

APPENDIX G

IMPACTS OF THE ASIAN FINANCIAL CRISIS ON TOLL ROAD DEVELOPMENT IN SELECTED ASIAN COUNTRIES

A. Overview

1. **Status of Toll Road Development.** Over the last two decades the demand for high-standard highways in these countries has increased substantially—a reflection of rapid economic growth and increasing levels of vehicle ownership and use. Average annual growth of real GDP in these countries between 1990 and 1996 ranged from 2.8 percent in the Philippines to 10.1 percent in China.¹ Because of the limited resources available to the public sector for financing infrastructure development, many countries have turned to tolling as a promising method for funding highway development. Each the five countries has adopted private-sector concessions as their dominant mode for designing, building, financing, and operating their toll roads.

2. The current status of toll road development in these countries is presented in Table 1. Based on the existing information, among the five countries, Malaysia was the first to introduce toll roads (in 1966), while China now has the greatest total length in service. Most of the early stages of toll road development were advanced by public-sector highway authorities (see Table 2), while the private sector has become involved with toll roads in each of the countries primarily within the last ten years. Among these countries, one of the first privately concessioned toll roads was Cawang – Tanjung Priok Toll Road in Jakarta opened in 1989. Currently, the majority of ongoing and planned toll roads in the countries involve the private sector.

Table 1 Status of Toll Road Development in Selected Asian Countries, 1997-98

Country	China	Indonesia	Malaysia	Philippines	Thailand
Length of Toll Roads in Service	4,735 km	472 km	1,127 km	168 km	91 km
Length Under Construction*	1,765 km (by 2000)	237 km	298 km	148 km	304 km
Length Planned or Under Negotiation	6,500 km**	1,444 km	1,300 km	632 km	4,334 km
Grand Total	13,000 km	2,153 km	2,725 km	1,116 km	4,729 km
Sources	<i>NewsNet Asia</i> Jan. 1998	<i>World Expressways</i> 1998 (EHRF)	MHA Sept. 1998	DPWH Aug 1998	DOH, ETA June 1997

* includes projects for which construction may have been suspended

** planned in China's Ninth Road Master Plan

¹ International Monetary Fund, *International Financial Statistics Annual Report*, 1997.

Table 2 Initial Toll Road Projects in Each Country

Country	Project Name	Project Length	Project Administrator	Year Open	Source
China	Daliang–Hanyu Expressway, Shanagdong Province	92 km	--	1987	EHRF, <i>World Expressways 1998</i>
Indonesia	Jagorawi Expressway	46 km	Jasa Marga	1978	EHRF, <i>World Expressways 1998</i>
Malaysia	Tanjung Malim – Slim River Highway	20 km	JKR	1966	John G. Hunt, <i>Toll Roads: The Malaysian Experience</i>
Philippines	Balintawak – Tabang (NLE) Nicols – Alabang (SLE)	27.7 km 13.3 km	DPWH	1968	EHRF, <i>World Expressways 1998</i>
Thailand	Ding Daen – Port Area (First Stage Expressway)	8.9 km	ETA	1981	EHRF, <i>World Expressways 1998</i>

3. The Asian financial crisis that began in mid-1997 has had a variety of consequences for toll road programs in these countries. Table 2-3 presents a number of financial and economic indicators for the 1997-1998 period, illustrating the degree to which the investment environments in each of the countries have changed. The degree of impact on the toll road development programs has been the highest in Indonesia, relatively high in Thailand and Malaysia, and relatively low in the Philippines and China. Traffic volumes are down in Indonesia, Thailand, and Malaysia, but have not changed significantly in China and the Philippines.

