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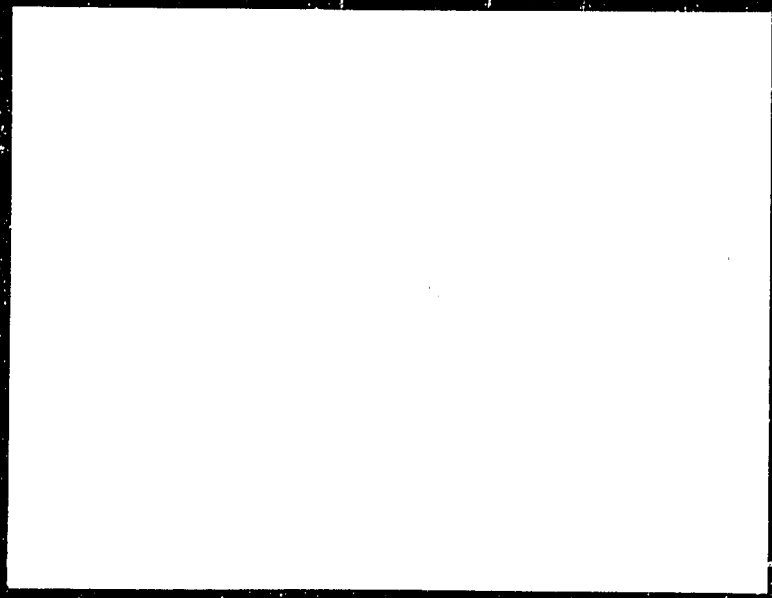

Price Waterhouse L.L.P.

ANALYSIS OF OPTIONS FOR PRIVATIZING THE PHILIPPINES NATIONAL CONSTRUCTION CORPORATION

Prepared for the
Asset Privatization Trust
Republic of the Philippines

Price Waterhouse
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EXECUTIVE SUMMARY

Analysis of Options for Privatizating the Philippines National Construction Corporation

The Philippine National Construction Corporation (PNCC) is a state-owned construction and tollway company that was taken over by the government after it defaulted on roughly P10 billion in government-guaranteed loans. Before the government takeover, the company was known as the Construction and Development Corporation of the Philippines (CDCP). CDCP was granted the franchise to operate the tollways in 1969 but came into default in 1982 after a series of non-tollway construction project failures. Following the default, the government converted a significant portion of the outstanding liens into common stock and become the dominant equity holder. Now the Philippine Government, operating through the Asset Privatization Trust (APT), is seeking to privatize the PNCC's tollways after selling off most of the Construction Division's assets. This report examines the options for privatizing the tollways and their potential effect on tollway users, the government's financial stake, and the ability to attract a buyer.

The APT recommended two basic objectives for the PNCC privatization strategy: the recovery of at least a portion of the P12 billion government financial institution (GFI) exposure in PNCC; and the improvement of PNCC's ability to operate, maintain, and rehabilitate its existing facilities, to relieve congestion on existing segments, and to provide the extensions required by the Tollway Operating Agreement (TOA).

Taken together, these objectives require that the Tollways Division of PNCC be privatized as one or more continuing, financially stable entities and not liquidated in some form of bulk sale. This limits available privatization options to the six listed below, each of which has several permutations.

1. Sell Existing Government Shares

The sale of government equity in PNCC may take the form of a public offering, a private sale, or some combination of the two. If a substantial toll increase were to be approved by the Toll Regulation Board and PNCC were to be relieved of many of its outstanding liabilities, government equity in PNCC could acquire a solid market value. Without this financial relief, however, the government wili probably find it impossible to dispose of its shares.

2. Sell New Shares

An offering of new shares in PNCC would dilute government ownership, perhaps to a minority position, but it would also help recapitalize the tollway company. The influx of equity would buttress PNCC's debt/equity ratio and thus make it easier to finance necessary expansions.

