many projects were suspended or shelved post-1997
- “Early mover” advantages failed to materialize
- Capacity produced pre-1997 is just now virtually absorbed
- Governments in many cases reneged on or cancelled the minimum income undertakings they had offered to attract investors, leading to a debate on whether traditional project finance methods are useful for public infrastructure projects
- Many investors reassessed their exposures and rationalized them, selling and/or writing off those considered non-strategic or not performing well
- Some investors diversified away from Asia and Latin America to other markets where they may not have had exposures
- Cash strapped US and European power and energy companies, heretofore project sponsors, pulled back

One important international financial investor expressed the view that strategic investors, many of which have financial constraints, are far fewer and their numbers and commitments vary by sector though their interest is stronger in China. In the power sector, US players are essentially out for a variety of reasons. In Europe, players such as EDF, National Grid, etc. are also essentially out. In the water sector, there have been massive problems for such international investors.

With economic recovery gaining momentum in Asia, market participants expect infrastructure financing activity to rise. New investors have come in to buy out those who wish to exit, e.g. Darby Franklin Templeton Investments bought out Prudential’s mezzanine fund. Domestic funding capacity is rising, e.g., in China and Thailand, where IPO markets offer attractive exit potential. But participation of international sponsors and financiers is still at a low level.

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<sup>26</sup> Mansoor Dailami and Robert Hauswald, “The Emerging Project Bond Market,” World Bank Policy Research Paper 3095, July 2003, Table 6. Data sources they use include issue documents, Bloomberg, etc.

<sup>27</sup> Based in part on Fitch Ratings, “Infrastructure Investments in Asia – An Overview” dated 25 April 2003.

### ***3.3 Some Country Experiences***

While progress has been made since the onset of the Asian financial crisis in 1997, most countries need policy, regulatory, legal and administrative reforms to make it possible to design more viable projects. The most difficult road ahead is for Indonesia where market sentiment is the most negative, followed by the Philippines. Thailand has attracted international financing interest in the power sector but it needs fundamental reforms in other sectors (see Table 5). Three countries deserve a special mention because they illustrate the lessons for EAP countries. The case studies provided below offer additional insights on some of the lessons.

- China faces unique challenges in reducing its dependence on a vulnerable state dominated banking sector;
- Malaysia offers some interesting grounds for optimism on how to develop domestic capital markets; and
- Vietnam offers optimism that a country that historically has not enjoyed market access can attract international private capital, albeit with some political risk mitigation.

#### ***3.3.1 China -- Project Viability and Local Capital Market Development are Critical***

Chinese experience in project financings confirms the proposition that good projects are those that are viable. Deal fundamentals are especially critical in China as there is limited ability to rely on contracts (“rule of man, not rule of law”) should project economics be stressed. The Chinese legal framework is generally considered weak, but international market participants believe that where the business climate is good, especially in and around Shanghai, disputes can usually be resolved quickly and fairly. Market participants also believe that there is a high reliance on relationships and approvals from government officials. The challenges in China remain of (i) developing the commercial legal system and of making sure appropriate approvals of local, provincial and/or national government have been correctly anticipated and obtained and (ii) of strengthening a weak and highly concentrated domestic banking system and of developing capital market alternatives to it.

In the Meizhou Wan transaction, which the Chinese banks have refinanced, the returns have been reduced. Going in, sponsors felt demand was good as they were selling to Fujian Island grid, with little risk of lower cost power from other regions. The capital costs were high but cost recovery had been approved. When time came to approve tariffs, the Pricing Bureau failed to raise rates as promised. The government felt the project’s output was too expensive and it could generate its own supply more cheaply. The project switched to local coal, cancelled its contracts for imported coal, and refinanced its foreign loans with domestic banks.

Although other power deals have worked out, e.g., Hero Asia had weak documentation but the sponsor/offtaker was willing to support the deal, which paid off on schedule, no such financings have been done with foreign sponsors since then despite a booming economy and a growth in generation capacity of 15% in 2003, much of it domestically built and sponsored. China can manufacture 300 MW turbines itself and only needs foreign currency and more expensive imports for technology transfers – e.g., Alstom’s supply of 4 x 600 MW supercritical steam turbines to China Electric Power International and Mitsubishi Heavy Industry’s supply of components for 4 x

1000 MW ultra supercritical boilers to Huaneng Power. Except for LNG and petrochemicals, China may be able to finance infrastructure development domestically.

In Chinese toll roads sector has also had a mixed record with a range of problems: many developers defaulted, some had disputes among sponsors and between sponsors and creditors, some experienced traffic shortfalls from economic downturns or because toll-free parallel roads were built notwithstanding undertakings to the contrary. Many foreign lenders and investors suffered losses. For example, the Greater Beijing Expressway had shareholder infighting. Zhuhai Highway failed the “rate covenants”, and had fraud, leading to default. But more recently, a number of toll road and power generation projects have secured Renminbi financing and China has banned or cancelled some minimum income undertakings offered to attract investors. China is also easing restrictions on foreign ownership in several utility sectors, e.g., power, ports, transport, airports, telecommunications, water supply, sewerage, etc.

China also illustrates the urgent need to reduce dependence on weak domestic banks through development of domestic capital markets. Infrastructure financing in China totaled 1,176 billion RMB in 2002, of which the largest share (33.2%) came from the central government, 31.5% from the Chinese banks (via corporate loans to infrastructure enterprises as well as loans for specific projects), 22.6% from infrastructure enterprises (largely owned by local governments)<sup>28</sup>, 4.7% from foreign lenders and investors, 1.7% from domestic bond markets, 1.4% from domestic equity markets,<sup>29</sup> and 4.9% from other sources.<sup>30</sup> The central government funds sponsor equity investments for infrastructure projects in a broad array of infrastructure projects notably with proceeds from an earmarked portion of regular government bond issues referred to as Long-term Construction Government Bonds. In 2002, RMB150 billion in such bonds were issued. Domestic banks, dominated by state-owned banks, are actively engaged in the infrastructure sector, lending directly for infrastructure projects and indirectly to corporate infrastructure entities. In 2003, the amount of bank financing for infrastructure projects almost doubled to RMB637 billion.<sup>31</sup> Traditionally bank lending for infrastructure had been project specific but more recently banks, concerned about the quality of sponsors and corporate governance, have been more inclined to make directly corporate loans taking into account the types of projects in which the borrower is engaged.

The use of long-term corporate bonds to finance infrastructure would seem a natural fit and help to ease the burden of the domestic banking sector for infrastructure finance. Domestic corporate bonds have also been used by such state-backed companies as the Yangtze Three Gorges Project Co., Zhejiang Expressway Company, a state-backed toll road company, etc. However, at this juncture, domestic corporate bonds provide less than 2% of total infrastructure finance. The corporate bond market in China is at an early stage of development, and needs substantial reforms to build on the interests of potential issuers and the needs of potential investors on the basis of

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<sup>28</sup> It is unclear if these are additional funds or just funds borrowed from banks.

<sup>29</sup> 13 of the 71 A-share initial public offerings (IPOs) in 2002 aggregating RMB 16 billion were for infrastructure-related companies, which accounted for 17% of domestic stock market IPO issuance of RMB96 billion (including IPOs and secondary offerings) for the year.

<sup>30</sup> China Fixed Asset Investment Yearbook (2003), cited in a World Bank paper by David H. Scott and Irene S. M. Ho, “China’s Corporate Bond Market: Creating New Options for Infrastructure Finance”, June 2004. Much of this section on China and Appendix 2 are based on this excellent paper.

<sup>31</sup> 2003 Monetary Policy Implementation Report (People’s Bank of China).

greater disclosure, more credit analysis, and market oriented pricing and timing of issues with a lesser role of the government as a gate-keeper (see Annex 2).

### ***3.3.2 Malaysia – Local Capital Market Development Works***

Malaysia illustrates how a small Asian country can successfully develop a vibrant domestic capital market, like Chile has in Latin America. Malaysia has significant pools of institutional funds looking for attractively priced and rated fixed income instruments, such as Employee Provident Fund of Malaysia as well as other pension funds and insurance companies. It has a successful secondary mortgage finance institution in Cagamas Berhad and a couple of successful rating agencies, with Rating Agency Malaysia having been in business for longer than a decade. It has a range of capital market instruments being issued including corporate and financial institution bonds, structured financings, and infrastructure financings. Though Malaysia does have some capital controls, the legal environment is considered better *de jure* than *de facto*<sup>32</sup> and the country has been unable to establish a domestic monoline guarantee company (though it has been on the drawing board for a number of years) it can generally be viewed as an Asian example of successful domestic capital markets development.

Capital markets have provided financing for infrastructure development. IPPs in Malaysia have had a good track record for timely completion and commissioning and have been financed in domestic debt capital markets to a greater extent than elsewhere in EAP. There have been IPP financings of some \$5 to \$6 billion in 2003, with Tanjong Bin alone accounting for about \$2 billion. The 2003 SKS Power RM 5.6 billion domestic Islamic financing was the largest ever for a single phase IPP in Asia. New water supply privatizations may be put on hold to reassess the sector including the role of Non-Revenue Water. Local lenders are impressed with Tenaga, the principal off-taker, but some may be reaching single risk limits.

The outlook for international financings is positive though foreign market participants see a dearth of profitable opportunities. Some European lenders are taking a cautious attitude waiting to see how the new Prime Minister does, to see some improvements in the legal system and in the foreign exchange controls. On the other hand, some Singapore-based banks are looking for business in Malaysia. One lender is prepared to look at water, petrochemicals and power for the right off-taker but not toll road sector because of traffic risk and concern on corruption.

### ***3.3.3 Vietnam– Market Access with Risk Mitigation and Sovereign Credit Ratings***

Vietnam is rated B1/BB-/BB- (below the Philippines but above Indonesia) and provides an interesting example of a country that did not have access to international credit markets but has recently set about getting it. It may be poised to attract substantially more financing if it develops an effective policy, legal and regulatory framework to attract private sector investment. Its banking system is state controlled, like much of the economy. Market participants believe that it is difficult to do business in Vietnam as officials are not used to dealing with the private sector but once they get on board they tend to keep their part of the bargain.

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<sup>32</sup> For example, even though enforcement can be faster and documentation may be better than in Indonesia, it is often hard to find pledged assets, which may be held under different names.

Recent transaction shows how risk mitigation from bilateral and multilateral sources has opened up access to private sector financings. The country also benefits from interest on the part of regional sponsors. Phu My 2 and Phu My 2.1 were financed with World Bank loans, followed by Phu My 2.2 and Phu My 3 with project financings. Phu My 2.2 is sponsored by Électricité de France (EdF), Sumitomo Corporation and Tokyo Electric Power Co. (Tepco). IBRD and ADB provided PRGs with the latter being fully reinsured by Sovereign Risk Limited as ADB was at that time not able to provide PRG on its own balance sheet. JBIC provided direct loans but as it replaced an ECA that could not come in, there was no NEXI guarantee. British Petroleum (BP) was contracted to provide gas. In Phu My 3, the sponsors are BP, Sembcorp Utilities of Singapore and the joint venture of Kyushu Electric Power Co and Nissho Iwai of Japan each taking one third participation.

SCIC believes that Vietnam can increase its market receptivity with better use of its ratings. The graduation from multilateral and bilateral financings to private sector financings has clearly begun and has required the use of risk mitigation instruments. If Vietnam educates itself on how to use ratings, it can tap increasingly wider investor base and attract both bank and capital market funding. Other countries like Lao PDR and Cambodia could also consider obtaining and carefully using credit ratings to influence market perceptions of risk and pry open investor interest where possible. The benefits of a sovereign credit rating and the criteria that must be addressed in seeking them are summarized in Annexes 3 and 4.

### *3.4 Two Case Studies*

We have reviewed ten infrastructure cases and present two in this Chapter, both in the power sector, to make the comparison more meaningful (see Annex 5 and Boxes 1-8 for the rest). The sponsors have reviewed the write-ups and the projects have also been discussed with some of the banks financing the projects, including the arranging banks.<sup>33</sup> The first project is in China with international sponsors who restructured the project financing replacing foreign coal suppliers with domestic ones and foreign banks with domestic banks. The project's tight documentation did not protect it against unsound economics and the project was successfully restructured to be more viable. The second project is in Thailand and involves regional sponsors who undertook interesting risk mitigation to achieve their financing objectives. While the project is not constructed, it illustrates the evolving roles of regional banks and sponsors and their ability to innovate to meet financing objectives where the underlying project is sound.

#### *3.4.1 Meizhou Wan Power Plant in China – Fundamentals Matter*

**Description:** Domestic refinancing of offshore foreign currency debt for 724 MW (net) coal fired power plant located in Fujian province of China.

**Summary:** Meizhou Wan was the first wholly foreign-owned power project to be approved by the State Planning Commission and the first large private power project in Fujian province. The project originated in the early 1990s when the Fujian Provincial Government began discussions with the Lippo Group, an Indonesian and Hong Kong conglomerate involved in real estate development, banking and finance with strong ties to Fujian province. Following signing a

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<sup>33</sup> Sponsors reviewed presentation of cases and commented where appropriate

Memorandum of Understanding with Fujian Provincial Government in 1994, Lippo brought in as additional sponsor Edison Mission Energy, Sembawang Engineering, and Bechtel Enterprises Inc. InterGen (which had been acting on behalf of Bechtel Enterprises) formally entered the project in 1996 by assuming the development positions of Bechtel Enterprises, Sembawang and Edison Mission Energy. InterGen is an international power developer owned by Bechtel Enterprises Inc and Shell Generating Limited. Subsequently, Edison Mission Energy and Sembawang Engineering pulled out and in early 1998 InterGen assumed majority ownership (75%) of the project company with the purchase of an additional 30% interest in the project. ADB purchased a 5% interest from Lippo, whose holdings dropped to 24.5%. InterGen sold down shares to El Paso in October 1999. The current ownership is InterGen 45%, Lippo 25%, ADB 5.2% and El Paso 24.8%.

The project was originally financed in 1998 with a combination of equity and bank debt. Total project cost was US\$755.2 million with US\$188.8 million representing equity and the remainder debt. The 12.25-year term debt financing was in six tranches with ADB providing a total of US\$190 million (US\$40 million direct loan and US\$150 million via co-financing). ECAs of France (COFACE) and Spain (CESCE) lent US\$52.7 million and US\$75.7 million respectively, and a syndicate of twelve banks led by Bank of America, BNP Paribas, CSFB, and Tokai Bank (now UFJ Bank) provided a total of US\$248 million of which US\$30 million was a working capital facility.

Aside from being China's first wholly foreign-owned power plant, the 1998 transaction is considered noteworthy because it was successfully consummated at a time when the Asian syndication market was contracting as a result of the financial crisis and incorporated international standard contractual agreements and financing documentation, a landmark for China at the time. Construction commenced in 1998 and the plant became operational in 2001.

Pursuant to a PPA, all output is purchased by the Fujian Electric Power Company Limited, in its first experience with purchasing privately produced power on internationally accepted terms. The original tariff formula was subject to an annual review and provided a cost-plus basis to ensure recovery of approved capital costs, a pass through of fuel costs, coverage of operating costs, debt service, and a profit component for equity. The tariff formula also included some indexation to reflect foreign currency costs. Upon the maturity of the PPA, ownership was to revert to a PRC Government-designated entity.

However, soon after the project completed testing in 2001, the project and the provincial authorities began discussions on the implementation of the tariff formula. The estimated average tariff for the life of the project was forecast at approximately 54 fen/kWh. The first year's tariff was submitted in accordance with the formula prescribed and provincial authorities debated the inputs, calculations and commercial operations of the project. The discussions over the appropriate tariff led to a series of interim agreements that provided for a reduced tariff pending a renegotiation of the PPA. All interim tariffs were less than the tariff submitted by the project. While exploring options to restructure the existing loan agreements through the appointed advisor, Société Générale, the sponsors have continued to meet all of their obligations. Additionally, the project restructured its cost base including a change to domestic coal supplier. No payment default occurred on international loans. The solution was a restructuring loan of US\$535 million equivalent in Renminbi by a group of seven Chinese banks led by Bank of China,

which underwrote 50% of the loan. Completion of the domestic refinancing and simultaneous repayment of foreign loans is expected to occur in early July 2004. The loan is comprised of two tranches: a long-term facility of 15 years, with a three-year extension option and a three-year working capital facility. The project is able to take advantage of the interest rates allowed by the Chinese central bank and given surplus domestic liquidity there are minimal front-end fees. As the project is operational, there is no construction risk. With a financing entirely in Renminbi, foreign exchange risk is also eliminated. The cost of the new loans is lower than that of the offshore loans. This has helped the project to survive notwithstanding lower than expected demand, tariffs and the potential adverse impact of the reorganization of the power pool in China in which less expensive power is expected to prevail.

**Meizhou Wan's Lessons:** Meizhou Wan documentation was done well and was probably as close to best practices as possible for China at the time. However, the project experienced difficulties because power it generated was expensive and considered unaffordable. The key lesson is that optimistic demand and tariff assumptions should be avoided as there is the possibility of an unwillingness by the authorities to raise tariffs as contractually required to cover costs and provide an adequate return when demand falls, especially when cheaper alternative power is available.

### *3.4.2 BLCP Power, Thailand – Risk Mitigation Facilitates Financing for a Viable Project*

**Description:** \$1.05 billion equivalent multi-currency, multistage, non-recourse Greenfield IPP financing. Coal fired power plant comprising two separate 717 MW facilities at Map Ta Phut, Rayong Province, Thailand, of critical importance for the Thai electricity market.

**Summary of Financing:** The project was one of the seven IPP programs initiated in 1994 by the government of Thailand. BLCP was first awarded a PPA by EGAT in 1997 but the Asian financial crisis delayed the project for four years. BLCP was the largest non-recourse debt deal for a Greenfield IPP since the crisis in 1997 and at a 15 year and 7 months term was the longest tenor to date in Thailand.