Table 3 Financial and Economic Indicators in Selected Asian Countries, 1997-98

Country	China	Indonesia	Malaysia	Philippines	Thailand
Expected GDP Growth in 1998 (1997) ¹⁾	8.0% (8.8%)	-13.7% (5.0%)	-4.8% (NA)	1.0% (5.2%)	-7.0% (-0.4%)
Expected increase in consumer prices, 1998 ²⁾	NA (+2.8% in 1997)	+80%	+7-8%	+10%	+9.2%
Problem Loans ³⁾	NA	61%	33%	17%	48%
Currency Devaluation from 1997/1 to 1998/1 ⁴⁾	0%	-78%	-43%	-39%	-51%
Interest Rates in 1998/4 (1997/4) ⁵⁾	7.98% (10.08%)	70.68% (13.47%)	12.16% (9.25%)	13.00% (10.00%)	12.50% (10.50%)
Country Risk Rating in 1998/9 (1997/9) ⁶⁾	47.5 (59.9)	32.9 (51.8)	59.0 (66.7)	43.0 (44.3)	57.7 (57.8)
Standard and Poor's Rating in 1998/9 (1997/7) ⁷⁾	BBB+ (BBB+)	CCC+ (BBB)	BBB- (A+)	BB+ (BB+)	BBB- (A)
Traffic Volume ⁸⁾	Minimal Change	Substantially Reduced	Reduced	Minimal Change	Reduced
Degree of Impacts on Toll Road Programs ⁸⁾	Relatively Insignificant	Significant	Moderate	Relatively Insignificant	Moderate

Notes:

- 1) *Asian Wall Street Journal*, 26 October 1998
- 2) Yearly average, *Asian Wall Street Journal*, 26 October 1998.
- 3) *Restructuring Asia's Banks*, Lehman Brothers, September 1998.
- 4) Exchange rate comparison for January 1997 and January 1998 are against the U.S. dollar, *Asian Wall Street Journal* and others.
- 5) Local interest rates represent the official money rate in Thailand and the call rate in other countries as of April 1998 and April 1997. These figures may not accurately represent the actual commercial loan rates that would be available to toll road developers, as indicated elsewhere in this report.
- 6) A higher number indicates less country risk; based on country credit ratings by *Institutional Investor* in September 1998 and September 1997.
- 7) Long term debt rating in September 1998 and July 1997.

- 8) Based on interviews by the study team members in September through November 1998. Conditions in China are as reported by Hong Kong-based Chinese toll road developers.

B. General Assessment

4. Most of the countries, except perhaps for China, are experiencing financial turmoil manifested in currency devaluation, rising interest rates, and a banking sector struggling with increased numbers of non-performing loans. These problems, coupled with rising construction costs and a recession-induced decrease in vehicular traffic and toll revenues, have affected many privately financed toll road projects, with some in turn further affecting the financial sector with problem loans of their own. As a result, toll road projects throughout Asia are now being restructured to various degrees. In Indonesia, all toll road construction work has come to a complete stop, and the projects in the planning stages have been postponed indefinitely or shelved completely. In Malaysia, work goes on but the basic terms and conditions of many projects are being renegotiated, and project specifications are being redesigning.

5. **Currency Devaluation.** The collapse of the Thai baht in July 1997 triggered a drastic devaluation of currencies in all of the countries except China.² Between January 1997 and January 1998, the United States dollar value of the Indonesian rupiah decreased 78 percent, the Thai baht 51 percent, the Malaysian ringgit 43 percent, and the Philippine peso 39 percent. The impact of currency devaluation has been threefold: (1) the asset value of foreign investors has decreased in hard currency terms; (2) the prices of imported materials have risen substantially, triggering price inflation and increased interest rates; and (3) foreign debt service has become a great burden for lenders whose earnings are solely in terms of local currency (such as toll roads). However, since there are very few private-sector toll road projects in these countries that have successfully managed foreign debt financing, the problem of drastically increased foreign debt-service payments has not been prevalent.³ On the other hand, the devaluation of investment assets has had a direct impact on foreign investors, because the value of their equity is directly related to the value of the foreign currency. Toll revenues and dividend payments from the project have been affected in the same manner.