3. Sell Portion of Shares to Management/Employee Group

Management/employee equity participation can help both the economics and politics of privatizating the tollways, since it tends to improve operating efficiency, productivity, and profitability by giving workers and management a direct financial stake in the success of the enterprise and the value of the stock. There are several possible mechanisms for the company to purchase stock for the employees from future profits.

4. Privatize Operations Via A Lease

A term lease and management contract for tollway operations may be an attractive option if legal or political opposition obstructs full divestiture. The management contract would contain obligations for operating and maintaining the existing tollway in return for a fixed payment from the government. This payment would constitute the government's recovery of its outstanding investment.

5. Divide the Franchise and Its Obligations

The Tollways Division need not be sold as a single entity. Instead, the Franchise could be divided into North and South tollway companies, with the various obligations to build extensions allocated to the two companies in a way that makes privatization easier and more lucrative for the government.

6. Remove Tolls and Privatize Maintenance

The government could offer the operation and maintenance contract for bid, select the winning bidder, negotiate a contract, and make regular payments that cover allowable costs or else allow the firm to take the risk that tolls will be sufficient to cover operating and maintenance costs. Under this option, the government not would recover any of its outstanding investment, however the government would be paying less than what users are now paying because there would no longer be the expense of collecting tolls.

As a part of the options review, Price Waterhouse conducted a hypothetical financial analysis of privatization to support the APT in its evaluation of the options. This analysis is *not* intended (and is not sufficiently rigorous) to identify a likely sale price for the tollways; rather, the analysis simply provides APT with a very general idea of the financial consequences of various privatization strategies.

The key financial considerations for privatization are: (1) PNCC's poor current financial condition, with few cash reserves and little net revenue (2) the legal obligations of the TOA to build expensive extensions to the existing roadway; (3) the very low toll rates now in effect and PNCC's pending application to raise them; and (4) the impending limits on existing tollway capacity and revenue growth.

The key conclusions of the financial analysis is that the value of the tollway is extraordinarily sensitive to the rate used to discount future cash flow and that only in a low risk, high toll rate environment can the government expect to recover any of its outstanding investment. Although the discount rates used in the analysis are merely

hypothetical, the actual discount rate used will be higher or lower depending upon what steps the government takes to mitigate some of the risks for buyers. Listed below are the actions that Price Waterhouse recommends for reducing buyer risk and thereby improving the likelihood of selling the Tollways Division.

1. Large and Sustained Toll Increases Are Needed

Given the projected limitations on traffic growth and the cost of the required extensions, substantial and sustained increases in the toll rate are vital to both the saleability and financial viability of the PNCC. In addition, toll rate regulatory structure should be changed from the current cost index to a traditional utility rate-base approach that better tracks the expected market rate of return, actual revenues, and the level of capital investment.

2. Extension Obligations Should Be Restructured or Delayed

Obligations to build the extensions are likely to be financially onerous and risky for a buyer, particularly if toll rates are not raised by the full 200 percent for which PNCC has applied and if future toll rates do not keep pace with inflation. The government may find it easier to privatize PNCC by offering the existing North and South tollways separately and use a Build-Operate-Transfer arrangement for the southern extension and Metro Manila Tollway.

3. Issuing New Stock Should Be Part of Any Strategy

The establishment of an employee stock ownership trust coupled with the sale of shares to a strong management group offers a politically attractive method for privatizing the tollway while offering at least some possible recoupment of the government's losses. In addition, a new equity issue combined with discounting of the government's liens would both dilute government ownership of the PNCC Tollways and help finance the extensions by lowering the debt/equity ratio.

4. The Tollways May Be Leased As An Interim Step

Under all scenarios examined in the financial analysis, the government will have to significantly discount the book value of its existing shares and liens before PNCC can be sold. Writing down the investment may be a politically painful process, so a lease may be more appealing than an outright sale. The lessee would make lease payments back to the government based on the profitability of the tollways. This arrangement should be considered if it seems that potential buyers are too steeply discounting the value of future profits. Once the "privatized" tollway has a better financial track record, it may be sold.