The 25-year PPA with EGAT required financial closure by October 1, 2003 or EGAT could terminate the PPA, with no penalty. A further delay of the project was considered in 2002 but power demand rose sharply in early 2003, requiring this new capacity.

The major project contracts, including the PPA and the EPC related contracts, are in dual currencies -- US dollars and Thai Baht. Given the 75% indexation for availability payments in the PPA, appreciation of the Thai Baht posed a significant risk, as revenue would decline if the Baht were to appreciate. Accordingly, a dollar debt component was deemed prudent. However, offshore lenders required political risk cover. MIGA could not offer its cover because of its reluctance to approve the project without knowing the outcome of an environmental study undertaken by the govt. of Thailand in the Map Ta Phut area. Private sector political risk cover was not available in sufficient size and also did not offer the AAD cover as EGAT's obligations are not those of the sovereign government. Therefore, it was necessary to blend private sector cover with a partial risk guarantee from ADB and a guarantee of NEXI. In the end, the total

funding mix, including equity, is about 75% in US dollars virtually matching the dollar indexation.

With the October 1, 2003 deadline approaching, a Thai Baht denominated loan was arranged with a syndicate of Thai Banks. This 15 years 7 month term loan closed on August 13, 2003 with a rate that was partly fixed for five years and floated with the average Minimum Lending Rate of Thai banks thereafter. Also closing on the same date was a \$190 million offshore dollar debt tranche arranged by five international banks with private sector political risk insurance provided by AIG, Zurich, and Sovereign providing political risk cover for 70% of this amount and leaving the lender to take pure Thai risk for the remainder.

The third stage closed on February 4, 2004 and brought in ADB with a direct loan of \$40 million as well as \$70 million of political risk insurance. The ADB umbrella was sufficient to bring in four additional international banks.

The fourth stage closed on March 30, 2004 and brought in JBIC and NEXI. With this stage, JBIC provided a direct loan of \$245 million equivalent and NEXI guarantees of \$163 million. More could have been had from NEXI but Thai banks were not willing to reduce their stake further.

The third and fourth stages each replaced a portion of the Thai Baht financing as well as the first offshore tranche. With sufficient public sector political risk cover from ADB and NEXI, it was no longer necessary to keep the private sector PRI. The third and fourth stage financings are in floating rates dollars indexed to Libor. The project sponsors have already swapped the floating rates to fixed rate loans.

**CLP Holdings Limited (CLP) and Banpu Public Company Limited (Banpu):** Sponsors on 50/50 basis. The CLP Group is a Hong Kong based company with a focus on the electric power businesses. Banpu, a Thai company, is the largest coal producer and distributor in the country. The sponsors have extensive power development experience, with strong relationships with Thai and offshore banks. Equity is back-ended, which gives IRR a boost.

**ABN Amro Bank and Finansa Securities:** Co-financial advisors appointed by BLCP.

**EGAT:** Offtaker pursuant to a PPA, which includes an availability payments indexed to dollars to provide sufficient debt service coverage and energy payments that pass through dollar fuel costs. The tariffs thus take sufficient account dollar liabilities.

**Mitsubishi Corporation:** EPC Contractor pursuant to a dual currency denominated EPC contract

**Risks:** (1) Concession risk. If financing were not in place by October 1, 2003, the PPA from EGAT would have lapsed with no penalties payable by EGAT. (2) Currency risk. The first financing arranged in August 2003 was denominated entirely in Thai Baht, which would have exposed BLCP to a currency mismatch during to the extent that its payments pursuant to the PPA are indexed to US dollars. (3) Interest rate risk. This remains given the current lack of fixed-rate Thai Baht financing beyond five years. There was also interest risk on the US dollar financing facility but that has been swapped out for the tenor of the financing. (4) Political risks. Foreign

lenders were not willing to take totally uncovered exposure to Thailand, without a PRI covered element.

**Mitigation of Risk:** Obtaining all Thai Baht financing well before the deadline resolved the first risk, that the PPA contract would be voided if the financing transaction did not close by October 1, 2003. This option was chosen because multi-lateral and bi-lateral lenders and providers of political risk cover, namely ADB, JBIC and NEXI required a longer approval process. The second risk, the currency risk of an all Thai Baht financing package was mitigated by replacing a portion of the Thai Baht denominated debt with the first US dollar bank facilities from international commercial banks within minutes of the first closing. This first dollar financing was attracted with private political risk insurance covering 70% of the risk. The private political risk facilities were subsequently replaced with ADB partial risk guarantee and NEXI guarantees. Additional international commercial bank financing in dollars became available when this combination of multilateral and bilateral political risk cover fell into place in March and April of 2004. Third, interest rate risk continues to be an issue given the lack of fixed rate Thai Baht financing beyond five years. Though the US dollar loans are largely indexed to Libor, sponsors have fixed the rate through swaps.

**BLCP's Lessons:** This case demonstrates how risk mitigation can help when the basic project is economically sound and has strong sponsors. First, the sponsors showed considerable financial ingenuity by getting all Baht financing in place before EGAT's deadline on the PPA. Second, the currency risk was largely mitigated as the extent of indexation in the availability payments roughly matches the currency composition of the total financing, including equity. Third, interest rate risk remains an issue with respect to Thai Baht portion of the debt and is currently hard to remove, though the sponsor has received some offers of fixed Baht for ten years and is prepared to consider a domestic bond issue after construction is complete and cash flow is being generated. Finally, political risk remains an issue for future financings as private sector capacity for Thai risk is quite limited. While ADB and NEXI both came in eventually, they did take six to eight months longer. Moreover, ADB's B loan was not considered sufficiently attractive to obviate the need for its partial credit guarantee.

It is useful to note the different perspectives of the Thai and the foreign banks. While Thai banks know and were willing to take the Thai political risk, foreign banks were unwilling to do so in size for these tenors, even though Thailand is rated investment grade. The willingness of the Thai banks to come in for the full amount of the financing made it possible for the EGAT deadline to be met. They were able to reduce their exposures somewhat within minutes. Had the sponsors relied on foreign financing to be available on time, they would have missed the EGAT deadline. The inability of multilateral and bilateral providers of political risk cover and financing to move with a market sensitive timing not doubt had its costs for the sponsors. While Thai banks are currently highly liquid, this was a very large financing for them and it is unclear if transactions of similar size can be easily accommodated if credit markets domestically become less liquid.

### *3.5 Key Lessons are Borne Out in Other Projects*

Beyond project-specific lessons is an overarching observation on how the general business climate influences international investment decisions of project sponsors and financiers. Before

the Asian crisis, stock prices were high worldwide and emerging markets investment was soaring, dazzled in part by the “Asian miracle”. This all changed after 1997. The Asian crisis, quickly followed by the collapse of Russia, and Brazil, and Argentina, led investors to withdraw from emerging markets. Developed countries had their own problems: the dot.com bust, the US and European corporate scandals, (including Enron, a major international sponsor), contributed to the stock market decline of the early 2000’s.

Just as exuberance led to over-investments pre-97, the shocks that followed led investors to bolt. Some may never return and all will be much more careful for a while now, focusing on the deal fundamentals. Regional sponsors have stepped into the void and while they are building momentum and may have different and perhaps more informed perspectives on Asian risks, they have their own vulnerabilities -- less experience, transparency and resources, both financial and technical. Both international and regional investments will likely look for better project fundamentals, sound sector policies and better risk mitigation.

One major lesson we draw based on Asian experience with project financings over the last decade is that economic fundamentals are vital to the success of projects. From the two cases presented fully herein and eight cases summarized below and presented fully in Appendix 1 economic fundamentals can help keep parties together through tough times:

- Hero Asia: Notwithstanding relatively loose documentation, the Rule 144A international financing was paid off in full and on time because the project fundamentals were sound. The issue even attracted a monoline guarantee in a secondary trade.
- Manila Water / Maylinad: Choice of experienced concessionaire led to Manila Water being successful. However, an inexperienced sponsor in Maylinad led to an unsuccessful outcome where the public sector entity in essence needed to reverse the privatization exercise. Unrealistic pressures to keep post-privatization prices low probably led to the poor choice of the second concessionaire. Contract terms were not sufficiently clear on disallowances and penalties.
- Paiton 1 and 2: Though PLN did not abide by contractual obligations, positive project fundamentals were ultimately reflected in successful restructurings rewarding the persistence and patience of the sponsors, the banks and the government.

If the project is fundamentally viable, risk mitigation can make it stronger. The following examples demonstrate that the use of risk mitigation strategies such as a World Bank PCG, OPIC liquidity facility to cover devaluation risks, co-guarantees by a partnership between a monoline and a multilateral development bank, pooling and diversification strategies and the use of quasi-municipal financings can make viable projects easier to finance. The advantages of such risk mitigation include lower costs, longer maturities, and access to debt and equity capital markets.

- EGAT’s World Bank guaranteed bonds make it possible for the company to do a ten year, attractively priced issue in 1998 with a higher rating than the sovereign and at a lower cost than without the guarantee
- AES Tiete (in Brazil) took advantage of a \$30 million OPIC liquidity facility to cover devaluation risk but this financial innovation did not protect against poor operating

performance arising out of shortage of rainfall and the resulting rationing of power. OPIC also provided an \$85 million in inconvertibility insurance.

- Rutas Del Pacifico Toll Road Project demonstrates the ability to tap local currency markets for a 23 year financing rated triple-A on the basis of co-guarantees by two triple-A rated guarantors: Inter-American Development Bank and Financial Security Assurance.<sup>34</sup>
- Hong Kong Link 2004 Ltd: A municipal revenue bond-like financing shows the ability to raise funds in the capital markets with a pooling of revenues from five tunnels and one bridge and with recourse to Hong Kong government purse. Monolines were unable to add value as the issue was finely priced.
- Road King: Importance of viable toll road projects and the pooling cashflows from many projects to reduce risk. Successful exit for investors via an IPO.

### ***3.6 The Future -- Back to Credit Fundamentals and to Risk Diversification***

In the mid-1990's there was optimism that PPPs and non-recourse project financing techniques, looking solely to the revenue stream of the project to pay debt service, would blaze a new path to capital market financing of infrastructure projects. Problems that have hampered non-recourse project financings include:<sup>35</sup> absence of dependable revenue streams to back debt securities, unsuccessful privatizations, lack of consensus on the role of the private sector leading to disagreements on contractual arrangements about price, cost recovery and rates of return, duration mismatch between project life and available funding, leading to refinancing risk, and in the case of the smaller countries, lack of a significant project pipeline of projects, limiting interest to those willing to consider one-off transactions in small jurisdictions.

Experience has shown over the last decade that PPPs in the form of project financings were riskier than traditional asset securitizations for two fundamental reasons. First, the public partner can, has and will continue to change its mind about public policy objectives, its regulatory framework and permitting the private partner to meet its return objectives, particularly in difficult economic times. Second, unlike mortgage, credit card or auto loans, traditional project financings are exposed to large single risks, often depending on the performance of single or a few assets or facilities. Pooled project financings may offer some potential in the future but to date they have been difficult because there has not been a large enough database from which to derive statistically meaningful default and recovery data for project financings and formulate reasonable assumptions about future outcomes.<sup>36 37</sup>

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<sup>34</sup> The Chilean SVV Project entails a 23-year toll road financing in the local Chilean markets for an amount equivalent a little over \$300 million. IDB is the "guarantor of record" and through novation, offers the transaction to the "co-guarantors". As the guarantees are several, rather than joint and several, the guaranteed issue is "two name" paper.

<sup>35</sup> See Fitch Ratings, "Reemergence of Infrastructure Finance in Emerging Markets". June 12, 2001.

<sup>36</sup> See Fitch Ratings, "Public-Private Partnerships: The Next Generation of Infrastructure Finance", January 14, 2003.

<sup>37</sup> S&P has developed with major banks a multi-bank database on recovery rates for project financings, which has been presented to the BIS for purposes of getting better capital treatment. S&P is looking for a partner with whom to work on making such information available to the market place and is willing to discuss such collaboration with the World Bank Group.

As a result of the project finance experience of the last decade in Asia and elsewhere, it is clear that lenders and investors will rely to a greater extent on balanced assessments of contractual protections that underpin non-recourse project finance and those of credit fundamentals either of strictly corporate and utility risks or of strictly sovereign or municipal borrowers. This is a healthy development because contracts can offer limited protections when credit shocks knock away the protections provided by the presence of sound corporate, utility, sovereign or municipal credits. Gains can also be made through risk diversification and securitization.

### ***Chapter 4: Improving Risk Segmentation, Allocation and Mitigation***

#### ***4.1 What are the Risks?***

There are two major types of infrastructure related transactions. The first is that of an infrastructure initiative being financed by an operating company, such as the Electric Generating Authority of Thailand. The risk here is tied to the credit of the operating company and the credit may be enhanced in any one of a number of ways including sovereign guarantees, multi-lateral and other credit support. The second and more prevalent type of infrastructure financing is commonly referred to as project finance. Project finance is typically executed by special purpose vehicles (SPV) on a BOT or BOO basis that is structured to be non-recourse to the sponsors, who in turn may be global power companies, construction companies, etc. Since holders of debt issued by the SPV must look solely to the revenue stream of the project, a clear understanding of the risks and the mitigation of risk to the extent feasible and economical are especially critical. Whether the infrastructure initiative is undertaken through an operating company or in the form of a project financing, the most common concern for debt holders typically is credit risk, which relates to the willingness and ability of the obligor, whether corporate, individual or governmental, to repay its debts on time.<sup>38</sup>

There are many ways to segment and describe risks related to infrastructure transactions in general and project financings in particular.<sup>39</sup> It is convenient for purposes of this Paper to think of project risks as being mainly the following: construction risk, operating risk, market risk, interest rate risk, foreign exchange risk, service payment risk, regulatory risk, and political risk. By segmenting them, one may assess them more systematically and determine what risks can be mitigated through sounder structures and/or external third party risk mitigation instruments, such as guarantees.

#### ***4.2 Counterparty Risks***

Whether an infrastructure financing is dependent on the full faith and credit of an operating company or a project financing done on a non-recourse basis to the sponsor, there is generally the risk that one or more of the entities associated with the project may not perform. The risk of non-performance of such an entity, for example, because the counterparty has become insolvent, is referred to as counterparty risk. It is in essence the credit risk of the counterparty defaulting, and is frequently assessed with reference to the ratings of the counterparty. Many of the risks defined below entail exposure to counterparty risk to the extent that there is the risk that the counterparty fails to meet its obligations.

Failure of counterparties to perform has been one of the biggest reasons why investors have been burned. As infrastructure financings often involve a relatively small number of players with

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<sup>38</sup> See Mahesh Kotecha, Chapter on “The Role of Financial Guarantees in Asset-Backed Securities,” in Fabozzi, Frank J., ed., *Issuer Perspectives on Securitization*, 1998, also his Article on “The Role of Financial Guarantees in Securitization” in *Housing Finance International*, September 1996 and his Chapter on “The role of insurance in asset-backed securities” in IFR Books, Helen Morrissey, ed., *International Securitization*, 1992.

<sup>39</sup> For example, see Chapter 6 by Montek Ahluwalia, “Financing Private Infrastructure: Lessons from India” in *The World Bank, Choices of Efficient Private Provision of Infrastructure in East Asia*, edited by Harinder Kohli, Ashoka Mody, and Michael Walton. August 1997. Ahluwalia uses the following categories: construction risk, operating risk, market risk, interest rate risk, foreign exchange risk, service payment risk, regulatory risk, and political risk.

significant roles in the financings for long periods of time, counterparty risks are high and are virtually impossible to eliminate.

To the extent that a counterparty to which the project is exposed is weak, there is risk that it will not fully perform its obligations. If the reduction of this risk of non-performance is critical, risk mitigation is provided through credit support from stronger credits.

### ***4.3 Sovereign or Political Risks***

We distinguish several levels of sovereign or political risks. First, there is the exposure to fluctuating foreign exchange rates, as in the case of a devaluation of the currency of the country where a foreign currency investment is serviced only with local currency earnings. This is discussed under a separate heading below. Second, there can be concerns about the political stability, the level of corruption and transparency of a country and the soundness and sustainability of its macroeconomic policies that influence inflation, fiscal and balance of payments deficits, external indebtedness, etc. These political and economic risks are sometimes measured by sovereign credit and / or governance ratings. Third, there are the “traditional” political risks related to the possibility of appropriation, nationalization, inconvertibility, war, terrorism, etc.<sup>40</sup> which, along with breach of contract, can be covered if necessary with PRI. Fourth, less egregious but still very potent regulatory risks include creeping expropriation through contract frustration or abrogation, adverse changes in taxation<sup>41</sup>, or lack of enforcement of provisions for rate increases to recover cost, promises to limit new licenses and other regulatory risks which can alter the level of competition and the project’s operating environment and thus the certainty and quality of its cash flows. To some extent, these regulatory risks can also be insured against via political risk or partial risk insurance. Fifth, one may also add legal risks, such as inadequate protections for physical, movable or intellectual property, inability to perfect security interests, inadequate mechanisms to establish and operate special purpose investing or borrowing entities, inadequate bankruptcy and foreclosure laws, inadequate de facto or de jure protection of foreign investors in local courts and unwillingness to submit to international arbitration.

As noted, sovereign and political risks can be mitigated to some extent through PRI. The typical coverage includes appropriation, nationalization, and inconvertibility but it may be possible to obtain coverage for war and, to a limited extent, terrorism. A policy could cover, for example, government “misbehavior” risks including but not limited to: unilateral rescission of contract, frustration of contract, withdrawal or non-renewal of license, modification of legislation, non-convertibility or non-transferability of currency, unwarranted or abusive call of guaranty, confiscation or seizure or embargo or dispossession or expropriation of the project or assets or their associated cash flows, etc. Such cover may exclude credit events, including insolvency, court ordered recovery or liquidation, any fluctuation of exchange rates or of monetary policy, any event of nuclear origin, war (declared or not) between two or more of the five big powers (USA, Russia, China, France, and United Kingdom), risks of kidnapping or ransom, etc.