6. **Increased Interest Rates.** Increased interest rates have had a significant impact on concession-based toll road development in these countries. Interest rates have increased across the board, and spectacularly in some cases—from 12 percent in January 1997 to 60 or 70 percent in August 1997 in Indonesia, and from 11 percent in January 1997 to 34 percent in October 1997 in the Philippines. Because toll road projects are highly capital-intensive in nature, a large part of cash flow in the early years must be allocated to debt service payment. Therefore, even a small increase in interest rates may deplete a large portion of the remaining project reserves. These problems have been compounded by decreasing term lengths for fixed-rate debt. An important lesson may be that the availability of long-term, fixed-rate debt financing, preferably from domestic sources, is a key (if not essential) element for successful infrastructure project finance.

7. **Changes in Financing Structures.** The financing structures of toll road projects may provisionally be classified into the following general categories:

² The value of the Chinese renminbi and the Hong Kong dollar continues to be pegged to that of the U.S. currency.

³ A few projects in Indonesia and the Philippines are dealing with this problem, however.

- Majority local private equity and minority foreign private equity; all project debt from domestic commercial sources (Malaysia, Indonesia, the Philippines, Thailand);
- Roughly equal shares of local and foreign private equity; both domestic and foreign commercial debt (Indonesia, the Philippines, China, Thailand);
- A local public agency as the majority shareholder of a joint venture with significant foreign private equity; foreign shareholders' loans, but no domestic debt (China, Indonesia); and
- A foreign holding company financing local toll road joint ventures (either through equity or shareholders' loans), and raising funds by issuing debt securities/an initial public offering in foreign capital markets (China, Indonesia).

8. The current financial crisis has sharply restrained activity in all of the financial markets related to toll road development in these countries—domestic equity, foreign equity, domestic debt, foreign commercial bank loans, and foreign debt securities markets. This general decline in support from local and international financial markets has brought about the following changes in toll road development financing structures:

- Leading local equity investors have become weak and some projects have sought foreign equity partners—sometimes to take over the entire domestic equity portion;
- Governments are becoming receptive to considering more generous public-private risk sharing structures for priority projects;
- The involvement of bilateral and multilateral institutions is becoming more focused; and
- The equity portion of project finances may have to be increased to provide more financial security.

9. It is expected that such changes to the financing structures of the country projects will bring them closer to global standards for private-sector participation in public works infrastructure development.

10. **Changes in Debt and Equity Markets.** Most of the debt for toll road projects in these countries has been in the form of senior commercial bank loans (except in China where loans and equity from project sponsors have been the main sources of financing). Commercial banks are the traditional providers of project finance loans because they tend to be more willing and able than other debt providers to structure acceptable debt packages in the context of complex and risky project finance transactions. As such, the major source of financing for toll road projects in these countries has been loans from domestic commercial banks in each country, and both existing and future debt procurement for toll road projects has been seriously affected by the current financial crisis. Excessive non-performing loans throughout the banking sector (including some toll road project loans as well) has created liquidity problems for many banks, and brought about a credit crunch for new toll road projects.

11. Foreign commercial bank loans for toll road projects have become even more difficult to obtain. Fund raising for infrastructure through the issuance of domestic bonds has also been minimal to date, and is expected to remain inactive as long as the appetites of domestic and foreign investors remain weak. According to sources within the industry, it may be at least another six months to one year before the market will turn positive for infrastructure project lending. For both domestic and international commercial banks, the collapse of the Thai baht

in July 1997 was taken as a strong signal that the old ways of doing business were over, particularly for domestic commercial banks whose interest rates had been under government control. Rebuilding the economies and financial sectors in these countries will involve more than just recapitalizing the banks and the writing off of bad loans. The banks will need to evaluate credit in a much more risk-focused manner, with sophisticated project finance structuring and contract documentation.