Aside from these basic conclusions, there are several additional suggestions that should be considered in the privatization strategy. First, the Asset Privatization Trust should take steps to achieve, or at least identify, an optimal level of staffing and equipment, so that PNCC can be primed for sale. Second, a congestion pricing plan, with higher tolls paid by single-occupant vehicles and peak-hour travelers, should be implemented in order to improve tollway revenues, diminish the impact of toll rate increases on lower

income users, and postpone the time at which the facility reaches the limits of its capacity. Finally, a full audit of the company should be done soon in order to improve the information available to prospective buyers. This is particularly important if the tollways are to be sold in segments or to the employees.

I. INTRODUCTION

A. Overview of the Report

The Philippine National Construction Corporation (PNCC) is a state-owned construction and tollway company that was taken over by the government after it defaulted on roughly P10 billion in government-guaranteed loans. The government converted a significant portion of the outstanding liens into common stock, becoming the dominant equity holder. Now the Philippine government, operating through the Asset Privatization Trust (APT), is seeking to privatize the PNCC's Tollways Division after selling off most of the Construction Division's assets.

This report examines the various options for privatizing the tollways and their potential effect on tollway users, the government's financial stake, and the ability to attract a buyer. Chapter II includes a description and history of PNCC, including government efforts to privatize it, as well as its current financial condition. Chapter III describes the options for privatization, including the actions required to reduce the outstanding liabilities of PNCC and improve its future cash flow before it is privatized. Chapter IV details the financial implications of privatizing PNCC. The report's conclusions are included in Chapter V.

B. Objectives of the Analysis

In developing the privatization options, Price Waterhouse consulted with the APT concerning the government's objectives in privatizing PNCC. The APT assigned two basic objectives for developing a privatization strategy:

1. The recovery of at least a portion of government financial institution (GFI) exposure in PNCC. GFI exposure totals about P12 billion, originally in the form of debt and equity, which under the APT 1987 Rehabilitation Plan is converted solely into equity.

2. Improvement of PNCC's ability to operate, maintain, and rehabilitate its existing facilities, to relieve congestion on existing segments, and to provide the tollway extensions required by the Tollway Operating Agreement (TOA).

Taken together, these objectives require that the Tollways Division be privatized as one or more continuing, financially stable entities and not liquidated in some form of bulk sale. This limits available privatization options to the six discussed in Chapter III.

C. Interpreting the Analysis

Although the basic purpose of this report is to establish the options for privatizing PNCC, at least some high-level financial analysis is needed to understand the advantages and disadvantages of alternative privatization strategies. This report contains such an analysis. It is very important for the reader to note that the financial analysis included in this study is *not* a formal valuation of FNCC and its tollways. This analysis is based on hypothetical assumptions regarding traffic, tolls, costs, and the value of risk (reflected in the discount rates used). Price Waterhouse did not attempt to independently verify the assumptions or information. Moreover, the analysis does not contain the format, detail, and rigorous investigation required of a pre-sale valuation. Therefore, it provides only a broad directional (positive or negative) sense of the financial impact of privatization and the government policies that might accompany it.

The analysis has been made much more difficult by the lack of reliable financial information. The bulk of PNCC's financial records were destroyed in a fire in June of 1991. Since then, PNCC staff have spent thousands of hours poring over charred records with limited success. Fortunately for both this analysis and PNCC, Price Waterhouse's data request for their financial records was filled before the fire and so at least some pre-1991 financial information does exist. Interpreting this information is difficult for at least three reasons:

1. Discrepancies Between the COA Audit and the Current Situation

The Philippines Government Commission of Audit (COA) prepared the fiscal year 1988-89 financial statements with the assumption that many assets of PNCC would be sold and that the government would restructure its holdings according to a 1987 privatization plan. In fact, many of these actions did not take place, indicating that there is some unknown variation between the available financial statements and PNCC's actual (and ever-changing) financial condition. The financial analysis is based on PNCC's limited attempt to reconcile the COA's financial statements with what had actually taken place.