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<sup>40</sup> See a paper by Shawn Johnson entitled “The Chad/Cameroon Petroleum Pipeline: The World Bank in Emerging Market Financing and a Signpost After September 11”, published by the Johns Hopkins Political Science Department in *The Hopkins Diplomat*, Spring 2002.

<sup>41</sup> For example, Colombia’s Resolution 34 imposes a special tax on electricity generating companies and is viewed by market participants as tantamount to “creeping expropriation”.

### ***4.3.1 Contracts, Dispute Resolution and Arbitration***

Project operations and economics are governed by a complex set of arrangements and contracts with respect to the concession and the financing.<sup>42</sup> Governments and corporate entities act as counterparties with duties and responsibilities that must be performed for the project to be successful. The enforceability on a timely basis of the contractual obligations of the parties is subject to many uncertainties, including whether the contracts are clear, the parties work together in good faith, whether there are political pressures on some parties to renege on their obligations, etc.

Investors, therefore, feel more comfortable if their contractual rights are protected through prior consent to use dispute resolution processes in neutral international (rather than local) jurisdictions whereas local partners may prefer dispute resolution in the local jurisdictions where they may have some influence. Some market participants believe it would be beneficial to promote systematic and effective legislation to enable external judicial and arbitral settlements to be enforced domestically, e.g., through adherence to the New York Convention and the systematic entry into Foreign Judgment Enforcement Conventions with all capital-surplus countries. One market participant indicated that the World Bank Group's arbitration mechanism, International Centre for Settlement of Investment Disputes (ICSID), after being on the sidelines for nearly three decades<sup>43</sup> is gaining in popularity and witnessing a rising number of cases, especially those where one of the parties to the dispute is a sovereign government.

### ***4.3.2 Regulatory Risk***

Regulatory risk arises because infrastructure projects, whether project financings or undertaken under the aegis of an operating company need to be involved with various regulatory authorities during the life of the project which exposes the project to the risk of adverse regulatory action. Regulatory authorities can reject tariff formulas ensuring adequate cash flow during the life of the project. Project completion and operations can be delayed through challenges to the environmental clearances for the project and once operating, a change in environmental standards can add cost to the operation which may or may not be able to be passed on to rate payers.

While the best mitigant for regulatory risk is a regulatory authority that operates with maximum transparency within a system of laws that provides some recourse against arbitrary action such may not be the case in emerging markets. Given the blurring of the line between sovereign risk and regulatory risk, PRI and PRG may in fact mitigate regulatory risks. .

## ***4.4 Commercial or Project Risks***

Commercial or project risks can cover a range of concerns including the economic or financial viability of a project, loss due to catastrophe, project completion risk, performance of third parties

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<sup>42</sup> For an overview, see the section on the importance of investor protection in Chapter 6, "The Challenge of Financing Infrastructure in Developing Countries," in the *Global Development Finance Report 2004*,

<sup>43</sup> ICSID was established in 1966 and is an autonomous international organization with close links to the World Bank. Once the parties have consented to arbitration under ICSID, neither can unilaterally withdraw its consent. Moreover, all ICSID Contracting States, whether or not parties to the dispute, are required to recognize and enforce arbitral awards.

(such as a power purchaser or fuel supplier), accounting risks (e.g., risk of marking illiquid investments to market) as well as the credit risks in debt financings where the obligor may or may not have the capacity to repay the debt in full as promised.

#### ***4.4.1 Completion or Construction Risks***

A project that has been conceived, designed, sponsored, approved by the authorities and financed must still be constructed by a certain date. Construction risk refers to developments during the construction period that lead to time or cost overruns and/or possibly changes to the specifications that may lead to operating parameter shortfalls. The capital-intensive nature of infrastructure related financing coupled with a long construction period make such financings susceptible to delays and cost overruns.

The completion risk is thus simple to define. It is the risk that an otherwise well conceived and executed project fails to be completed for any of a range of possible reasons and thus fails to generate any cash flow. A related risk is that the project is completed but that it experiences delays that result in the postponement of the generation of cash flows.

Completion risks can be reduced through a variety of means. One such method is to shift a portion of the construction risk to contractors through engineering, procurement, and construction contracts (EPC) that carry penalties for delays and or performance shortfalls. It is important to note that construction risk can be reduced through EPC contracts but not entirely eliminated since penalties typically are capped.

It goes without saying that the obligations pursuant to an EPC contract are only as good as the credit of the construction company. Accordingly, the reputation and experience of the construction contractor are of utmost importance.

#### ***4.4.2 Operational and Supply Risks***

Once the project has been built and is operational, it may face a variety of operating problems that may cause the level of production or its quality to suffer below levels projected by investors. This could arise from labor strife, financial problems, equipment failures, or natural disasters.

Operating risk is lowest for projects employing a tested technology. Operating risks can and are typically mitigated first through careful selection of the operator and/or maintenance contractor as well as contractual provisions that include payment of liquidated damages should the project operations fall below levels anticipated. Moreover, many operating risks underlying *force majeure*, which can excuse performance and hence contractual obligations when the responsible parties are confronted with circumstances outside of their control, are insurable and while adding cost to the project, the insurance may be well worth the cost.

One element of operating risk, especially in the power sector, is supply risk. Coverage for output foregone and not delivered may be needed if the project has contracted to provide its output to off takers whose payments are used to secure debt service payments to creditors. In such cases, it is

possible to obtain a performance guarantee, where an insurer agrees to indemnify a third party either with payment of cash or provision of the supplies to cover the shortfall.<sup>44</sup>

#### **4.4.3 Demand Risks**

The project typically generates a good or a service designed to meet expected demand, which may fail to materialize at the level expected. It is entirely possible that demand projections made in assessing the viability of a project are not realized. For example, a toll road may generate lower level of traffic than expected because the toll may be unaffordable or because alternative roads may retain their attractiveness. A power project may have the capacity to produce a lot more power than current demand, which may lag projections. When demand falls short of expectations, cash flows may suffer, reducing the investor's returns.

One way to protect against such a risk, say for a power project, is to undertake a PPA with an offtaker which may be a public or private sector entity, generally a monopoly power distribution company within a specified service area under which the power producer is promised that the offtaker will take a certain level of power output for a certain price or pay the generating company at minimum levels if it fails to purchase the designated level of power. These types of provisions are termed "take or pay contracts." A PPA a creditworthy offtaker containing a take or pay provision can be a powerful means with which to raise debt capital. Similar contracts can be used for other products, such as gas.

Long-term contracts facilitate capital investment in major projects where the returns accrue over very long periods. Few companies are in a position to accept all the risks associated with the financing the development of gas production and processing facilities and related infrastructure. Take or pay contracts provide a mechanism to share these risks with the customers and make it possible for smaller companies to compete in power or gas projects.

Take or pay contracts can benefit both producers and consumers. Producers benefit from an assured cash flow throughout the life of the project, permitting the project to pay debt service. Customers benefit from the assurance that power or gas they have undertaken to buy will not be sold to others over the life of the contract. The gas customers can be more certain to meet their obligations to their own customers.

A problem with take or pay contracts, in which prepaid gas is "banked" and all rights to prepaid power are forfeited at the end of the contract term, is that the gas purchaser will have a clear incentive to distribute it at whatever price the market will bear. The problem only arises if the demand projections turn out to have been over-ambitious. It is also possible that the gas distributor would anticipate lower than projected demand and discount the gas prices before forfeited the "banked" gas. In the extreme, the gas would be available at deep discounts, leading to a possible increase in prices when the contract term expires. The initial drop and the subsequent

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<sup>44</sup> This kind of a policy was used in 1997 when double-A rated Asset Guarantee Insurance Co. (AGIC) supported a \$100 million transaction from Brazil for Trikem S.A. Export Trust. AGIC provided a "supply bond" covering delivery of exports or payment of cash to certificate holders. The transaction was rated A (not AA) by S&P because supply bond is not a financial guarantee. Duff & Phelps downgraded the issue in June 1999 by from A to BBB with a downturn in product markets and a downgrade of Nissho Iwai, the sole off taker.

increase in prices could lead to market distortions inducing producers to initially to substitute the cheaper gas for other fuels or inputs, encouraging over-consumption of downstream products like electricity and petrochemicals. Subsequent price increases would serve to reverse such over-consumption but could be disruptive.

#### ***4.5 Financial Risks***

##### ***4.5.1 Currency Risks***

For most projects, the needed capital equipment, its installation and operation may require substantial imports, a currency mismatch is unavoidable. Moreover, the long tenors necessary to finance projects are generally not available in domestic debt markets of most developing countries in the EAP region, with some notable exceptions, like Malaysia.

To the extent that projects are financed with foreign currencies and generate revenues in local currencies, there is a currency mismatch that could reduce the project's ability to pay investors in foreign currency obligations should the local currency be devalued. For debt obligations, currency risks could lead to defaults on repayment. For equity investors, currency risk could reduce the investment returns. For the project, currency risk represents a liability whose value can fluctuate.

There are a number ways to mitigate currency risks. Obviously, if the project outputs are sold in foreign currencies, e.g., oil or gas, such currency risk is mitigated. The project may generate more than sufficient foreign currency revenues to pay debt services, dividends and provide a return on invested capital. However, projects typically serve local needs and generate only local currency revenues.

To the extent that it is possible to purchase currency swaps, one can transform currency risks to counterparty risks. But as domestic government debt markets in developing countries typically lack longer maturities and are illiquid, foreign exchange swap markets generally exist only for the short and medium terms. As a result, it is typically difficult to hedge fully the foreign currency risks associated with international capital inflows. Some investors do use "rolling forward" swaps, whereby currency hedges are obtained for the terms available in the market and then rolled forward. But these do not provide perfect hedges as the currency risk is hedged only for the duration of the swap and the risk for the remainder of the term of the financing or investment must be hedged again.

Transactions from emerging markets with currency devaluation guarantees have been rare. In the ES Tiete transaction, OPIC provided a revolving devaluation credit facility in the amount of \$30 million. Market reception was tepid as the formula developed for disbursements was complex.

The Asian Development Bank (ADB) has developed a program intended to facilitate long-term domestic lending by making term funding in local currency available via local currency swaps with its member governments and using local currency it thus obtains to make long term loans to local financial institutions for on-lending to local borrowers. The first such transaction pursuant to this program is a recently approved long-term swap of up to 15 years for up to \$200 million for

the government of the Philippines to make available long-term fixed-rate funding to the local banking system for on-lending to local borrowers.<sup>45</sup>

The mechanics of the facility are relatively simple. ADB enters into a long-term swap with a member government as the counterparty, in which ADB advances US dollars to the member government, which advances to the ADB the equivalent amount of funds in local currency. During the term of the swap, ADB will make fixed-rate local currency loans to creditworthy private sector financial intermediaries rated investment grade on a local currency global scale basis, for a term no longer than the expiration date of the swap. The financial intermediaries will then lend funds to local borrowers for a term no longer than term of the swap. At the swap expiration date, the swap transaction will be unwound with ADB repaying the local currency and the member government repaying the US dollars at a pre-agreed exchange rate. This program illustrates how risk sharing can bring together a triple-A rated multilateral that can access foreign exchange for long terms at fine rates with a non-investment grade rated country which can offer local currency to such a highly rated counterparty. ADB takes the credit risk of the member country and the local financial intermediaries, which take the commercial risks of the local borrowers.

ADB anticipates doing similar transactions in more of the 44 countries in which it operates. To have a material impact on the financing of infrastructure projects in local currency, the initiative would need to be applied more broadly and on a larger scale, which seems to be ADB's intention. In addition, the initiative helps develop domestic credit markets by providing long-term local currency financing in countries where the capital markets currently do not offer long-term funding. On the other hand, the initiative is aimed only at providing long term funding for the banking system, and assumes that local banks are prepared to take long-term credit risks, which need not be the case especially since under the ADB plan, the banks will assume the risk of the local borrower. Domestic banks do not tend to make fifteen-year loans, whether because they lack long-term deposits or because they are unwilling and ill equipped to make long-term credit judgments, especially when there are abundant shorter-term lending opportunities. . Moreover, larger scale swap operations may impact the sovereign government's external debt position and hence its creditworthiness.

#### ***4.5.2 Exit Potential***

Both debt holders and equity investors look for ways to exit their investment so they can realize returns over finite time horizons because they often are fiduciaries for other investors who themselves have specific time frames to meet their liabilities. For bondholders who may wish to liquidate holdings prior to the stated maturity date of the issue, the exit strategy is obviously a secondary market sale of the bonds, which may or may not be liquid. Markets for rated bonds tend to be more liquid but ratings require a high quality of financial reporting. Infrastructure loans are generally held until maturity unless such loans can be pooled into collateralized debt obligations as discussed herein.

For equity holders, the exits may be through private sales to strategic investors or through initial public offerings ("IPOs") on either regional or international exchanges. To facilitate exits through

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<sup>45</sup> Robert Bestani and Ajay Sagar, "Local Currency Financing Revolts" in *Asia Pacific Review*, April 2004.

IPOs or private sale to strategic investors accounting should conform to US GAAP or to IAS, with financial statements audited by one of the big four accounting firms or their local affiliates.

Initial public offerings on regional stock markets have become quite popular in the larger and more liquid regional exchanges in Singapore and Hong Kong with some activity on other exchanges such as in Shanghai, with the potential for the larger companies to be simultaneously listed in the broader and deeper equity markets of the US, Japan and Europe. For example, in Hong Kong during 2003, there were 46 new listings of which 10 companies were incorporated in China. New listing activity in Singapore for the same period was comparable with a total of 61 new listings, split almost evenly between the main board and a secondary index.

## **Chapter 5: How Policies Can Impact Projects**

The main lesson presented in this Paper is that risk mitigation alone cannot fix bad policies and bad project economics. The policy and regulatory framework can influence project viability and project economics in critical ways. Government plans and incentives can also influence project dynamics.

Rather than discussing these matters only on a theoretical basis, we have referred to several specific examples that are described more fully in Chapter 3 and Appendix 1.

### ***5.1 Project Selection***

The impact of governmental action is probably the most obvious in project selection. When a government decides to auction cellular licenses or invites proposals for an IPP under a certain framework, such as BOT or BOOT or BOO, it has defined the private sector's range of options and thus influenced the projects that the private sector will select for submission to the government. In turn, the government will face the problem of short-listing potential bidders and of selecting among them based on its objectives.

If the government offers incentives, such as a bonus for early completion of the project, it may be able to attract a better bid from a party that feels it can count on such bonus payments to be made because of its ability to meet and beat deadlines, e.g., Hopewell has beaten its target completion dates time and again.

### ***5.2 Design***

Governmental policies that influence project design may be beneficial or intrusive and harmful. Such policies that specify environmental impact parameters may be beneficial in meeting appropriate and applicable standards. However, policies that skew project design in uneconomic ways for political purposes can be harmful.

While the Manila water system privatization process was characterized by a fair degree of competition and transparency, a crucial flaw was the government's fixation on reducing tariffs immediately after privatization to help sell the public on water privatization. Hence, the winning bids offered unsustainably low tariffs considering that billed volumes turned out to be lower than projected. The East concessionaire, Manila Water, achieved low post privatization tariffs by cutting both operating and capital expenditures during the first five years of the concession and was successful. The West concessionaire, Maynilad, made poor decisions. First, it cut capital expenditures but had operating cost overruns, some of which were disallowed when tariffs were reset at the end of the fifth year. Second, Maynilad did not achieve financial closure and has not paid concession fees to MWSS since March 2001. As MWSS was relying on these concession fees to pay debt service on its obligation, it was forced to incur additional debt to avoid defaulting on its existing debts. Third, though less efficient, Maynilad ended up with the lion's share of foreign exchange risk. Eventually, in late 1993 it was put into corporate rehabilitation, the equivalent of Chapter 11 and in January 2004 it defaulted on its \$280 million of debt, including a \$46 million bridge loan from foreign lenders. The government now intends to convert debt owned

it into a 60% equity stake in the company. But this is still subject to court and regulatory approvals.

There seem to be three major lessons from this case. First, privatization should not be oversold as a panacea with unrealistic expectations on post privatization tariff reductions and service improvements. Second, contracts should provide clear terms for disallowing expenditures from reimbursement formula and for levying fines for failure to meet service obligations. Third, the choice of an experienced concessionaire is critical.

### ***5.3 Profitability***

When poor governmental actions are cited, a failure to allow cost recovery in tariffs once the project is operating is at the top of the list. When a project is undertaken, assumptions are made about a variety of factors including volume of output to be sold and price at which such sales are to be made. The volume may be demand driven or subject to take or pay contracts with an offtaker. The price also could be at market or on the basis of a cost recovery or some other arrangement acceptable to the project sponsors. The price and volume assumptions go into financial projections a sponsor makes to determine its investment returns. No doubt, the sponsor will consider contingencies, such as lower or higher demand and prices. Expected returns must be at the target levels or better for a sponsor to go forward.

If actual volume or prices turn out to be vastly different from original assumptions and expectations, the original return calculations may turn out to have been off mark. This leads to a painful experience of lower than expected revenues and profits. If this situation persists, the sponsor may lose money and decide to abandon the project. Or it may seek to restructure the project so that the new tariff expectations are consistent with revised return expectations.

In the Meizhou Wan transaction, contractual tariffs were disallowed by the provincial authorities despite well-written contracts because alternative low cost power was available at a time when demand was down. The project was restructured with cheaper domestic currency debt and domestic coal contracts.

### ***5.4 Financing Mix***

Governmental actions can affect the financing mix between official and private sector sources in several ways. First, the country's sovereign risk may not allow it to access significant amounts of private capital, requiring it to access official funding. For example, there is little market appetite to take Cambodian or Lao risk. Even though Fiji and Mongolia are rated, to the best of our knowledge they have not been able to tap private capital. If the country is creditworthy, it may be able to attract private capital but only with political risk insurance from multilateral and bilateral sources. This is the case for Vietnam, which financed Phu My 2 with official sources but was able to secure private financing for Phu My 2.2 and 3, for which multilateral and bilateral support was also available. If the country is still better regarded, may be able to attract private capital with private sector PRI, as Thailand did with the BLCP financing.