12. A large proportion of toll road projects has been contractor-driven in nature. As with the commercial banks, many such toll road project sponsors (contractors) have also been hit hard by the financial crisis due to their involvement in real estate development. Many local sponsors are having difficulty maintaining their majority equity shares and some are looking for equity support from abroad. However the activities of major foreign sponsors in the region, such as Kværner, Bouygues, Dumez GTM, and various Japanese contractors, have slowed down considerably lately due to the difficulty of procuring off shore debt for their projects. On the other hand, infrastructure equity investment funds such as the AIG (American Investment Group) Asian Infrastructure Investment Fund, the Asia Infrastructure Fund, and the Asia Infrastructure Development Company (AIDEC) are continuing to pursue investment opportunities throughout the region actively. Because of the weakness of both foreign and domestic toll road project sponsors, the relative strength and appropriate role of such funds is being considered closely at this time.

C. Assessment of Impacts by Country

13. **China.**⁴ China appears to have been the least affected of the five countries by the recent Asian financial crisis; its annual GDP growth is still forecast to be eight percent for 1998. There has also been little indication of toll road project suspensions or postponements in China due to the economic crisis. There has thus far been no currency devaluation against the United States dollar as the Government has maintained its exchange rate controls. Since the Hong Kong dollar is also pegged to the United States currency, there has been no visible depreciation of equity invested in China by Hong Kong-based investors. Also, the central government has ordered state banks to increase lending in order to achieve its eight percent growth target. At least for the short term, these developments are expected to cater to the financing requirements of ongoing infrastructure projects across the country.

14. Although China plans to develop a 35,000-km system of trunk highways by 2010, requiring an investment of US\$150 billion, there remains a substantial shortfall in the financing available for implementation. Therefore, the country has been laying the foundation for substantial and long-lasting private-sector participation in its express highway sector. Traditional project finance approaches have been rarely used to finance Chinese toll road projects. The majority of foreign financing is done through equity investments and shareholder's loans to Cooperative Joint Ventures in China from parent companies abroad.⁵ In some cases, a normal project finance structure with foreign lenders has been achieved on the basis of the public sector effectively guaranteeing the project company's revenues. In most cases, though, the asset-based securitization approach has been applied to raise project funds in recent years. However, the securities markets in China and Hong Kong are not performing well at present; the leading indices of share prices have fallen about ___ percent during 1998.

⁴ The observations presented here have been prepared based on interviews made with Hong Kong and Singapore based lenders, investors, and operators of toll road projects in China.

⁵ These companies are typically based in Hong Kong SAR and they raise funds through public offerings of equity shares, issuing debt securities, and/or long term commercial loans.

It is expected that there will be some delays in near-term asset securitization-based fundraising plans incorporating bond issues and/or initial public offerings.

15. **Indonesia.** The private-sector participation-based approach to toll road development was considered to have a promising future in Indonesia until the financial crisis came. However the collapse of the domestic commercial banking sector has brought all ongoing Indonesian toll road projects to a halt. Both construction work and land acquisition has stopped on all sections. Without a revenue stream from a completed facility, many concession companies are either facing bankruptcy or suspension of funding support, or are close to default on their concession agreements with Jasa Marga, the state toll corporation. The collapse of the banking sector has also forced a number of concession companies to consider re-capitalizing their toll roads that are under construction.

16. As a result of the extreme devaluation of the rupiah during 1997-98, the hard currency portion of toll road project debts suddenly increased 6 to 7 times. At the same time, domestic interest rates have increased from 19 percent to over 60 percent per annum. The most severely hit Indonesian toll road operator has been the largest, Citra Marga Nusaphala Persada, which is facing a critical situation regarding the redemption of a Euro dollar bond due in December 1998. While labor costs have not increased, the consumer price index is expected to have risen 80 percent during 1998 compared with an 11 percent increase in the previous year. The price of petrol has also increased from 700 to 1,000 rupiah per liter and car sales are down, resulting in an estimated 15 to 20 percent decrease in traffic on the local streets and toll roads in the Jakarta region. PT Astra International, Indonesia's largest automobile manufacturer, expects new car sales to have dropped 88 percent in 1998. Real GDP for Indonesia is forecast to have decreased by 13 to 18 percent during 1998.