2. Recent Changes in Personnel and Policies

The lack of records and the recent changeover of financial officers at PNCC has made it difficult to determine the latest condition of PNCC's outstanding loans, its balance sheet, and the status of a number of "contingent liabilities" related to overseas construction projects that were not completed. In addition, tollway operating policies are in flux. For example, toll collections were recently suspended on the tollways.

3. A Volatile Balance Sheet

PNCC is rapidly disposing of its non-tollway assets, simultaneously raising cash while diminishing its assets. PNCC's balance sheet is changing monthly, with most of the sale proceeds going to pay government tax liens, which have priority over other debts. Therefore, this analysis concentrates on the Tollways Division alone and assumes that the proceeds from any Construction Division asset sales are not available to satisfy the outstanding government-guaranteed loans.

II. DESCRIPTION OF THE COMPANY

A. History of the PNCC

PNCC began as an investor-owned construction company called the Construction and Development Corporation of the Philippines (CDCP). The Philippine government built the metropolitan sections of the North and South Tollways in 1968, which were originally operated by the Department of Public Works and Highways. Additional sections of the road were built shortly thereafter. However, soon after the roads were opened, the CDCP, by then the largest construction company in the country, was given a management contract and, in 1977, a Tollway Operating Agreement for operating and maintaining the facility, building extensions to outlying areas, and collecting tolls. The government retained title to the roadway and the right to transfer the Franchise with "just compensation" paid to the holder.

With the creation of the Franchise, CDCP had two primary divisions, the Construction Division and the Tollways Division. Each of these divisions was financially sound through the early 1970's, but by 1982 CDCP was in financial collapse thanks largely to overexpansion and a series of non-performing investments. These investments included setting up subsidiaries in shipping, heavy machinery, and mining. The company also undertook numerous overseas construction projects, including several in Iraq that incurred large losses for CDCP after the start of the Iran-Iraq war. Finally, CDCP underbid on many of its domestic and international construction projects and underestimated their financial risks.

CDCP was partially taken over by the government when it fell behind on roughly P16 billion in debt, about P12 billion of which was owed to government banks. Renamed the Philippine National Construction Corporation, it then went on to incur more losses over the following six years until complete government takeover was achieved in 1986. By 1989, PNCC's construction business had ground to a halt, with most revenues coming from the tollways.

B. Prior Steps Toward Privatization

1. The Privatization Plan of 1987

In August 1987, the APT released a Privatization Plan outlining a strategy for the financial rehabilitation and divestment of PNCC. The plan called for the conversion of outstanding PNCC debt into equity and the liquidation of all non-construction assets. Creditors and stockholders would be granted equity in the remaining PNCC construction operations, which was assumed to become revitalized and marketable as an ongoing, independent concern. In this Plan, the APT estimated that the GFI's would recover about P4 billion of their original P12 billion exposure. The plan proposed the following:

- GFI's would acquire certain non-construction assets through various forms of foreclosure;

- The Tollways Division's assets within the PNCC would be spun off into a newly incorporated Tollways Corporation;

- Non-construction assets remaining after foreclosure, including shares of the newly incorporated Tollway Corporation, would be pooled and placed in the APT's trust for disposal. Proceeds from the sale of the assets would be distributed to creditors and stockholders in proportion to the size of their liens or stock holdings.

- Construction assets would be pooled and placed in a newly incorporated PNCC II as its starting capital. Shares in the PNCC II would be awarded to creditors and stockholders in proportion to the size of their liens and stock holdings.

- The GFI's, through the APT, would then sell their shares in the PNCC II.

The Plan favored keeping the PNCC Construction Division alive and independent by selling it and its twelve major construction projects valued at roughly P600 million. The foreclosure on and selling of construction assets by the GFI's was discouraged because: (1) considering that the GFI's controlled the operations of the PNCC, such a sale would likely meet legal opposition by private creditors and stockholders; and (2) the dismantling of the Construction Division would trigger the loss of existing construction contract performance bonds of P1.4 billion.