Second, the government can affect the financing mix by permitting a degree of indexation of the tariffs to cover foreign exchange risk related to the costs of inputs (e.g., coal, gas or oil) and of servicing debt. Typically a sponsor wishes to make sure that the tariffs will cover cost escalation from depreciation in exchange risks. For example, in the BLCP transaction, it was more expedient and timely for the sponsors to get more foreign financing than to negotiate a change in the indexation formula, as such changes are politically sensitive, could set market precedents and could have taken a long time to negotiate. In the long run, it would be better to have a more flexible approach to indexation reflecting optimal project economics with appropriate roles for domestic and foreign currency financing. It may be helpful particularly for the smaller or less familiar EAP countries to have independent advice on how to determine the extent of indexation that may be appropriate on a project-by-project basis so as to offer some normative standards as well as transparency.

Third, by setting the rules of the game, the government can affect debt leverage. In general, more debt is possible when there is risk mitigation. This helps raise equity returns on a lower equity base. Less leverage is possible if output is to be sold on the open market. As the risks are higher, the returns must also be higher to entice the investors.

### ***5.5 Risk Allocation and Mitigation***

Government actions can also affect decisions about whether risk mitigation is required and what kinds of instruments and sources of risk mitigation are used. Government actions or inactions are what project sponsors and lenders often seek to cover through PRI/PRG from private insurers or the same type of cover from multilateral lenders. The post-1997 period in Asia has led to demand for “four point” political risk cover, where the fourth point is breach of contract. The market has largely responded to this by providing more comprehensive cover but there may still be room for improvement in what is covered as market participants who use such cover have indicated the need to be very careful in documenting the coverage that has been purchased.

Governments can also influence risk allocation and mitigation process by its commitment to the rule of law and its willingness to enforce judgments or arbitral awards from neutral overseas jurisdictions without reexamining their merits in the domestic jurisdictions which foreign participants often consider biased in favor of the local project participants. Whereas most countries in EAP have acceded to the New York Convention for arbitral awards, market participants believe that few governments have in fact adhered to its requirement to enforce arbitral awards made overseas without reexamination of the merits of the award. Some have suggested the establishment of a center for mediation in Singapore or elsewhere in the region where parties can try to mediate a dispute before recourse to dispute resolution in the courts or through formal arbitration.

The most significant issue for risk mitigation concerns cost recovery. This reflects concerns that the government may lack the political will to let the public bear higher costs for services or that it may lack the ability and willingness to cover such additional costs from its own financial resources. The concerns are more significant for projects where the services are actually unaffordable and must be subsidized and where the government has limited or potentially weak ability or willingness to bear the contingent liabilities. A parallel background Paper has suggested

that the risk that contingent liabilities will not be honored can be reduced if such liabilities are incurred in more limited circumstances with better disclosure and transparency so there is a better ‘buy in’ of legitimate government support for project which would serve to limit political resistance to make good if such support is in fact needed and to ensure that the support is in fact affordable for the government.

There has been little use of risk mitigation against credit risks through partial or full credit guarantees in Asian project financings in part because parties such as monoline financial guarantors and multiline insurers that could bear such risks have not been very active in the region. This is because the credit risks are high and country credit ratings are low (mostly non-investment grade). Much of monoline activity in Asia has been centered since 1997 on Japan, Australia, New Zealand, and Korea. There is now some interest in Taiwan and there is always interest in Hong Kong, where spreads are often too tight for monolines to add much value, e.g., in the recent tunnels and bridge transaction. But another reason why monolines have not been active is that they have not been encouraged to consider domestic currency guarantees for which there is potential in Malaysia, Thailand, and China. Domestic investors are supposed to know their government and be willing to take policy risks of such governments.

Governments could encourage monoline participation in local markets where appropriate by (i) permitting them to offer guarantees without having to register as domestic insurance companies or banks, (ii) permitting them to be paid fees in local currency and allowing them to convert such payments into foreign currency and (iii) providing them or allowing them to contract to get local currency funding if needed to pay claims on local guarantees.<sup>46</sup>

## **5.6 Conclusions**

EAP governments can impact of infrastructure project development and their financing through their policies, regulations, plans and incentives in ways with which policy makers may be unfamiliar. This is because infrastructure projects are often large and complex, involve long lead times, multiple ministries, complex financings and a multiplicity of bilateral, multilateral and private sector players. Often, such infrastructure projects are the first for the country to receive private sector financings. Therefore, it is probably beneficial for such countries to seek guidance and technical advice from competent parties in the public and the private sector. There is a great deal of expertise gathered among multilateral and bilateral agencies involved with infrastructure financings which should be deployed more effectively to provide timely and effective advice some of which could also come, probably at a much higher cost, from the private sector. Often it is not appreciated among government officials that good technical advise on project formulation and financing, though often costly, can make the difference between a viable project and project that is likely to fail.

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<sup>46</sup> SCIC recommended in 1998 that the Ministry of Commerce of Thailand state officially its view whether offshore monoline financial guarantee companies may provide guarantees for domestic Thai bonds without either a specific approval for the provision of such guarantees or establishing a domestic operation and thus “carrying on” business in Thailand. Legal analysis submitted to the Ministry of Commerce in 1995 suggests that neither a specific approval for such guarantees on domestic financings nor a domestic presence may be required. However, as the matter is not certain, a Ministry of Commerce notification on this matter would provide certainty and could make financial guarantees more readily available to interested parties in Thailand.

## **Chapter 6: Risk Mitigation Sources and Limitations**

SCIC believes that increasing private investment flows requires enhancing investment returns or reducing investment risks or both, if necessary through sector reforms. As infrastructure projects entail large lead times, high capital costs, great visibility and legal / regulatory as well as economic uncertainty, the management of risks – both real and perceived – is critical in attracting private sector funds, which is essential to offset the rising constraints on public sector financing for infrastructure projects. As delineated in the previous chapter, SCIC has focused on the following key risks: completion risk, performance risk, liquidity risk, currency / devaluation risk, political risk, regulatory risk (e.g., on rate increases for cost recovery), legal risk (e.g., in connection with property rights and perfection of security interests, and dispute resolution), accounting risk (e.g., mark-to-market obligations on derivatives contracts), exit limitations, etc.

A discussion of risks leads naturally to a discussion of risk segmentation, allocation and mitigation required to attract private sector funds. It is important to note that as fundamental reforms in the investment climate may take long time, the role of risk mitigation is critical not only as a long term solution but also as a bridging measure to facilitate financings in the near term. We will concentrate on modern risk mitigation methods, which if better utilized, could enhance investments in the poorer as well as the more prosperous EAP countries.

Apart from risk mitigation in the form of PRI/ PRG discussed herein, partial or full credit guarantees from public and private sector sources can provide immediate as well as longer term benefits including but not limited to longer term financing, potentially lower costs through higher ratings (potentially piercing the sovereign rating ceiling), a diversification of funding sources, fixed or floating rates of interest, an ability to segment and allocate risks, and if used in the context of local currency financing, reduction of foreign exchange risks. Risk mitigation can foster both private equity and debt inflows, reaching beyond infrastructure to include trade finance, housing and mortgage finance, commercial bank loans, corporate and utility bond issues, long-term foreign direct investment, portfolio investment, infrastructure and municipal finance, etc.

### ***6.1 Mitigating Risks to Foster Investments***

As capital flows can be hampered by risk, increasing infrastructure financing in the near term as well as in the long term may require better strategies for risk segmentation, risk allocation and risk mitigation. We believe risk mitigation techniques, potentially combining bilateral / multilateral and private sector instruments and sources, offer enormous potential to finance infrastructure projects. For example, in US public sector infrastructure and other municipal financings, private sector financial guarantees are used in up to 50% of new market issues and the share of guaranteed transactions has doubled over the past couple of decades. The role of private sector guarantees has also been rising in Europe, e.g., in UK financings pursuant to the Public Finance Initiative.

Given the long term tenor of infrastructure financings, it is likely that even in more creditworthy countries and projects, financing sourced from private sector sources can be increased substantially only with the use of political or credit risk guarantees or A/B loan structures

involving bilateral or multilateral sources of risk mitigation, the use of which would create some fiscal burdens for the public sector.

In lower rated, unrated, smaller or poorer countries and in projects that may not have high economic rates of return (such as water projects), private sector investment tends to be more limited. For example, according to the recent Water Commission report, for the mid-1990's, water projects were financed as follows: domestic public sector 65% to 70%, international donors 10% to 15%, domestic private sector 5%, and international private sector 10% to 15% -- i.e., for water projects, private sector investment during this period accounted for only 15% to 20% of the total outlays. Even when returns are higher, private sector financing may be limited in lower rated, unrated, smaller or poorer countries in EAP because of risk or size considerations or both. In such situations, a greater role may be necessary to provide direct financing or to facilitate private investment through risk mitigation support e.g., by helping pierce the sovereign rating ceiling.

### ***6.2 Rating Constraints Could be Overcome with Risk Mitigation***

Higher rated financings typically result in lower funding costs and easier market access. Accordingly, one way to increase the volume of infrastructure financings is to attract providers of partial or full credit guarantees, typically triple-A rated private sector guarantors, which could help achieve the desired ratings for the financing. However, the great majority of such private sector guarantors are monoline financial guarantee companies that can participate in transactions for non-investment grade countries only if, with the participation of a bilateral or a multilateral institution or with internal enhancements, the transaction can achieve an investment grade level before the monoline's guarantee.<sup>47</sup> Traditional rating approaches make this hard to achieve, posing a serious hindrance. For "single risk" deals, including future-flow, project finance and international public finance transactions, where there is a single primary source of repayment, S&P and to a lesser extent Moody's may not credit "tranche" the debt. This means that even with a multilateral or a bilateral partial guarantee, for example, in a \$200 million Manila municipal government bond or an Indonesian oil export transaction in which IFC takes \$50 million or more of first loss, the underlying transaction would probably not achieve an investment grade rating and hence not be eligible for a monoline guarantee. While the rating agencies' approach is understandable, it is markedly different from their willingness to permit credit tranching in securitizations with diversified pools of receivables (not single risks) and drastically limits the possibility of "single risk" debt issues with tranches supported by bilateral and/or multilateral as well as private sector guarantors. Bilateral and multilateral guarantors and insurers could work with the rating agencies and the private sector guarantors and insurers to break through this rating barrier.

### ***6.3 The Imperatives for Enhanced Risk Mitigation***

The potential of risk mitigation techniques in the form of guarantees and insurance to increase capital flows can be fully harnessed only to the extent that: (i) bilateral guarantors take greater risks in the poorer regions of EAP, dipping down to countries that are unrated or rated as low as B3/B- rather than limiting themselves as OPIC generally does to countries rated BB- or better; (ii)

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<sup>47</sup> Unlike monoline guarantors, multiline guarantors such as AIG are not limited to investment grade (triple B- or better) rated transactions.

multilateral institutions adjust internal guidelines to generate additional guarantee capacity through limited additional leverage for guarantees as opposed to loans, treating contingent guarantee liabilities as no riskier – and possibly less risky -- than loans, (iii) private guarantors and insurers enter into EAP financings in partnership with visionary bilateral and multilateral institutions offering innovative cover for mezzanine and subordinated risks that the private sector cannot or will not take; (iv) perhaps most critically, the rating agencies place greater credence than currently on the “halo” effect associated with risk mitigation, which could allow for limited credit tranching, and (v) substantially more dedicated, Asia-based risk mitigation capacity is provided through public – private partnerships by such entities as the now effectively defunct ASIA Ltd.

#### ***6.4 Existing Capacity for Risk Mitigation***

Risk mitigation capacity is currently available from bilateral, multilateral and private sources. However, for a variety of reasons, the use of risk mitigation in Asian financings has been very limited.

##### ***6.4.1 Bilateral Sources of Risk Mitigation***

In 2003, approximately 50% of all new PRI cover was written by bi-lateral sources.<sup>48</sup> The role of bilateral institutions, most of whom belong to the Berne Union, has gone well beyond the role of acting as an export credit agency (ECA) providing financing and guarantees in support of home country exporters to assuming a more proactive developmental stance that allows the institution to offer facilities that may not be explicitly tied to home country exports but implicitly still have some home country interest, which could include private sector bank participation. JBIC, for example, has provided such untied facilities where they act as a low cost co-lender to foster private sector Japanese bank participation. A sister Japanese institution, Nippon Export and Import Insurance (NEXI) acts in more of a traditional role of supporting Japanese importers via guarantees. As previously noted, JBIC and NEXI acted in concert in the BLCP transaction and the Paiton restructuring. In another transaction, JBIC has provided financing totaling 5 billion yen to support the National Power Corporation (NPC) of the Philippines. The loan to NPC was co-financed with private financial institutions, including Mizuho Corporate Bank, which acted as the agent bank. JBIC has also works with multilateral lenders such as ADB. For example, in Vietnam such collaboration has catalyzed participation of the private sector as well as of other development banks such as KfW Entwicklungsbank (KfW).

Other bilateral institutions assuming a wider development posture over and above supporting home country exports *per se* are US AID and US Overseas Private Investment Corp. (OPIC), Germany’s KfW, and France’s Agence Francaise de Development (Afd) and Compagnie Francaise d’Assurance pour le Commerce Exterieur (COFACE). OPIC has developed a number of innovative products including loan guarantees for use by leveraged equity funds investing in emerging markets and its “Real Exchange Rate Liquidity Facility” to mitigate the risk of

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<sup>48</sup> See Michael Jordan, “Assessment of the Availability of Political Risk Insurance for Infrastructure Investment”, June 2004

devaluation, as in the case of AES Tiete.<sup>49</sup> OPIC has also designed a facility whereby it can guarantee an international financing, e.g., in the US capital markets, if it is counter-guaranteed by a government that is rated BB- or better. OPIC investment guarantees are provided for foreign direct investments and typically cover nationalization, inconvertibility and transferability risk though there is an increasing tendency to include breach of contract. Although the OPIC guarantee is available only when the financing is for a project with a US interest, this requirement can be satisfied in different ways, including placing the financing in the US capital markets.

#### ***6.4.2 Multilateral Sources***

Traditionally, the World Bank Group (including IBRD, MIGA, IFC and IDA) have been active as risk mitigators in Asia through a variety of instruments – direct guarantees with or without government counter guarantees, A/B loan structures, partial credit and partial risk guarantees, etc.<sup>50</sup> The World Bank's Guarantee instrument was formally mainstreamed in 1994 to address the growing need to offer political risk mitigation products to commercial lenders contemplating financial investment in the infrastructure sectors of developing countries. The World Bank's fundamental objective in offering guarantees is to mobilize private capital for such projects on a "lender of last resort" basis.

At present, the World Bank offers three basic types of guarantees.

- *Partial credit guarantees* cover debt service defaults on a specified portion of a loan or a bond. Such guarantees allow public sector projects to extend maturities and lower spreads. This type of facility was used in the 1998 EGAT financing discussed elsewhere in this Paper.
- *Partial risk guarantees* cover debt service defaults on a loan to a private sector project caused by a government's failure to meet its contractual obligations related to a private project.
- *Policy based guarantees* cover a portion of debt service on a borrowing by an eligible member country from private foreign creditors in support of agreed structural, institutional, and social policies and reforms.

A key multilateral risk mitigator of political risks for equity and debt investment within the World Bank group is MIGA which in 2003 issued \$43.2 million in guarantees to SembCorp of Singapore to cover its \$38 million equity investment in the Phu My 3 project in Vietnam and also issued \$75 million in coverage to Crédit Lyonnais of France to cover a \$43 million non-shareholder loan to the project.<sup>51</sup> In addition, IDA, the World Bank's soft loan window, pursuant to a pilot project established in 1997 has extended two PRGs. The first such partial risk guarantee was provided in December 1998 for a \$223 million financing for the Azito Power Project in Cote

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<sup>49</sup> See a discussion of this facility in Robert Sheppard, "Capital Markets Financing for Developing-Country Projects", United Nations, DESA Discussion Paper No. 28, January 2003.

<sup>50</sup> MIGA and IFC do not require counter-guarantees.

<sup>51</sup> MIGA can guarantee both equity and debt, though its establishing convention requires in Article 12(a) that "Eligible investments shall include equity interests, including medium- or long-term loans made or guaranteed by holders of equity in the enterprise concerned, and such forms of direct investments as may be determined by the Board."

d'Ivoire which took only four months to complete with a guarantee fee of 75 basis points per annum and in 2002 its second partial risk guarantee for the \$180 million Haripur Power Project in Bangladesh. The Bujagali Power Project in Uganda is also expected to receive an IDA guarantee if and when it goes forward.

As of fiscal year end 2003, IFC, also a member of the World Bank group, has a committed portfolio of loan guarantees and risk management products attributable to EAP of \$587 million, up from \$335 million for fiscal year 2002.<sup>52</sup> Aside from more traditional risk mitigation products, IFC is prepared to extend other forms of credit enhancement, such as the purchase of the junior tranche of an asset backed financing, such as the Kiwane transaction in South Africa, which used a collateralized debt obligation (CDO) structure to finance corporate loans. As noted below in Section 7.6, this form of credit enhancement could play a part in developing CDOs backed by project financings.

ADB, with high ratings and a substantial capital base, has also become active in political risk mitigation and has recently introduced a facility to provide long term local currency swaps to inject long-term local currency at fixed rates into the banking system in exchange for hard currencies to increase local supply of long term funds.

#### ***6.4.2 Private Sector Sources***

Private sector guarantors have also been active on the region, but guarantors referred to in the capital markets as “monoline” (MBIA, FSA, AMBAC, XL Capital Assurance, CDC IXIS Financial Guarantee or CIFG, etc. all rated triple-A) require that the transaction is investment grade before their guarantee. Thus, they are most likely to be active in countries that are rated investment grade or in future flow transactions where offshore receivables underpin debt service and where the sovereign rating can, in effect, be pierced. While there were few project financings in Asia where monoline financial guarantors had provided their 100% financial guarantees, they have been fairly active in such financings in developed countries, e.g, in the UK.