17. The Government of Indonesia has taken steps to restructure its toll road program in light of the economic crisis. The Government has called for a review of all ongoing projects, and is now prioritizing those to be supported by various means including soft loans from the state banks as well as "targeted" foreign investment. A total of 64 toll road projects in various stages of development have been classified into three priority categories, and only nine projects have thus far been chosen to receive support in the form of government soft loans.

18. Delays in the toll road development program will also invariably increase maintenance costs and prolong the motorized traffic capacity limitations imposed by the state-run non-toll highways. The Ministry of Public Works is currently assessing the magnitude of these impacts. The Government is also preparing new regulations of the development and award of concessions so that all projects in the planning stage would accord with national development objectives, meet cost-effectiveness goals, and be governed by fair and transparent procedures. It is anticipated that such procedures would delay project implementation and requires some projects to be redesigned. The net profit of PT Jasa Marga, the state toll road corporation and joint-venture partner to all private-sector projects, decreased by 25 percent to 114 billion rupiah during the first half of 1998. The reasons for this decline include a decrease in the number of toll road users and an increase in operations and management costs—particularly an increased debt service burden due to higher interest rates.

19. **Malaysia.** As of October 1998, there were 26 toll bridges and expressway projects in Malaysia for which concessions had already been signed. Of these, 12 projects are open to traffic, six are under construction, and eight are under negotiation. The current financial crisis has affected many of these projects, and the Government has so far been quite amenable to

adjusting the terms and conditions of concession contracts in response. In December 1997, for instance, the Government invited all project proponents that were negotiating concessions to submit alternative proposals for restructuring their projects in view of the financial crisis.

20. A representative example of the way in which this restructuring has taken place can be seen in the case of the Putrajaya–Sepang Dedicated Highway. This project has encountered difficulties in raising project financing due to the current financial crisis. Alternative proposals that would enable the project to quickly proceed with implementation have been submitted to the Government but will require additional Government funding. Objectives of the Dedicated Highway’s alternative proposal are (i) to strengthen its cash flow position, (ii) to address the low liquidity of its commercial lenders, and (iii) to reduce its estimated revenue shortfall. In order to meet these objectives, the following four measures have been proposed:

- Convert the highway’s “split” alignment to a single one;
- Convert part of the proposed elevated section to a grade-level section;
- Provide only the number of lanes necessary based on initial traffic demand; and
- Revise the construction sequencing and program.

21. Another Government initiative announced in 1998 is the establishment of an Infrastructure Development Fund of 5.000 billion ringgit to support troubled infrastructure projects. Out of the total amount, 1.800 billion ringgit is to be allocated to land acquisition costs and soft loans for priority toll road projects.

22. The Government is also attempting to refine its toll rate adjustment mechanism based on lessons learned from the case of the North-South Expressway (for which the Government has had to pay huge sums to the private-sector developer/operator on account of deferred toll rate increases). The proposed new method is to annex the forecast traffic volume to the concession agreement. If the actual traffic level is more than the forecast at a determined point in time, then the Government could request either the deferral or the lowering of the level of the toll rate increase. But if the actual traffic is less than the forecast, the concessionaire could request to bring forward the timing of toll rate increase.

23. **Philippines.** The Philippines is perhaps stronger than many of the other developing countries affected by the Asian economic crisis because it has already reformed its financial markets and “graduated” from IMF reforms. In 1993 the Philippine central bank was made independent, the financial system was liberalized, foreign exchange controls were removed, and new foreign banks were allowed for the first time since 1949. Only US\$2 million has been needed to shore up the financial sector, and it has come largely from Foreign Currency Deposit Unit (FCDU) loans of commercial banks (both domestic and overseas). There have been no major bank closures (only one or two percent), nor a collapse in the real estate sector (which has been attributed to a low rate of speculative construction). Despite a currency devaluation, the real GDP growth forecast for 1998 is still positive at 1.0 percent.