2. Challenges to the Plan

The decree by which the PNCC was taken over by the government has been challenged by the original stockholders, and so the privatization plan developed by the Asset Privatization Trust in 1987 has officially been on hold since then. Perhaps more importantly, the Government Service Insurance System, which held P475 million of PNCC's debt, refused to have most of its stake converted to equity. This, along with the inability to sell the Construction Division, stalled the plan. Nevertheless, over the subsequent three years the government-held debt was devalued and a portion of the remaining debt converted to equity.

As it turned out, APT could not find a buyer for the unprofitable Construction Division. Moreover, certain construction project sponsors refused to allow a new company to complete their projects. Accordingly, in July of 1989, the PNCC decided to sell its construction assets and contracts, appraised at the time at a value of P608 million, on a piecemeal basis. Several construction projects were canceled by

agreement with the project sponsors, and auctioning of the construction assets commenced thereafter.

3. Changes to the Privatization Strategy

Following the failure to sell the Construction Division, AFT and PNCC began to implement the following strategy in 1988:

- The PNCC Construction Division is to be closed, albeit with a residual capability retained for in-house tollway construction. Non-tollway fixed assets, which had a net value of approximately P350 million as of June 1991, are currently being sold.

- Proceeds from the sale of construction assets will be applied to tax liabilities totaling P215 million.

- The remaining Tollways Division will be divested by the government as a newly incorporated entity.

PNCC has been carrying out the first two parts of this revised strategy for the past two years, having reached the point where the Tollways Division accounts for the great majority of the company's employees and assets.

The failure to sell the Construction Division reflected the fact that the construction arm of PNCC, rather than the tollways operations, was responsible for the very poor financial condition of the PNCC. Unfortunately, the Tollways Division did not generate nearly enough net income to offset the enormous losses incurred by the Construction Division. In fact, since the mid-1980's toll revenue has been barely sufficient to cover routine operation and maintenance expenses of the tollways, let alone help support the construction activities. Very little has been reserved for significant rehabilitation or expansion of the tollways.

This lack of net revenue and reserves is partially attributable to the fact that while inflation has been running at between 10 percent and 15 percent per year since the PNCC was taken over by the government, there has been no increase in toll rates since 1983. Were it not for steady increases in traffic and the resulting increase in toll revenue, PNCC would have been forced to cease operations several years ago. Mounting congestion on the tollways and the apparent underinvestment in maintenance and rehabilitation mirrors the precarious financial situation of the PNCC.

C. Current Financial Condition

Proceeds from the sale of Construction Division assets have been far from adequate to offset the Division's carryover liabilities. As a result, PNCC remains mired in debt even after much of the government-backed debt was converted into equity. The value of these liabilities is changing on an almost daily basis as PNCC continues to sell assets and pay down and renegotiate its debt. The remaining construction projects have been sold or simply not begun (e.g., projects at Clark Air Force Base). In fact, PNCC is rapidly approaching the completion of the piecemeal sell-off of construction assets. Exhibit I shows the transformation of the PNCC balance sheet which will result from the implementation of the privatization plan.

Estimated liabilities to government financial institutions (not including outstanding tax liabilities) include the following:

Name of Government Financial Institution (GFI)	**Liability Amount (1000's of pesos)**
National Development Company	1,356,693
Philippine National Bank	4,381,125
Development Bank of the Philippines	9,633
Central Bank of the Philippines	1,204,311
Philippine National Treasury	84,398
Total GFI Liabilities	**7,075,971**

According to the rehabilitation program of the PNCC, these liabilities will be transferred to the government. Subsequently,

- the liabilities will be partially or fully written off;
- the liabilities will be converted into equity in the Tollway Corporation; or
- the National Government and other creditors will share in the proceeds from the sale of construction assets and the Tollway Corporation according to the following weighing factors:

Secured creditors	1.00
Unsecured creditors	0.75
Preferred shareholders	0.50
Common shareholders	0.25

PNCC contracts of doubtful value will be written off. Most of them are overseas in Saudi Arabia, Hong Kong, and Malaysia. These amount to approximately P9.5 billion.