While the private sector guarantors commonly referred to as “multi-lines” do not require the underlying transaction to be rated or rated investment grade, their activity in Asia has been very limited and their interest in financial guarantees has declined. Overall private sector capacity to offer risk mitigation in the form of partial or full credit guarantees in Asia can be increased significantly if public sector multilateral and bilateral guarantors can fill the “investment grade” gap. To the extent that the participation of bilateral and multilateral guarantors increases the transaction rating to investment grade, private sector guarantors may be able to participate. This points to the need for public – private partnerships on a transactional or a programmatic basis or both.

#### ***6.5 How Risk Mitigation Can Enhance EAP Financings***

Klein<sup>53</sup> argues that where the cost of capital is very high or financing difficult to attract at all, guarantees may help stimulate capital flows at reasonable rates. Thus, given that developing

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<sup>52</sup> IFC Annual Report 2003

<sup>53</sup> Michael Klein, “Managing Guarantee Programs in Support of Infrastructure Investments”, July 1, 1997 (Para 14)

countries are perceived to be riskier than other regions of the world, the use of guarantees should help companies facilitate trade and investment, especially vis-à-vis Asian countries post 1997.

### ***6.5.1 Investment Climate***

Governments of developing countries focusing on private sector-led growth are now systematically addressing issues of investment climate. Measures range from improving the judiciary, to creating forums for dialogue between the Government and the private sector, facilitating trade through creation of “one stop-shops”, to reforming customs, providing lines of credit to improve the business prospects for small and medium sized enterprises, fostering competitiveness to address supply chain issues. While the range of measures is broad and admittedly yields tangible results, change tends to be slow. All the more as the perceptions of risks in doing business in EAP continue to be severely negative. This work is a pre-requisite to achieve results in the medium to long term.

But the short-term results are unlikely to be seen through such measures. Perceptions of the EAP as a difficult place to conduct business will not change overnight. There is a need to take a more voluntary approach by growing the source of supply.

### ***6.6 Pooling as a Form of Risk Mitigation***

The pooling of multiple project credit risks and their enhancement can perhaps lead to investment instruments better able to withstand the kind of financial shocks East Asia and Pacific experienced post-1997. There are now a number of interesting and successful cases in Asia involving pooling of infrastructure debt or equity investments, in effect creating a secondary market for existing investments and enhancing overall market liquidity.

One such example is the Darby Franklin Templeton Investments Asian Infrastructure Mezzanine Capital Fund totaling \$246 million, which is leveraged with a debt to equity ratio of approximately 1:1, rated by Fitch and structured to comply with rating agency requirements. The shadow rating of the portfolio investments is B+. The Fund is 80% invested in ten deals of which 7 are rated. All projects are for infrastructure. Darby is also working on a Brazilian country fund in local currency equivalent of about \$100 million to invest in infrastructure projects.

An example of a debt issue based on diversified cash flows is the five-tranche issuance of local currency AA- rated HK\$6 billion bonds to securitize future revenues from its existing five tunnels and one bridge / road link over a Hong Kong Government tunnels. The pooling of the cash flows from six different sources helps mitigate the risk of exposure to the economics of only one facility. Hong Kong government support in the form of direct payments in the event of business interruption, toll rate adjustments, and certain operational risks is also important for the transaction.

Another application of pooling is the infrastructure CDO in which infrastructure related bond or loans could be securitized through the issuance of a CDO credit tranching to appeal to various investor risk appetites. While only a handful of such transactions have been completed to date, structures in which the most junior tranche of the CDO is purchased by a multilateral institution

or others could provide the impetus for the creation of a real secondary market for infrastructure bonds and/or loans.<sup>54</sup> But further progress hinges on developing a large enough database from which to derive statistically meaningful default and recovery data for project financings and formulate reasonable assumptions about future outcomes.

### ***6.7 Limitations and Potential of Risk Mitigation***

It is possible to think from the large focus on risk mitigation in this Paper to think that this is the panacea for financing infrastructure in EAP. Nothing could be farther from the truth. Risk mitigation instruments are not a substitute for policy reforms to make projects more viable nor can risk mitigation make a bad project good. Rather it can make a good project more attractive to lenders and investors. But not all good projects can necessarily be financed even with risk mitigation. There are sectors of infrastructure development that are very important but where the investment returns are not and cannot be very attractive for the private sector. There may be countries where even the best projects cannot receive market acceptance because the country risk is not acceptable. There will also be situations where risk mitigation instruments are just not available or appropriate or are simply too costly. For such situations, various sources of official assistance may be the only viable means for financings important infrastructure development.

That having been said, it is our belief that the role of risk mitigation has scarcely been probed to foster financing of infrastructure in Asia. We have noted the importance of risk mitigation in the US municipal finance markets (not to mention the primary and secondary mortgage markets) where about one half of the financings enjoy triple-A guarantees. We have noted that multilaterals such as the World Bank and ADB have not mainstreamed their guarantee products, with guarantees accounting for less than 5% of their loans, when their stronger suit is risk mitigation rather than financing. We have noted the limited extent to which bilateral sources of risk mitigation work together and with multilateral institutions in public – public partnerships transcending to some extent their national perspectives to make a financing possible. We have also pointed to the limited use of private sources of risk mitigation, which can be increased through public – private partnerships. So while we believe that risk mitigation is no panacea, its potential to unlock large volumes of financings has barely been tapped and should be more fully developed.

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<sup>54</sup> Project finance CDOs include Project Funding Corporation 1 (1998), a \$617 million CLO with 41 loans mainly for US power plants and Project Funding CLO 2 (2000) both via CSFB as well as Citibank's Project Securitization 1. The most recent Project Finance CDO was the Essential Public Infrastructure Capital transaction completed in September, 2004.

## **Chapter 7: Development of Domestic Capital Markets**

Developing local capital markets to access long-term funds is generally considered desirable. Infrastructure projects have long economic lives and are best financed long term so that financing costs can be spread over a long time and asset and liability lives are better matched. Developing the ability to finance long term in local currencies reduces exposure to currency devaluation related risk.

### **7.1 Asian Capital Markets**

Development of domestic debt capital markets can offer many advantages to project sponsors. It can enable them to avoid foreign currency exposures that may not be appropriate if their revenues are generated largely or even exclusively in local currencies. They can offer an alternative and potentially cheaper source of funding reducing dependence on banks and equity markets, the traditional source of local currency finance, which can be limiting in terms of cost, size, availability and maturities. For example, equity funding can often be too expensive for many sponsors and may not be possible to access for greenfield projects. Local capital markets could offer more investment alternatives via corporate, utility, infrastructure, sub-sovereign, municipal and structured financings, more effective take out financing (e.g, via leasing or maturity guarantees or puts) and greater use of risk mitigation to attract a wider investor base. Debt capital market development can also have positive systemic effects, including increase in local savings, greater efficiency in capital allocation, greater transparency and reduced dependence on the banking system. Investors will benefit from local capital markets if they are offered a wider choice of high quality investment opportunities, greater liquidity, and higher yields. Such instruments will permit them to better manage their asset and liability mismatches to meet their investment objectives.

As an IFC publication entitled "Bond Market Development in Emerging Markets"<sup>55</sup> notes, there are many interacting elements, across and inside the capital markets that need to work together providing incentives for issuers, investors and intermediaries to create local capital markets. The instruments need to provide features the borrowers cannot get elsewhere, such as larger volumes, quicker access, and better maturities. Investors need to get the kind of maturities, yields, safety and liquidity that may be lacking in the existing range of instruments. Bank and non-bank financial intermediaries have to learn to play roles as arrangers of bond issues, as investors and as providers of specialized services (dedicated accounts, lock boxes, custody of documents, guaranteed investment contracts or basis swaps to cover certain transaction risks), etc. Thus local capital market development will take time.

The benefits of local capital markets can be realized only with development of the institutional infrastructure of the local capital markets. While there is some movement in EAP toward the creation of domestic debt capital markets, much remains to be done:

- The regional financial centers like Hong Kong and Singapore have been used only to a limited extent for financings not related to China;

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<sup>55</sup> See Alison Harwood, ed., "Building Local Bond Markets - An Asian Perspective", IFC, September 2000.

- Local capital markets are limited to a few countries such as Malaysia, Hong Kong and Singapore;
- Pension funds lack high quality, long term investment opportunities;
- Sovereign governments are largely non-investment grade, limiting transaction ratings;
- Limited numbers of issuers, investors and competent capital markets intermediaries;
- Though international rating agencies have established regional operations notably in Hong Kong and Singapore and many countries have national credit rating agencies, the use of ratings is still developing with limited issuance and limited impact of ratings on issue prices;
- Investors are concerned about the credit quality of issuers, including those associated with infrastructure projects.

## ***7.2 Sub-Sovereign or Municipal Finance Markets***

A key component of Asian domestic debt capital markets in time could be municipal or sub-sovereign financings. These markets could offer important instruments to attract private savings.<sup>56</sup>

Municipal and sub-sovereign bond markets can only develop with predictable legal and administrative frameworks for intergovernmental rights to revenues and other income as well as the responsibility for public services. With such a framework, it may be possible to develop financing instruments in countries such as the Philippines, Thailand, and China and perhaps Indonesia for the larger municipalities to borrow directly and for the smaller ones to get funding from specialized municipal finance intermediaries.

There are many interesting and successful international precedents in the US and Europe for using sub-sovereign or municipal to finance local infrastructure, including municipal utilities. In the US, there is currently over \$1.5 trillion in outstanding municipal bond debt consisting of obligations of approximately 50,000 local government issuers including specialized authorities or funds organized solely to facilitate infrastructure finance. These local government entities enjoy direct access to this market and typical do so with the use of credit ratings and as often as not with full credit guarantees in the form of monoline financial guarantee insurance. The popularity of this market in the US is largely a function of federal and state tax exemptions on interest payments with respect to such bonds.

Nearly a dozen and half US states have established state chartered bond banks, typically rated investment grade, to provide efficient access to the capital markets for many smaller local governments. Ratings of bonds issued by such bond banks typically are based on the moral obligation of the state. Another US example is the state revolving fund (SRF), which finances wastewater and water projects, combining state funding with matching grants from the Environmental Protection Agency. Many SRFs also issue bonds and lend the proceeds to participating municipal utilities. Repayments from the borrowers are used to service debt. Their leverage is limited by a lack of geographic diversity within the pool and the credit quality of the borrowers.

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<sup>56</sup> A former Managing Director of the World Bank Group, has recommended that the World Bank should consider changing its articles to allow greater flexibility for both the World Bank and IDA to lend directly to sub-sovereign entities. See Richard H. Frank, "Time for the Old Dog to Learn New Tricks" in *The Banker*, September 2004.

The municipal bond bank structure is not confined to the US. The enabling legislation for the creation of the Municipal Finance Authority of British Columbia (MFABC) in Canada requires that all municipalities in the province contribute to a debt service reserve fund whenever they borrow. The contribution is not returned until each loan is repaid. If the fund is drawn down by default of one or more municipalities, it could be replenished by a province-wide levy. To date, the fund has never been drawn upon and the levy has never had to be assessed. Kommunalbanken AS in Norway, rated triple-A and 80% owned by the sovereign and 20 percent by the largest municipal government pension fund, is the leading lender to sub-sovereign entities, which can also borrow from commercial banks. Over last 75 years, no sub-national borrower has defaulted to Kommunalbanken or its predecessor. Local governments in Norway are subject to careful supervision by a system of controls under the central government.<sup>57</sup>

The potential benefits and developmental challenges vary by country. For example, in China, local governments cannot borrow on their own credit though local government corporations may do so though without the guarantees of their local government owners. China does have rating agencies but their ratings still lack credibility. The State Development and Reform Commission (SDRC) must approve bond issues of sub-sovereigns on a case-by-case basis. In Vietnam, the central government controls the borrowing process and on a case-by-case basis, approval may be granted for a local government to borrow up to 30% of a project's cost. There is no rating agency and banks cannot lend to local governments though they may buy local government bonds. This means that a local government could finance infrastructure through a bond that local banks would be permitted or directed to buy.

The Philippines may have the most immediate potential for developing its interesting if small municipal bond market and should be encouraged in this process. It has already established a municipal financial guarantee company called Local Government Unit Guarantee Corporation (LGUGC) which provides guarantees for local government bond issues, typically secured by Internal Revenue Allocations (IRAs), which are statutory payments made by the central government to local authorities pursuant to the Local Government Code of 1991. LGUGC has also developed an internal rating system for municipal governments.

### ***7.3 Utility Bonds***

In the US and Europe, both investor and state owned utilities providing a variety of services (such as electric power, water, sewerage, etc.) are some of the most frequent issuers of revenue bonds. Many such utilities have monopoly or quasi-monopoly powers in their service areas and provide essential services. s. By and large, public utility bonds are supported by rates charged to customers and are subject to regulation with respect to the services they provide as well as the rates that they charge to customers. Hence the economic health and potential growth of the service area are key factors in determining the credit quality of the issues.

Utility bonds are typically some of the safest corporate bonds with very low default rates. There are a variety of security structures for these financings ranging from unsecured senior or subordinated debt to bonds secured by a first mortgage on generating or other assets. With low

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<sup>57</sup> SCIC acted as Kommunalbanken's rating and financial advisor in 1998/1999 when it underwent a change of ownership from 100% ownership by the central government.

default rates and attractive interest rates, utility bonds are popular with both institutional and retail investors. Retail interest has been broadened with the development of an active secondary market for utility bonds, including those which guaranteed in the primary or in the secondary market by monoline financial guarantee companies.

#### **7.4 Value Added by Credit Guarantees**

Weaknesses of local capital markets and their lack of efficiency can be effectively addressed with the use of PCGs provided by multilaterals such as the World Bank, ADB, and IFC combined with full credit guarantees provided typically by specialized private sector financial guarantee companies. As financial guarantors, these institutions can help investors overcome perceived credit risks, accept longer maturities, develop yield curve benchmarks, and provide opportunities to better match assets and liabilities. They can also provide many benefits to issuers, such as lower cost funding, an alternative source of funding, the potential for better asset and liability matching, and greater financial flexibility.

In assessing the readiness of different countries to use such guarantees in local markets, our experience suggests that a number of critical factors should be considered, including:

- Presence of an investor base for long-term financings;
- Presence of regulatory, legal, tax, and accounting infrastructure conducive to the efficacy of such guarantees;
- Presence and price impact of credit ratings;
- Receptivity to credit enhancement options; and
- Presence or active interest of financial guarantors.

The value added by credit or financial guarantees may vary from country to country, depending on the level of development of the local capital markets and on the specific opportunities that are brought to its attention. The greatest benefits may accrue to countries where local capital markets are already developing.

Bringing the powers of financial guarantors to bear on local capital market development in Asia will require promoting the role and use of credit ratings as it will enhance transparency, increase price sensitivity to ratings and create demand for highly rated securities. This is because financial guarantors are constrained from local market activity in Asia, as in other emerging markets, because they can guarantee only investment grade transactions. As noted previously, multilateral lenders acting as financial guarantors will make a tremendous contribution if its financial guarantee products lift non-investment grade transactions into the investment grade category, thereby enabling them to access private financial guarantees.

We recommend using the full range of possible guarantee products including but not limited to PCGs for specific tranches of a financing (e.g., the mezzanine tranche), maturity guarantees as well as potentially full credit guarantees provided by multilateral and bilateral institutions to facilitate access to local capital markets both with and without the use of private financial guarantees:

We are particularly keen about mezzanine guarantees that can bring in private financial guarantors into local capital markets in Asia. We are equally optimistic about the multilateral financial guarantors' role as the sole guarantor of infrastructure, municipal and corporate bonds in markets where private financial guarantors are not able to act for a variety of reasons. We believe that the co-guarantor structure involving the partnership of a multilateral institution and a monoline financial guarantor can be successful in Asia as it has been in for infrastructure financings in Chile. Improvements can be made to address such issues as control, pricing and market acceptance. Finally, while maturity guarantees or puts are not an established product for multilateral lenders, they offer an important potential benefit that justifies further development effort for this product.

### ***7.5 Transactional Suitability of Guarantee Instruments***

Infrastructure financings placed in domestic capital markets would benefit from a maturity guarantee to bring in local market investors that otherwise might not wish to invest in very long final maturities. If a mezzanine guarantee were provided to bring the transaction up to investment grade, private financial guarantors could raise the transaction ratings further to double A or triple-A through a full credit guarantee. For example, a small local electric utility may require a full credit guarantee to access the domestic or international markets to finance a portion of the project costs of power capacity addition. Various guarantee instruments can be combined to approach the benefits of a full credit guarantee, e.g., to upgrade the credit quality of a local power distributor contracting on a long-term basis to purchase power from an independent power producer.<sup>58</sup>

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<sup>58</sup> In cross-border structured finance transactions, a future flows based structure may involve a performance guarantee to mitigate the operating risk of the exporter producing a commodity or service that commands a market price, typically in foreign currencies, once it has been produced and delivered.