24. There has been a slight decrease in traffic on the North and South Luzon Expressways over the past year, mostly due to less large truck traffic as import/export activities have declined dramatically during 1998. The level of light vehicle traffic has remained constant. Construction costs have not changed much; steel, asphalt, and cement are all available domestically (diminishing the effect of the peso devaluation), while labor expenses have continued to increase only at the rate of inflation (15 percent per annum). Higher interest rates have made it more difficult to borrow money, however. The commercial lending rate at present

in the Philippines is 22-24 percent, whereas it was about 18 percent prior to the regional economic downturn. Ongoing toll road projects have seen no construction suspensions or slowdowns as a result of the economic crisis. Due to the Philippine's unclear and mostly private sector-driven planning process for new toll road projects, it is difficult to identify precisely any causes of delays in implementation for several projects that remain in the proposal stage. Presumably the current economic crisis is having some effect, but it is difficult to estimate how much.

25. Officials at the Metro Manila Skyway (MMS) project office indicated that the peso devaluation has not much effect on their equity investors since their shares happen to be denominated in United States dollars, and (as with all Philippine toll road projects) the toll rate adjustment formula takes into account exchange fluctuations. In addition, the primary MMS construction contracts were negotiated on a fixed lump-sum basis in United States dollars. Many of the subcontractors are being paid in pesos, a situation which has reduced costs for the main contractors. On the other hand, the Malaysian investors in the Manila-Cavite Toll Expressway project have taken an "equity hit" due to the peso devaluation, but they are expecting to recover their losses over the 35-year life of their concession (and through future toll adjustments).

26. **Thailand.** The banking sector crisis in Thailand has had some impact on toll road projects, but to a much lesser extent than in Indonesia. At 13 percent per annum, commercial interest rates are 2 to 3 percent higher now than they were before the crisis. Banks in general are less willing to lend now, due to their non-performing loan problems. The general belief is that they need to take care of their internal problems first, before taking on additional complex project finance commitments.

27. The financial crises has indefinitely delayed the start of construction on most of the free and toll highways proposed by the Thai Department of Highways in their Eighth Eight-Year Plan (1997-2001). Despite the delays in planned projects, work continues on the five toll roads that are presently under construction. The three ongoing projects with private-sector involvement provide key links to athletic sites for the 13th Asian Games to be held in December 1998, and their prompt completion was a high priority throughout 1998.

28. No Thai toll road projects have been renegotiated directly as a consequence of the recession; rather the reorganizations that have occurred have been based on project performance. For example, a restructuring of the Don Muang Tollway was brought about by a number of factors independent of the recession, while interminable delays to the massive toll road/commuter railway project proposed by Hopewell Holdings (Thailand) Ltd. substantially reduced investor confidence. There have also been no defaults yet on project loans—traffic volumes are still sufficient for the toll road companies to pay for operations, maintenance, and debt expenses. The impact has mostly been felt by investors, because drops in income have reduced profitability and shareholder return.

29. Regional growth projections, particularly for the Bangkok area, have been scaled back slightly. Growth is still expected in spite of the economic downturn, primarily due to continued migration into the region. Car sales in Bangkok over the past 12 months have totaled 100,000 vehicles, just 20 percent of the 500,000 vehicles sold annually during the previous five years. Traffic congestion has also leveled off, in contrast to 13-18 percent annual increases in previous years. Road travel speeds have increased by about 30 percent over early 1997 levels, as a result of both a decline in new cars and the addition of new road capacity for motor

vehicles. Newspaper reports tell of Bangkok's once-ubiquitous motorcycle taxi operators now losing customers since car travel is no longer so slow.