Exhibit I
Philippine National Construction Corporation
Financial Rehabilitation & Privatization
(Thousands of Pesos)

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	Actual June 1991	Adjustment	Reference	Adjusted June 1991
Assets:				
Current Assets	919,536			919,536
Property, Plant & Equipment:				
Expressways - Net	3,323,721			3,323,721
Other Fixed Assets - Net	374,380	(348,286)	1	26,094
Net Property, Plant & Equipment	3,698,101			3,349,815
Other Assets	509,248			509,248
Assets Proposed for Write-Off	9,513,048	(9,513,048)	2	0
Total Assets	14,639,933	(9,861,334)		4,778,599
Liabilities & Stockholders' Equity				
Current Liabilities	856,363			856,363
Long Term Liabilities	737,682			737,682
Tax Liabilities	215,319	(215,319)	1	0
GFI Liabilities proposed for transfer to the National Government	7,075,971	(7,075,971)	1,3	0
Total Liabilities	8,885,335	(7,291,290)		1,594,045
Stockholders' Equity	5,754,598	(2,570,044)	1,2,3	3,184,554
Total Liabilities & Stockholders' Equity	14,639,933	(9,861,334)		4,778,599

References
1. Construction and other non-toliway fixed assets are liquidated. Proceeds are applied to outstanding tax liabilities and to other government debt.
2. Assets identified as worthless by the PNCC are written off.
3. Liabilities to the National Government are written off or converted into equity.

D. Obligations for the Buyer

PNCC's Franchise is encumbered by specific legislative requirements to build and operate several extensions to the existing tollways, as well as a circumferential connector around Manila that will link the north and south tollways. In addition to the TOA requirements, the tollways are badly in need of repair, and certain urban sections are also scheduled for lane additions to ease the extraordinary congestion. Finally, PNCC's toll collection system is in need of modernization, with tolls and vehicles now being counted manually in a very-labor intensive system of supervision.

Each of the privatization options discussed in this report will be affected by PNCC's pending plans and obligations for capital improvements. The plans for expenditures used in this analysis were provided by the PNCC. TOA obligations and other impending expenditures include the following:

1. North & South Extensions

The analysis assumes that all extensions are built in compliance with the Toll Operation Agreement. The North Luzon extension to Tarlac is projected to be completed by 1997, and the continuing extension to Carmen is projected to be completed by 1998. The South Luzon extension to Sto. Thomas is projected to be completed by 1995, and the extension to Lucena is projected to be completed by 1998.

2. The Metro Manila Tollway

The Metro Manila Tollway (MMT) will create a tolled beltway around metropolitan Manila. This tollway will relieve through-traffic congestion in Manila, as well as congestion on the toll-free circumferential road that is now under construction. PNCC staff say the MMT will be completed by 1998.

3. Road Widening Plans

To relieve the mounting congestion on existing roads, lane expansions from Valenzuela to Mabalacat on the North Luzon Tollway and from Bicutan to Calamba on the South Luzon are planned by the Tollways Division. These expansion programs are projected to cost approximately P4 billion over the period 1991 to 1997. In addition, capital improvements in existing roadway of about P400 million have been projected by the PNCC over the next five years.

Although the statements of PNCC's management and the Toll Regulatory Board staff and the observations of the Price Waterhouse team are unanimous concerning the need to rehabilitate the urban sections of the tollway and improve toll collection technology, Price Waterhouse was not provided cost estimates for these projects.

III. OPTIONS FOR PRIVATIZATION

A. Actions Needed to Support Privatization

In light of PNCC's current financial condition, any successful privatization will also require certain actions on the part of the government to improve PNCC's balance sheet and its prospects for future earnings. Without these or similar actions, PNCC will retain too much debt and have too little cash flow to support privatization. These actions are discussed below.