**Table 5: Product-Market Matrix**

<b>Market Segment</b>	<b>Capital Market Characteristics</b>	<b>Market Potential</b>	<b>Product Suitability</b>
<ul style="list-style-type: none"> <li>• <b>Low capital market development</b></li> <li>• <b>Country not rated or low NIG e.g., Indonesia, Mongolia, Fiji</b></li> </ul>	<ul style="list-style-type: none"> <li>• Low ratings penetration with few or no RAs</li> <li>• Low disclosure standards</li> <li>• Banks dominant</li> </ul>	<ul style="list-style-type: none"> <li>• Low prospects for multilateral financial guarantee products</li> <li>• Need to develop local capital markets in other ways first</li> </ul>	<ul style="list-style-type: none"> <li>• Occasional use of full or partial wrap or other non-core guarantees (perhaps for unsecured corporate debt issues)</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Low capital market development</b></li> <li>• <b>Country rated high NIG, e.g., the Philippines</b></li> </ul>	<ul style="list-style-type: none"> <li>• RAs exist but ineffective</li> <li>• Spreads not sensitive to ratings</li> <li>• Few capital market issues</li> <li>• Few benchmarks</li> <li>• Little secondary market trading</li> </ul>	<ul style="list-style-type: none"> <li>• Medium prospects for use of multilateral financial guarantee products</li> <li>• Encourage regulatory support for ratings</li> <li>• Encourage investor education</li> </ul>	<ul style="list-style-type: none"> <li>• Provide Maturity Guarantees</li> <li>• Topping up of debt service reserves</li> <li>• Partial guarantees for NIG ABS/MBS transactions</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Developing capital markets</b></li> <li>• <b>High NIG or low IG country rating, e.g., Thailand, China</b></li> </ul>	<ul style="list-style-type: none"> <li>• Local RAs have made inroads</li> <li>• Low price sensitivity to ratings</li> <li>• Debt maturities are still limited</li> <li>• A multilateral lender's name may add value for investors</li> </ul>	<ul style="list-style-type: none"> <li>• Good prospects for multilateral financial guarantee products</li> <li>• Consider benefits of one-name paper</li> <li>• Help Financial Guarantors gain local acceptance</li> <li>• Help bring NIG issues to IG levels</li> </ul>	<ul style="list-style-type: none"> <li>• Offer Mezzanine Guarantees to get private financial guarantors back in</li> <li>• Partial Credit Guarantees for ABS/MBS</li> <li>• Topping up debt service reserve</li> <li>• Maturity Guarantees</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Developing capital markets</b></li> <li>• <b>Solidly IG sovereign rating</b></li> <li>• <b>Private financial guarantors could be active, e.g. Malaysia</b></li> </ul>	<ul style="list-style-type: none"> <li>• Ratings common</li> <li>• Guaranteed issues still mispriced</li> <li>• Long maturities available</li> <li>• Fixed rate paper limited</li> <li>• Local guarantor capacity limited</li> </ul>	<ul style="list-style-type: none"> <li>• Good prospects for a multilateral lender's guarantee products</li> <li>• Consider benefits of one-name paper</li> <li>• Help bring NIG issues to IG levels</li> </ul>	<ul style="list-style-type: none"> <li>• Offer reinsurance capacity to active FGs</li> <li>• Help attract new FGs to the country</li> <li>• Partial guarantees for NIG ABS/MBS transactions</li> </ul>

IG = Investment grade, local currency, global scale

NIG = Non-investment Grade

FG= Financial Guarantor

RA= Rating Agency

## **Chapter 8: Conclusions and Recommendations**

The decline in the use of private financings in Asian infrastructure since the 1997 financial crisis has slowly and selectively begun to reverse. Such investments are now probably safer as there is a greater understanding among all parties that projects must be fundamentally sound and economically viable. The viability of projects can be improved to the extent that EAP countries have or adopt sound sector policies. If the environment for projects is thus improved, better risk mitigation mechanisms can play their role in improving the efficiency and effectiveness of projects. A number of recommendations are worth noting for the EAP countries, for multilateral and bilateral agencies and for the private sector.

### **8.1 What can EAP Countries do to Expand Private Participation in Infrastructure Financings?**

Probably the greatest burden for attracting infrastructure financings falls on the EAP countries themselves. They need to mobilize domestic savings as well as foreign sourced funds. As many of them have high domestic savings rates, they could find better ways to garner and deploy such savings more effectively for infrastructure financings. The benefits of such domestic financing of infrastructure including no exposure to devaluation risk, no contentious contract enforcement issues with foreign investors, and retention of investment returns for nationals. Realizing these benefits requires not only the development of domestic capital markets but also greater safety and soundness of the domestic banking system, especially in connection with loans to large, lumpy infrastructure projects.

#### **8.1.1 Recommendation: Develop Domestic Capital Markets**

The potential for local capital market development has probably improved a little during the post-1997 period as many governments have been forced to issue government or quasi-governmental debt, thus fostering the emergence of yield curve benchmarks. Domestic credit problems have also sensitized investors and governments to credit risks and led to judicial and administrative reforms and a greater interest in credit ratings. Accordingly, the time may now be opportune to press onwards with further development of local capital markets through measures that may vary in timing and content from country to country but might include:

- Regulatory reforms on adequate disclosure for public and private issues of debt and equity
- Strengthening national rating agencies (e.g., via regulation and licensing to ensure sound policies and practices, including on conflicts of interest) through appropriate technical and other assistance either from the international rating agencies or from former executives of such agencies
- Develop the capacity of investors to take longer term infrastructure risks through investment incentives where appropriate (e.g., as eligible investments for regulatory ratios requirements if highly rated and issued for infrastructure development by appropriate issuers)
- Help develop the potential for domestic sub-sovereign financings by municipal bond banks,
- Help develop the potential for financing by both public and private sector utilities through regulation and security structures to foster such direct issuance by utilities,

- Develop interest rate and currency swap markets to help lenders, investors and borrowers manage their risks (e.g., ADB's long term local currency lending facility could be expanded)
- Facilitate good risk management by banks and non-banks alike e.g., by encouraging use of internal and/or external credit ratings.
- Help banks improve their capitalization and profitability through a stable and prudent regime of bank supervision
- Permit international monoline financial guarantors to provide local currency guarantees for domestic bond issues as they can help reduce costs of funds and lengthen maturities and consider the creation of a domestic monoline guarantee company for a country like China.

### ***8.1.2 Recommendation: Seek Predictability of the Investment Environment***

Even with the emergence of regional sponsors as investors and domestic banks as lenders for projects in such countries as China and Thailand and the development of local debt capital markets, for example in Malaysia, there is likely to remain the need to attract external financings because the needs for infrastructure financing are too large to be fully met from domestic savings. As a result, EAP countries will need to make themselves more attractive for foreign lending and investment in ways that are well known but not easy. EAP governments would probably do well to cultivate a public consensus on the benefits of investments by foreign sponsors and bankers in developing public infrastructure.

Foremost among the needs of foreign participants is predictability in the investment environment, through a track record of honoring contracts, permitting dispute resolution in neutral forums and seeing to the enforcement of judicial or arbitral awards without local reexamination of the merits. In this regard, countries that are not signatories to New York Convention on arbitration should consider signing this Convention.

Another imperative is the wisdom, transparency and predictability of policy frameworks for high priority infrastructure sectors, including provisions for cost recovery, clear rules on the framework for competition and reasonably stable macroeconomic environment permitting assessments of demand and costs of supplies. Some such policies have been discussed in Chapter 5.

### ***8.1.3 Recommendation: Obtain and / or Improve and Wisely Use Credit Ratings***

Finally, EAP countries should get and/or to improve their international sovereign credit ratings, which not only affect the cost of cross border borrowings for the country itself but also for other borrowers domiciled in the country as the sovereign rating often serves as the ceiling for ratings of other borrowers domiciled in the country. They should also educate themselves on how to get, keep, improve and use credit ratings for debt and equity flows.

Learning how to get and use ratings effectively may take some technical assistance from competent rating advisors for the smaller countries in EAP with no ratings or with very low ratings directed to the levels of the Permanent Secretary of the Ministry of Finance and the

Central Bank Governor as these officials may or may not be familiar with dealing with the private financial markets.

***8.1.4 Recommendation: Encourage the Private Sector to Take a Longer View***

The private sector could also be encouraged via incentive to take a longer-term view of investing in emerging markets where risk volatility is and will likely remain higher than developed countries. Those who have longer-term commitments (like equity and long term debt holders) could be given incentive to stay committed to limit the extent to which sponsors are inclined to withdraw at the first sign of trouble. Chile did this by offering minimum guaranteed returns for investors on a revenue neutral basis pursuant to their mechanism for distribution of income or “mdi” program, e.g., in the toll road sector, when market demand was too slow to materialize thus shifting demand risk back to the government. This may be difficult as businesses are prone to market pressures, which often put premia on short-term gains and returns.

***8.2 What can Private Sector do to Strengthen Infrastructure Financings?***

***8.2.1 Recommendation: Focus on Viable Projects***

The private sector can probably play the most important role in designing viable projects. It should limit project risks by pursuing projects that reflect governmental priorities and have public support and have strong value addition. Sponsors and banks should be skeptical of government commitments of cost recovery for projects which are uneconomic or unaffordable or both. Experience shows that even if such projects are justified initially because of dire shortages or otherwise, adverse changes in economic, financial or political conditions tend to sap the government’s commitments to cost recovery or other forms of support and lead to failed projects.

The private sector sponsors and lenders should also insist on committed and capable public sector partners which will abide by contractual agreements, good project documents that reflect the tone and provisions of the concession agreements, good financing structures with appropriate use of special purpose, bankruptcy remote entities where necessary to limit the project’s exposure to the risk of sponsor insolvency, tight trustee control over project revenues to mitigate commingling and fraud risks, adequate liquidity / reserve funds to provide additional comfort that prospective debt service payments can be made , progressive cash accumulation for maintenance and capital improvements, back-loaded principal payments or a grace periods to match revenues to debt service obligations, minimal debt refinancing risk through longer tenors, limited and if possible hedged foreign currency risks, and risk mitigation as appropriate through host government, multilateral and bilateral political and credit risk guarantees where appropriate.

Based on experience, some senior lenders in the market have recommended that policy actions should be taken to protect long-term debt and align the interests for debt and equity. First, seniority of debt should be provided for in the cash flow waterfall, along with comfortable debt service features and dividend lock-up features to provide incentives for equity to perform as close to base case as possible. Second, there should be strictly arms length relationships between concessionaires and related construction contractors (who often own shares in the concessionaire) to ensure that some shareholders do not get their equity out at the early stages of the transaction.

Finally, protections like political risk insurance provided to equity should also be available equally to senior lenders so equity holders do not have asymmetric incentives to exit a project leaving the debt holders in a bind.

***8.2.2 Recommendation: Consider pooled financings***

The private sector could also consider the pooling and/or securitization of multiple project revenues to support financings. Such pooling helps reduced risks and can attract investors. The technology for pooling and securitization is well established for granular assets such as mortgage loans, credit card balances and car loans but it is less well developed and used for lumpier assets such as project loans or bonds because high risk concentrations. Public- private partnerships may contribute to segmenting and distributing such risks in smaller pieces so as to reduce the risks of individual lenders, investors and sponsors.

***8.2.3 Recommendation: Consider Risk Mitigation Mechanisms***

In the mid-1990's, the use of risk mitigation instruments declined, probably reflecting a peaking of market confidence with investing in emerging markets. As infrastructure projects tend to have long gestation periods and long lives, it is clear in retrospect that higher use of risk mitigation instruments might have been beneficial and should probably be considered where cost effective. With this hindsight, the use of political risk and other guarantees and insurance can be expected to rise.

***8.3 What Can “Official” Institutions do to Enhance Infrastructure Financings?***

***8.3.1 Recommendation: Multilaterals Should Try to Formalize Role as an “Honest Broker”***

The private sector and EAP countries both value the expertise and neutrality of multilateral institutions to which both look to play a role as an “honest broker”. This rather vaguely defined role could become critical in all phases of infrastructure development – from needs assessment to setting policy objectives, to establishing sector policies, regulation, bidding and concessioning, financing, dispute resolution, etc. It would also be beneficial in this context to learn from the positive experience of Chile, especially in the toll road sector, where the government (i) deployed guarantees in size in innovative ways and (ii) agreed in good to faith to extend concessions for toll roads to guarantee minimum returns when market demand was below the authorities' initial expectations, thereby attracting both local and foreign capital and maintaining market confidence.

***8.3.2 Recommendation: Develop “Public-Public” Partnerships***

There is some movement towards “public-public” partnerships between ECAs and multilaterals to work with host governments in bringing more commercial lenders to the table (e.g., in Vietnam and Thailand) and among these ECAs: e.g., EXIM has agreements to work with their counterparts in several countries to offer a risk mitigation package where EXIM might be the guarantor or

insurer and the counterpart ECA a reinsurer when the majority of the exports may come from the US but a portion from another country.<sup>59</sup>

In addition, bank regulatory authorities should consider regulatory treatment of infrastructure loans that reflects not only the actual default history and recoveries to the extent such data can be these can be obtained and improved over time but also the presence or absence of

### ***8.3.3 Recommendation: Develop Public- Private Partnerships in Risk Mitigations***

The private markets value the role of multilateral institutions in infrastructure financings not simply as yet another source of financing but for their important impact on limiting host government misbehavior, whether directly as guarantors or indirectly as participants in the financings.

A multilateral institution's participation, even after Argentina, is considered to increase the likelihood that contractual obligations of the host government will be honored. Such a "halo" can take a more direct form when the multilateral is participating through a PCG or a PRG, providing certain explicit credit or political risk cover. Some observers believe that risk mitigation is a role where multilaterals have a powerful competitive edge. However, with the exception of MIGA, there are no major multilateral institutions for which risk mitigation is their core product. The World Bank, ADB and IFC think of themselves as lenders first and guarantors or risk mitigators second. A key market need is for multilateral institutions to offer risk mitigation in greater abundance and with greater ease of use.

What is interesting is that while the markets consider risk mitigation as multilateral institutions' core value added, the risk mitigation instruments that the multilaterals offer – PRGs and PCGs -- have been used only to a limited extent. There is no easy explanation of this paradox. But we believe that understanding this gap between potential and performance is key to a new and powerful new role of multilateral institutions to foster private capital flows for infrastructure. Many potential solutions can be hypothesized but they need to be tested both for product design and for product acceptance in the market. As multilaterals are bureaucratic rather than entrepreneurial institutions, it is not surprising that they may find it difficult to recognize market needs and move quickly to meet them. In addition, bilateral agencies such as JBIC have stepped into the breach to provide risk mitigation in addition to actual financing. Moreover, guarantees are increasingly available (though in relatively small amounts) from donor agencies such as USAID for specific uses (housing, municipal finance, etc.), SIDA, etc.<sup>60</sup> GarantCo is a collaboration among several European bilateral aid agencies (from Sweden, UK, Netherlands, Switzerland) along with the World Bank to provide guarantees for local currency infrastructure financings for the least developed countries. As the resources of bilateral donor agencies tend to be more limited, their guarantees may be directed to more effectively to smaller projects to the lower income countries in EAP.

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<sup>59</sup> EXIM has developed such templates with a number of countries including Canada, UK and Italy and is considering similar arrangements with a number of other countries.

<sup>60</sup> USAID has for some time been providing guarantees for local currency financings in various sectors including infrastructure. The total volume of guarantees over the period 1999 t- 2003 was \$241.6 million, of which 17% was for infrastructure.

It is entirely possible that guarantees are just difficult for multilaterals to get excited about since they are subject to the same leverage as for loans, even if contingent risks may be lower than lending risks. Second, as MIGA statutes permit guarantees of debt only when there is some equity investment guarantee, this can become a limiting factor though generally MIGA tends to be flexible on what it is prepared to regard as equity. Third, it may be helpful if multilaterals market themselves more effectively, responding swiftly to market inquiries, meeting often and face-to-face with market participants and being more swift in product modifications to meet market needs, and hire professionals from the private sector. But this may be difficult to do. One solution to this problem may be to develop a public-private partnership with the monoline guarantee industry, the most prolific guarantors by far, to offer emerging market cost-effective guarantee products that use multilateral institutions' risk mitigation capabilities to bring transactions from non-investment grade countries up to investment grade so the monolines can guarantee them to the triple-A level.

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Some improvements can and probably should be made in the existing risk mitigation products and their delivery. For example, market feedback suggests it may be beneficial to consider the following possibilities:

- Combine MIGA PRG with IFC / ADB B loans
- Provide limited devaluation risk cover
- Reduce the one-to-one hit against IDA and World Bank country allocations in the case of guarantees
- Persuade the rating agencies to place greater credence on the “halo” effect, so they might accept even limited credit tranching
- Lower pricing and faster turnaround times

If the private sector, the EAP governments and bilateral and multilateral institutions providing credits and risk mitigation support act in concert to restore market confidence that was lost in the aftermath of the Asian financial crisis, it is conceivable that private capital inflows may reach or even surpass the levels seen before 1997. But some countries such as Indonesia are likely to face great skepticism and even countries such as Thailand, Malaysia and China will encounter caution among international and regional lenders and sponsors. The accent therefore must be on basics – deal fundamentals, good policies, and long-term commitment to honor contracts, along with some risk mitigation to help along the way.

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<sup>61</sup> A monoline representative recently observed at a World Economic Forum meeting in Sao Paulo on Financing for Development that unless an official guarantor is taking a first loss or majority of the risk, it should consider “following the fortunes” of a collaborating monolines with respect to the exercise of rights and remedies in the event of technical or financial defaults, remedial restructurings, workouts and loss recoveries but probably should take the lead in the event of defaults with respect to environmental, labor law and other social policy requirements.

***Annex 1: Market Participants Contacted***

Market Segment	
Rating Agencies	William Chew, <i>Managing Director</i> , Corporate and Government Ratings, Standard & Poor's, New York John Bailey, Director, Corporate & Infrastructure Ratings, Hong Kong Raymond Woo, S&P, Hong Kong Chee Mee Hu, <i>Senior Vice President</i> , Corporate Finance, Moody's Elizabeth Allen, Fitch Ratings, Hong Kong
Portfolio Managers,	Kunna Chinniah, Government of Singapore Investment Corp.:
Private Equity Investors	Robert Graffam, MD, Darby Overseas Investments, Washington, DC Simon Sham, Darby Overseas Investments, Hong Kong Don Roth, Emerging Markets Partnership David Yeung, Executive Director, AIG Direct Investments, Hong Kong Mr. Vijay Pattabhiraman, Emerging Market Partnership, Singapore
International Commercial Banks / Investment Banks	Ms. Mariko Nakamura, Director, Project Finance / Global Specialized Finance, WestLB AG Tokyo Jasper Wong, Executive Director, WestLB, Hong Kong Chan Yuet Ming, Head of Structured Finance, Commerzbank Eddy Chao, Commerzbank Jonathan Drew, HSBC, Hong Kong Au Yeung, JP Morgan, Hong Kong Peter Ho, Citibank, Hong Kong Vijay Sethu, Executive Director, Project / Structured Finance Asia, Singapore Gary Watmore, Head of structured trade finance, ABN AMRO Raj Shaourie, Deutsche Bank Stephen Edwards, Integrated Energy, ABN AMRO Hong Kong Rahul Mathur, SMBC, Singapore Alix Burrell, BNP, Singapore Mr. Bruntraeger, Commerzbank, Singapore Richard Krause, ABN AMRO, Singapore
Regional Intermediaries	Leow Soon Guan, Vice President, Project Finance & Syndications International UOB Mr Tan Choon Seng, Mr Kim Khee Shin, Mr Boey Yin Chong, DBS Group, Singapore Khun Sommai Ungsrithong, SVP, Sector Manager, Siam Commercial Bank, Bangkok Ms. Niramarn Laisathit, Bangkok Bank Limited, Bangkok Ms. Amporn Thongprasert, Bangkok Bank Limited, Bangkok
Multilateral Agencies	Suman Babbar, <i>Principal Operations Officer</i> , Project Finance and Guarantees, The World Bank Javed Hamid, IFC, Hong Kong Christian Delvoi, World Bank Khun Renuka Khun Kirida, World Bank, Bangkok Martin Spicer, Principal Investment Officer, IFC, Bangkok Philippe Valahu, MIGA Peter Jones, MIGA David Scott, IBRD

Bilateral Agencies	Mr. James Cruse (policy area), John Richter and Charles Barnett of US EXIM Bank Julia Leung, HKMA Kanwin Thansupanich, Acting Director, Public Debt Management Office, Bangkok Ms. Pantip, Director General of the State Enterprise Office, Bangkok Dr. Pallapa Ruangrong, Director, SEPO Nattaporn Changkairi, Fiscal Analyst, SEPO Ruth Ann Nicastri, Director of Insurance for Latin America and Asia, OPIC Dick Corrigan, Direct Project Management and Special Assets, OPIC Steve Everhart, Chief Economist and Director of Risk Management, OPIC Bill Miller, Project Officer for Tiete and Cal Energy, OPIC Tom Mahaffey, Associate General Counsel for Special Assets, OPIC
Market regulator	Mr. Xiang YE, the Senior Manager of Securities and Futures Commission, Hong Kong (discussion was on Chinese markets)
Monolines and Other Private Risk Insurers	Alistair McVeigh, Executive Director, Global Markets, Structured Financial Solutions, Willis Limited Audrey A Zuck, Willis Limited Price Lowenstein, <i>President and CEO</i> , Sovereign Risk Insurance Ltd T. Wynne Morriss, <i>Senior Managing Director</i> , XL Capital Assurance Inc. Douglas Renfield-Miller, <i>Managing Director, International</i> , Ambac Assurance Corporation Francisco de la Hoz Francisco Managing Director, XLCA, Singapore Jack Caouette, Vice Chairman, MBIA Roger Shields, <i>Managing Director &amp; Economist</i> , MBIA Hai Hoang, Managing Director, MBIA Poh Choo Lee, MBIA (Singapore) Pte. Ltd. <i>Michael S. Horn, FSA, Singapore</i>
Lawyers	Barry Metzger, Partner; Coudert Brothers, former General Counsel of ADB Peter Cleary, Freshfields, Hong Kong Mr Paul Elliott, Partner, Baker & McKenzie:
Accountants	Robert Montgomery, PwC Project Advisory Pte Ltd, Singapore
Project Sponsors, etc.	David Blaisdell, Bechtel Marcia Burkey, CFO, Bechtel Ralph Zimmerman, VP Structured Finance Group, Bechtel Bob Morris, InterGen Alan Chan, Hopewell, Hong Kong Mr Herman Bosquet, SVP, International Operations, SembUtilities, Singapore Rajiv Mishra, Deputy MD / CFO, BLCP Power Ltd. Khun Niwat Adirek, SVP, Khun Saranya Nisamaneephong, VP Project Development, EGCO

*Annex 2: Chinese Corporate Bond Markets*<sup>62</sup>

Given its weak banking system, China needs to open up other channels of local currency intermediation, primarily via domestic bond markets. At present, corporate bonds are issued predominantly by large state-owned enterprises to finance projects in the energy, telecommunications and transportation sectors with no private sector borrowers issuing bonds since 2000. Under a decade old regulation, bond interest rates are negotiated with the government and limited to 140% of the Peoples Bank of China's deposit interest rates. Virtually all new issues have been rated triple-A and issued with more or less identical interest rates. The 140% cap results in a very favorable interest rate, roughly 50 basis points (after tax) over government bonds and has probably prevented the development of credit spreads.<sup>63</sup> The role and development of the corporate bond market is under review by the State Development Planning Commission, which is expected facilitate market access for private sector companies, among other items. Currently, corporate bonds must be guaranteed, unless rated triple-A without a guarantee, or if the supervisory authorities have waived guarantees. Guarantees are typically provided by China's state-owned banks, which charge a one-time fee of around 50 basis points.<sup>64</sup> Under the Guarantee Law, no government agency may issue a guarantee. Guarantees reduce the incentive for investors to assess credit risks and limit bond market access for private sector firms as they would likely have a less privileged access to state-owned banks' guarantees.

The institutional infrastructure does not currently promote the development of a credit culture because of administered prices for bonds and guarantees, neither of which discriminate on the basis of credit. Since all corporate bonds are issued and/or guaranteed by entities perceived to have state backing, there is little credit differentiation and ratings have limited impact on pricing of bonds. It is no surprise that there is virtually no community of financial analysts nor dissemination of credit analyses by the rating agencies or the dealer community, except for primary offerings. At present, around 20 companies purportedly offer credit ratings (including for convertible bonds) but for most of them, corporate advisory and other services are the primary sources of income as the ratings business is probably not profitable. International credit rating agencies do not yet play a meaningful role in the market but can be expected to if a genuine corporate bond market and a credit culture develop. The ratings business may be changing as regulations now stipulate that all corporate bonds must be rated and a recent edict has the effect of limiting the business to five companies, still probably too many to specialize only on ratings for survival in a fledgling corporate bond market.<sup>65</sup>

In principle, publicly issued corporate bonds can be subscribed in the primary market by any domestic investor, except for commercial banks, which may not invest in corporate bonds. The *de*

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<sup>62</sup> Based on World Bank paper by David H. Scott and Irene S. M. Ho, "China's Corporate Bond Market: Creating New Options for Infrastructure Finance", June 2004.

<sup>63</sup> Interest income on government bonds is tax exempt. Interest income on corporate bonds and financial bonds is taxed at 20%.

<sup>64</sup> In a few cases the issuer's affiliated group companies provide guarantees. For example, the 2003 Petrochina RMB1.5 billion issue due 2013 is guaranteed by Petrochina Finance Co. Ltd. Another exception is the Three Gorges Development Company, whose issues are guaranteed by the Three Gorges Development Fund, financed by a monthly electricity surcharge collected by MOF since 1992.

<sup>65</sup> National Development and Reform Commission has stipulated that new bond issues shall be rated by credit rating agencies which were engaged in corporate bond credit ratings since 2000.

*facto* prohibition on commercial bank investment in corporate bonds limits potential demand and the liquidity of corporate bonds. The secondary market is thin and limited to trading on the stock exchange. Insurance companies hold about one-half of the RMB110 billion in corporate bonds outstanding.<sup>66</sup> The other principal investors are investment funds of various types, rural credit cooperatives<sup>67</sup> and finance companies affiliated with large state owned enterprises. No regulatory authority has responsibility to educate potential investors on corporate bonds. Regulations for insurance companies, pension funds, and securities investment and mutual funds permit investment in corporate bonds within some limits, but the regulations do not appear to reference ratings or credit quality.

Developing a viable domestic bond market will take a sizable commitment to build capital markets infrastructure including a wider investor base (pension funds, insurance companies, mutual funds, etc.) and related regulatory infrastructure for such investors, better disclosure standards for private placements and public issuance, credible and viable domestic credit rating agencies (which may require that they are regulated and licensed), the privatization of the guarantee business (e.g., via encouragement of a monolines and multiline financial guarantors) extension of maturities through innovative uses of credit enhancement, regulations permitting the development of investor and municipally owned utility bonds, sub-sovereign municipal bond markets and institutions, the development of currency and interest rate swap markets and a greater role for free market, e.g., in setting bond prices and interest rates as well as in using and charging for guarantees.

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<sup>66</sup> At the end of 2003, six percent of the insurance sector's RMB838 billion investment portfolio is comprised of corporate bond investments (source: China Insurance Regulatory Commission).

<sup>67</sup> While rural credit cooperatives would seem to be subject to the same corporate bond investment restrictions applicable to commercial banks, reportedly this restriction is sometimes not enforced.

*Annex 3:  
Potential Benefits of Sovereign Ratings for XYZ land*

*Why should we get a credit rating, given the time and expense involved?*

- A rating is a “passport” to a wider audience of creditors and investors. It will help attract the international capital that XYZ Land needs to develop the country.
- A rating opens up an important alternative financing option, often more cost-effective and longer term than bank loans.
- It prompts foreign investors to take notice of XYZ Land since an independent assessment has been done.
- A rating will bring XYZ Land further into the global financial community and help meet international standards of transparency and cooperation.
- A rating exercise provides a taste of the kind of international scrutiny the Government must expect in today’s interdependent world. It forces a certain awareness and discipline on government officials.
- Having no rating at all implies to investors that the country cannot get a rating and must have defaulted in the past.
- A rating will enable the Government to estimate borrowing costs more accurately.
- The rating agencies look beyond current economic conditions and “through” the cycle at a country’s underlying fundamentals. Current political uncertainties or low commodity prices usually do not penalize the rating.
- If the Cook Islands, Ghana, Cuba, Kazakhstan and Suriname can get a rating, so can XYZ Land, which has many advantages.
- A first-time rating would be a path-breaking event and an important legacy for the current Government of XYZ Land.
- Requesting a rating avoids an imposed unsolicited rating and allows you to be in control of the process.

*What if the rating is low? What good will it be?*

- Any rating is better than no rating. Without a rating, investors assume the worst.
- A rating shows you have passed a test of international scrutiny that half the world’s nations have not passed.
- A first-time rating can be indicative and confidential, not released to the market.
- One must start somewhere. Ratings can be raised in the future.
- Any rating adds new information to the market, assisting investor evaluations.
- A low rating is not a national insult; it is simply an outsider’s opinion of a country’s current credit status—an opinion that will change over time.

*Annex 4:  
Sovereign Rating Criteria*

Sovereign ratings are determined by the rating agencies through application of their sovereign ratings criteria. Though different agencies use similar criteria, the weights they assigned to the same factors are probably different. The criteria include both political willingness to repay debt on time and the economic ability to do so.

The assessment of political risk is quite subjective and focuses on such factors as (in no particular order): the level of education and political awareness, the presence of social and ethnic differences and tensions, the extent to which a Western-style democratic tradition and institutions exist, the process by which political conflicts are resolved, the process of transition in political leadership, the ability to understand economic difficulties and take sustained policy actions to correct structural economic and financial imbalances whenever this becomes necessary, etc.

The economic ability to repay debt is determined through a careful and often highly quantitative examination of five factors. First, the agencies examine the structure of the country's external balance sheet, using both narrow and broad measures of the country's external assets and liabilities. A key goal is to measure the structure and the burden of external debt (both public and private) and the adequacy of international reserves.

Second, the agencies assess balance of payments flexibility, including the compressibility of imports and the prospects for growth in exports (which may depend on product and market mix of exports as well as wage and price competitiveness) and the ability to attract foreign direct as well as portfolio investments.

Third, the agencies examine the structure of the economy, the level of development, the adequacy of economic and social infrastructure, diversity of production, natural and human resource endowment, the rate and composition of economic growth, and the benefits (if any) of membership in any regional trading or economic or currency co-operation zones.

Fourth, the agencies consider the government's ability to maintain internal and external financial balance, especially under economic stress, through the development and implementation of effective structural adjustment measures and the receptivity of the political environment to the sustainability of difficult reforms.

Fifth, the agencies assess the country's economic outlook in generating growth without excessive imbalances, with an emphasis on the outlook for budget deficits, exports, the current account balance, and external debt service.

*Annex 5: Lessons from Selected Project Financings*

Project	Country / Sector	Lessons
1. EGAT	Thailand / power	Bond issue with IBRD rollover guarantee provided access in the immediate aftermath of the Asian debt crisis, with extended term, lower cost and higher ratings
2. AES / Tiete	Brazil / power	Importance of fundamentals. Did not consider worst case. OPIC's liquidity guarantee to cover devaluation risk not used in the restructured transaction.
3. Rutas Del Pacifico Toll Road Project (SVV)	Chile / toll road	A triple-A rated structure with IDB and FSA as co-guarantors permitted a domestic, 23-year, fully-wrapped issue in Chile. Example of monoline / multilateral collaboration to extend maturities and enhance credit ratings
4. Hong Kong Link 2004 Ltd	Hong Kong / transportation	A municipal revenue bond-like financing with a pooling of revenues from five tunnels and one bridge to diversify cash flows; also recourse to Hong Kong government purse. Monolines were unable to add value.
5. Hero Asia	China / power	A relatively loosely structured financing worked out because of sound fundamentals (even attracted a monoline guarantee in a secondary trade)
6. Manila Water / Maylinad	The Philippines / water	Choice of experienced concessionaire is critical. Post-privatization price / services expectations of regulators should be realistic; Contract terms should be clearer on disallowances and penalties.
7. Paiton 1 and 2	Indonesia / power	Though PLN did not abide by contractual obligations, positive project fundamentals were ultimately reflected in successful restructurings rewarding the persistence and patience of the sponsors, the banks and the government.
8. Road King	China / toll roads	Importance of viable projects and pooling of risk. Successful exit via an IPO.

**Box 1: Electricity Generating Authority of Thailand (“EGAT”)**

\$300 million bullet bond issue maturing 2008 issued October 1998

**Purpose of Financing:** The financing, issued on October 14, 1998 was intended to attract working capital in the international markets.

**Summary of Financing:** Global capital market US dollar denominated financing (US 144A placement) underwritten by ABN AMRO yielding 285 basis points over the like maturity US Treasury index. Ratings of A- and A3 from Standard & Poor’s Corporation (S&P) and Moody’s Investors’ Service (“Moody’s”), respectively based on partial credit guarantees provided by the International Bank for Reconstruction and Development (World Bank) and the guarantee of timely payment of each of the 20 semiannual interest payments by the Kingdom of Thailand (Thailand), owner of EGAT. The ratings reflect the World Bank’s preferred creditor status, reflecting the incentives for Thailand to place priority on repayment to the World Bank and other multi-laterals, which is three notches above S&P’s BBB- global scale foreign currency rating for Thailand and four notches above Moody’s Ba1 (non-investment grade) global scale foreign currency rating for Thailand. The World Bank guarantee covered guarantee of principal on a non-accelerable basis payable only on maturity of the bonds in October 2008 and one semi-annual interest payment, up to \$10.5 million on a rolling basis. The World Bank would make such interest payment should EGAT fail to make the payment and Thailand subsequently failed to honor its guarantee of such payment. The rolling provision maintains the World Bank interest guarantee provided that Thailand reimburses the World Bank for any interest payment made pursuant to the guarantee within 60 days of disbursement.

**EGAT:** State owned and Thailand’s main source of electricity generation and the leading provider of transmission services. Two other state-owned distribution and supply companies purchase all of their needed electricity from EGAT.

**Kingdom of Thailand:** Owner of EGAT providing sovereign guarantees of all EGAT debt obligations and provides liquidity support, capital infusions, and a supportive regulatory environment to EGAT. EGAT is able to implement timely rate adjustments to cover increased costs arising from increases in fuel prices as well as exchange rate fluctuations.

**World Bank:** Participation was essential to the successful launch of the issue, the first issue by an Asian borrower into the international capital markets. World Bank participation enabled this issue to pierce the sovereign ceiling and was sufficient to secure investment grade ratings from Moody’s and S&P. The benefits of the World Bank guarantee were quantifiable by a yield requirement at the time some 300 basis points lower than that of Thailand which in turn reflected a split rating of investment grade from S&P and non-investment grade from Moody’s. This issue was considered a bellwether for use of partial credit guarantees to address specific economic risks and investor concerns.

**Risks:** Liquidity risks arising from disruptions in collection of tariffs from cash-strapped customers as well as risks connected with payment of US dollar denominated debt by local currency denominated revenues.

**Mitigants:** World Bank guarantee is denominated in US dollars and additional 60-day period in which EGAT could repay the World Bank to reinstate the rolling coupon guarantee.

**Lessons:** Use of partial credit guarantee can enable an issuer to successfully launch a well-rated international capital markets issue, even overcoming a split investment grade/non-investment grade sovereign rating.

**Box 2: AES Tiete 11.5% \$ 300 million 15-year trust certificates issued in May 2001**

**Purpose of Financing:** Refinancing of loans from Brazil's development bank Banco Nacional de Desenvolvimento Economico (BNDES) in 1999 to finance the AES Corporation purchase of a 38% interest in Companhia de Geracao de Energia Eletrica Tiete (Tiete), a 10 dam privatized hydroelectric project, from CESP, a state-owned utility. Tiete will operate the dams pursuant to a 30-year Federal concession agreement.

**Summary of Financing:** The certificates are structured as a securitization of dividends from Tiete arising from local currency revenues that flows upstream from Tiete through two Brazilian holding companies to AES Tiete Holdings Ltd, a Cayman company wholly owned by AES that in turn issued a note to Tiete Certificates Grantor Trust, a New York Trust, issuer of the trust certificates. The certificates are structurally subordinated to Tiete's debt, preferred dividends, and minority common dividends. The trust certificates were supported by a devaluation credit facility intended to cover debt service payments for Tiete if a devaluation of the Real makes it impossible for the company to service its debt or transfer funds offshore provided by the bi-lateral US Overseas Private Investment Corporation (OPIC) consisting of \$30 million in devaluation risk insurance in the form of a standby liquidity guarantee facility plus \$85 million in inconvertibility insurance. The trust certificates, rated BBB- by Fitch Ratings and Baa3 by Moody's Investors' Service represent the first power project to obtain an investment grade rating notwithstanding a non-investment grade sovereign and at the time was the longest tenor issue by a Brazilian corporate entity.

**Participants:** Tiete is a ten dam operating hydroelectric company operating in the state of Sao Paulo. The location of Tiete's plants in three separate river basins reduces vulnerability to low rainfall. Existing contracts with six electricity distributors were to have been phased out between 2003 and 2006 and replaced with a 15-year power purchase agreement with the Sao Paulo distribution company, Eletropaulo, also owned by AES. In 2004, Eletropaulo is projected to provide some 70% of Tiete's revenues.

AES, a Virginia based power company involved in three utilities in Brazil, Eletropaulo, Tiete, and AES Uruguiana.

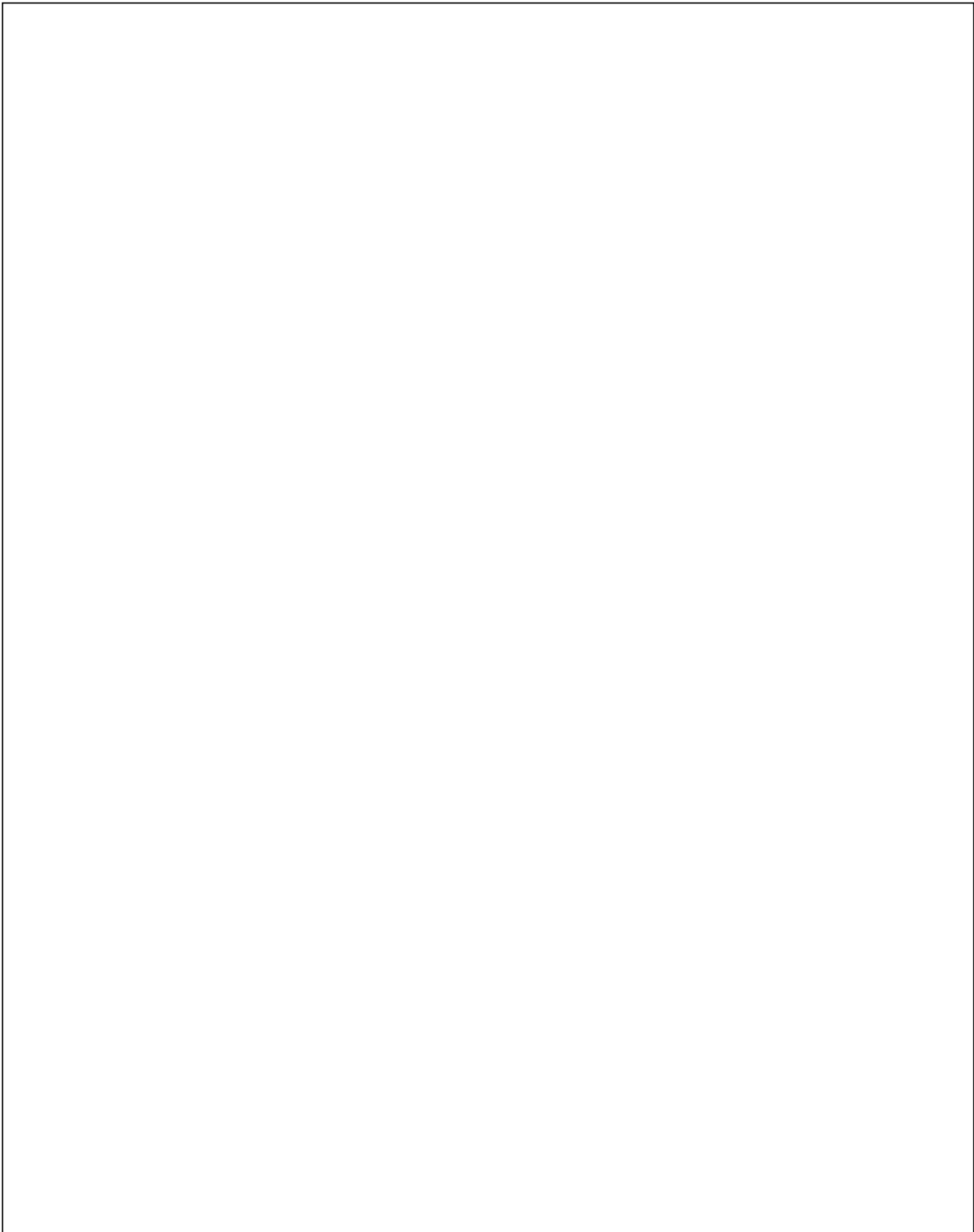
**OPIC:** Provided a revolving stand-by credit facility covering shortfalls in debt service attributable to devaluation or depreciation of the Brazilian Real. The facility established a floor for the value in U.S. dollars of project revenue, with OPIC obligated to pay up to \$30 million should the project revenues, after conversion to US dollars, fall below the floor and prove insufficient to pay scheduled debt service. This credit facility was in addition to \$85 million in inconvertibility insurance. As such, the devaluation coverage was an adjunct to OPIC's established capital market inconvertibility policy.

**Risks:** The greatest risk perceived by investors is devaluation risk arising from the mismatch between revenue denominated in local currency repaying obligations denominated in US dollars.

**Mitigation:** OPIC facility covering both devaluation and inconvertibility. Combined with the inconvertibility protection the devaluation facility enabled investment grade ratings to be assigned to the trust certificate issue. OPIC analyzed a range of possible devaluation scenarios and compared that to the cash flow projections in hydroelectric projects. The scenarios considered excluded that of an external shock causing a major devaluation of the Brazilian Real, considered exceedingly low probability. In order to minimize the likelihood of a draw on the devaluation facility, Tiete was required to maintain an offshore debt service reserve in the amount of 1.4x the amount of debt service.

The OPIC facility segregated devaluation risk from operating risk and as such did not consider the realized worst-case scenario of a project failing in local currency terms. The failure of the project in local currency terms was largely due to rationing imposed by the government resulting from low rainfall which in turn reduced usage and hence revenues. OPIC found itself in the position of needing to honor requests for disbursements even though there were no funds available from operations available to pay debt service because OPIC was obligated to make disbursements, estimated at \$5 million, based on net revenue projections rather than actual performance. Due to high inflation during 2002 and the first quarter of 2003 which negatively impacted net income given the structure of existing power purchase agreements, Tiete was unable to meet its obligations to certificate holders and utilized an intercompany loan to make the December 2002 payment and needed to draw on the debt service reserve as well as file a claim with OPIC to meet shortfalls.

**Lessons:** The eventuality of unanticipated liquidity shortfalls arising from a rationing of power due to low rainfall meant that Tiete could not generate sufficient income from which to cover obligations senior to the certificates and then pay dividends from which to service the certificates.



**Box 4: Hong Kong Link 2004 Ltd.**

In April 2004, the Hong Kong Special Administrative Region (HKSAR) raised HK \$ 6.0 by securitizing the future net revenue from its five existing tunnels and one bridge/road link (Tolled Facilities) through the issuance of five tranches of notes and retail bonds (the “Issue”) in maturities ranging from one to twelve years. These Tolled Facilities are vital links within Hong Kong’s transport network and charge a lower toll rate than privately owned tolled facilities.

The issuer, HK Link, is a special purpose entity wholly owned by HKSAR. Proceeds of the Issue are channeled back to HKSAR via HK Link’s subscription of a back-to-back toll revenue bond issued by HKSAR. Debt service and other payments required with respect to the Issue will come from the net revenue from the Tolled Facilities, supplemented by direct payments from HKSAR to mitigate risks under certain specified circumstances including potential interruption of operations for extended periods, failure of the operators to remit net revenue, change in toll rates or the scope of work by the respective operators which would have the effect of reducing net revenue beyond a certain threshold. In addition, HKSAR will fund a debt service reserve at closing in the amount of HK\$320 million, sufficient to fund approximately four months of debt service and other required payments. This reserve, replenished through the debt service payment waterfall, must be maintained throughout the life of the Issue.

Ratings of the issue reflect the global scale local currency ratings of HKSAR, AA-/Aa3/AA- by Standard & Poor’s, Moody’s, and Fitch, respectively taking into account the strength of the revenue flow from the Tolled Facilities, augmented by the obligation of HKSAR to make direct payments to mitigate risks under specified circumstances and to maintain the debt service reserve.

This Issue is like a municipal project revenue bond issued in the United States. Its issuance may encourage investment in infrastructure by retail investors. From market soundings, the cost to HKSAR for this issue was about ½ percent higher than a comparable direct issue of HKSAR, reflecting the complexity of the security structure of the issue.

**Box 5: Hero Asia**

US\$110 million notes due 2001

In 1994, Hero Asia, was established as a special purpose entity incorporated in the British Virgin Islands for purposes of issuing US\$ 110 million of notes due in 2001 (the Notes) through a Rule 144A private placement to finance Hero Asia's investment in two greenfield coal-fired base-load power plants located in Jiangsu province. Hero Asia was owned by Hero Asia Investment Limited (Hong Kong) itself established by China's Ministry of Electric Power (MOEP), now called the State Power Corporation and Hero Asia's indirect parent, the Long Yuan Group, was a state-owned-enterprise wholly-owned by the MOEP. The Offtakers for each plant are municipal and provincial power authorities.

As Hero Asia did not have direct access to any project cash flows, it relied primarily on cash distributions from the two projects in the form of dividend payments to meet debt service obligations on the Notes. In addition, MOEP provided a "comfort letter", albeit unenforceable, agreeing "to do its utmost to support, assist, and cause Long Yuan Group to meet its debt obligations" while Long Yuan group committed "take all measures necessary, including use of its own assets, to assist Hero Asia in satisfying its payment obligations under the notes". New York law applied to the Notes and the trust account while underlying project related documents were governed by Chinese laws and regulations, which may be open to inconsistent interpretations and actions. The Note ratings were equal to that of a Chinese ministry, a notch below the sovereign rating. Ratings reflected the strong project fundamentals, a requirement for a debt service reserve in the amount of one semiannual debt service payment maintained with an offshore bank, as well as the "implicit support of the state" to honor MOEP's support to Hero Asia on a timely basis.

The Rule 144A issuance format was chosen because institutional investors could compensate for acceptance of political risk through higher yield whereas a bank credit committee would be loathe to approve a transaction relying on an unenforceable comfort letter, loose documentation, poor financial disclosure, and the arbitrary outlook for tariffs not known or contracted at the time of Note issuance. Construction was completed on schedule and amortization of the Notes began on schedule in 1997. The Notes were repaid in full at maturity on October 15, 2001 and at the time of repayment, was the only rated China project to repay in full upon maturity.

**Box 6: Metropolitan Waterworks and Sewerage System (MWSS)**

In 1997, the Philippine government privatized the Metropolitan Waterworks and Sewerage System (MWSS), a government owned and controlled corporation providing water and sewerage services to 14 cities and municipalities with an aggregate population of 11 million and a land area of 2000 square kilometers. The privatization was accomplished through concession agreements rather than a sale of assets or ownership interest in the system. The service area was split into two concessions, with the West concession awarded to Maynilad Water Services and the East concession awarded to Manila Water Company. MWSS was reduced to being the regulator, monitoring and enforcing the concession agreements.

Element	Manila Water Company	Maynilad Water Services
Concession	East	West
Ownership of Concessionaire	Ayala Land, Bechtel, United Utilities, Mitsubishi Corp	Benpres Holdings Corp (60%), Suez Lyonnaise des Eaux
Term of Concession	25 years	25 years
Performance Bond	Yes	Yes
Tariff Rate	Ps 2.35 per cu m	PS 4.97 per cu m
Financing Sought	US\$75 million	US\$465 million
Achieved Financial Closure	Yes	No. Primarily attributable to Benpres financial problems. Bridge loan was extended by lending group and Maynilad defaulted in January, 2004
Current Structure	Same	Maynilad terminated concession in February 2003. Benpres shares were assumed by MWSS in April 2004 with an option to reoffer them to the private sector in five years.

While the MWSS privatization process itself involved a great degree of competition and transparency, a crucial flaw was the government’s fixation on reducing tariffs post privatization. Hence, the winning bids offered unsustainably low tariffs, especially since billed volumes turned out to be lower than projected. The East concessionaire, Manila Water, achieved low post privatization tariffs by cutting both operating and capital expenditures during the first five years of the concession and the project has been a success. The West concessionaire, Maynilad, made poor decisions. First, it cut capital expenditures but has operating cost overruns, some of which were disallowed when tariffs were reset at the end of the fifth year. Second, Maynilad did not achieve financial closure and has not paid concession fees to MWSS since March 2001. As MWSS was relying on these concession fees to pay debt service on its obligation, it was forced to incur additional debt to avoid defaulting on its existing debts. Third, though less efficient, Maynilad ended up with the lion’s share of foreign exchange risk.

**There seem to be three major lessons.** First, privatization should not be oversold with unrealistic expectations on post privatization tariff reductions and service improvements. Second, contracts should provide clear terms for disallowing expenditures from reimbursement formula and for levying fines for failure to meet service obligations.

### **Box 7A Paiton 1 Restructuring**

In the mid 1990s Indonesia was regarded as an Asian miracle with strong economic fundamentals. Accordingly, there was no shortage of potential debt and equity investment into the country. GDP growth was strong and electricity demand in the Java-Bali grid was projected to increase almost exponentially. Given the investment climate, the government expected that its sovereign credit was not needed to finance power generation programs. The government developed the concept of the Paiton complex, with four projects. The first of the projects, Paiton 1 at the time represented the largest IPP to be financed on a project basis in a developing country and was envisaged as the template for other IPPs in Indonesia. Paiton 1 achieved financial closure in 1995 with a structure consisting of political and credit risk insurance and guarantees from the Export-Import Bank of Japan (now JBIC), the Ministry of Trade and Industry of Japan (now NEXI), OPIC, and USEXIM. Under the umbrella of these ECA risk mitigators, a large syndicate of commercial banks extended construction and term financing. In addition, the project sponsors, Edison Mission Energy, Mitsui, and General Electric Capital Corp. contributed contingent equity to support completion. Finally, in 1996, \$180 million of senior secured bonds were sold into the US capital markets via a rule 144A placement on the basis of investment grade ratings from Standard & Poor's and Moody's.

When the Indonesian economic and political crisis ensued in late 1997, the off-taker (PLN) made it clear that it would not be able to take power from Paiton 1 nor pay for it when the project became operational in 1999. The project needed to resolve two immediate issues, a scheduled principal payment and second, the commitment for USEXIM to take out the commercial banks' construction loans. Shareholders and lenders opted against seeking redress through international arbitration on both issues, considering it in their best interests to reach a mutually acceptable long-term solution. The lenders agreed to forebear on the payment of principal, the USEXIM agreed to extend its term loan commitment, and the sponsors agreed to allow the use of contingent equity to make interest payments to the commercial banks.

The US\$ 1.729 billion restructuring was consummated in February 2003. As a part of the restructuring, JBIC and USEXIM funded non-recourse term loans for US \$506 million and US\$381million, respectively, the first commitments of new debt to the Indonesian project finance sector since the onset of the Asian crisis in 1997. In addition, OPIC provided a US\$200 million guarantee of investment and NEXI insured the commercial bank financing.

The success of the restructuring came because each party to the project, equity investors, bi-lateral agencies, commercial banks, the EPC contractors, fuel supply counterparties and the off-taker shared equitably the burden to create a viable financing structure. There was no haircut on lenders' principal or sponsors equity and sponsors will receive a "reasonable return" on their investments.

**Box 7B: Paiton 2 Restructuring**

The consummation of the restructuring of PT Jawa Power Co., Paiton 2, followed closely completion of the Paiton 1 restructuring. The sponsors of Paiton 2 are currently Siemens Power Ventures, PT Bumipertiwi Tatapradipta, and Powergen with Powergen expecting to close the sale of its 35% interest to Keppel of Singapore and J Power of Japan. The restructured facility, five tranches totaling US\$1.365 billion will have the same maturity as the original facility with lenders sustaining no haircut on principal. USEXIM is involved in this transaction to the extent of taking out 75% of a construction facility totaling US\$389 million. German ECAs and government funding sources are involved in two tranches and there is a US\$200 Rule 144A million private placement into the US institutional market with no political or commercial risk cover.

**Box 8: Road King**

Road King Infrastructure Limited is a leading Hong Kong listed company with its core business in the investment, development, operation and management of toll roads and other infrastructure projects in China. At the end of 2003, Road King had an investment portfolio of HK\$5.3 billion, comprising 21 toll roads and bridges spanning over a thousand kilometers with 63 toll stations in 8 provinces of China.

The company was established in 1994 by Wai Kee Holdings Limited and AIG Asian Infrastructure Fund L.P. and was first listed on the Hong Kong Stock Exchange in July 1996. The portfolio of investments is diversified with little reliance on any single project. Management is hands-on and prudent with a conservative growth strategy. The company achieved its first international rating of BB from Standard & Poor's in 1998, which was upgraded in 2002 to BBB-, investment grade, where it still remains. The rating reflects a conservative capital structure and strong debt service protection measures. Road King is poised to benefit from strong growth in vehicle ownership in mainland China, but is exposed to risks associated with changes to toll-road tariff policies, and potential competition.

Shenzhen Investment Ltd. purchased a 24% stake in Road King in January 2004 from Stagecoach Group PLC (Stagecoach; BBB-/Stable/A-3), which maintains a 5.6% interest. The change in ownership is not expected to have any impact on Road King's operations. The company reached an agreement in the first half of 2003 to invest about Hong Kong dollar (HK\$) 905 million in the Baoding-Tianjin Expressway in China, consistent with its strategy to invest in expressways, while selling its interests in smaller highways.

Road King illustrates how a strategy of diversification and careful project selection can lead to profitable operations, an IPO and expansion through a corporate holding company structure.