1. Improve the Regulatory Environment

a. Background on the Regulatory Apparatus

PNCC's toll rates are regulated by the Toll Regulatory Board (TRB), an independent government agency whose responsibility is the regulation of toll rates. The process by which tolls are increased or decreased is specified in Presidential Decree 1894. According to that law, the TRB is governed by an appointed board that includes the Secretary of Public Works and Highways, who is the designated chairman. Other members of the board are the Undersecretary of the Department of Transportation and Communications, the Undersecretary of the Department of Finance, the Deputy Director General of the National Economic Development Authority, and a private sector representative. The full-time Executive Director serves at the discretion of the Secretary of Public Works and Transportation. She and a few permanent staff keep a close watch on PNCC operations.

TRB has the right of prior review for all engineering plans and can dispute PNCC's costs even after they are incurred. For example, PNCC claims that the Northern Extension will cost P140 million, while TRB believes the cost will be closer to P98 million, although they have since raised their estimate to P112 million. Because PNCC needs current rate increases to fund construction, PNCC will not begin construction on the extension until there is an agreement on what will be added to the existing system.

PNCC's toll rates are governed by a form of "price cap" regulation, under which toll rates cannot exceed a cap that is adjusted annually according to a formula established in the TOA. The formula for estimating allowable toll rates is simple: apply a cost index that measures changes in PNCC's cost of doing business to toll rates. The index has three components, weighted accordingly:

(1) construction costs (60%);
(2) operating costs (30%); and,
(3) operating margin, or profit (10%).

According to the law, PNCC should apply annually for its rate increases by simply showing its calculation of the formula, but increases are not automatic. Costs are audited, there are public hearings, and the government can challenge the legitimacy of the application. Inexplicably, PNCC last filed for a rate increase in 1983; but even at that time PNCC did not request (and was not awarded) the increase that would have been justified by the index formula.

TRB has argued that the cost index approach favors PNCC because it does not take into account traffic growth. In fact, it appears that the only reason the tollways have survived financially is because of steady traffic increases of nearly 10 percent per year.

Apparently, there are those both within and outside of the government who believe that segments of the tollway which have already been paid for should have their tolls removed. Indeed, PNCC was sued in 1984 by a group for that very reason. Despite winning in two lower courts, PNCC bowed to its fears that it would lose in the final appeal to the Supreme Court, and agreed to reduce its tolls to maintenance-cost levels on several roadway segments. TRB was not party to this suit. TRB's Executive Director disputes the legality of treating the tollways as a collection of independently-financed segments, arguing that such segmenting probably violates the TOA, which implicitly states that early road segments should help finance the later construction of other segments.

b. TRB and Privatization

TRB has been openly critical of PNCC management, including the cohesion and consistency among the management team and its pace in disposing of excess workers. PNCC management has not come in regularly for rate increases, putting TRB in an uncomfortable political position of presiding over a huge backlog of rate increases.

TRB believes that privatization could lead to both more frequent toll rate adjustments and quick construction of the southern extension, where traffic congestion and mobility needs are most pressing. On the other hand, the northern extension and even the Metro Manila Tollway (MMT) may tax the resources of the privatized entity because the traffic of these extensions may not justify the added construction and operating expenditure. Moreover, the Department and Public Works is already starting on a freeway ("C-5") that will surround Manila but will be located inside of (and competitive with) the MMT, although the C-5 apparently will not connect the north and south tollways.

There is pressure on TRB to use a Build-Operate-Transfer (B-O-T) scheme for the extensions and the MMT without the involvement of PNCC. TRB believes that it has the statutory authority to cancel the Franchise and grant it to another entity, an option that TRB believes is strengthened by the new B-O-T law, which could be used to build the extensions. However, canceling the Franchise would apparently trigger a

requirement to pay PNCC "just compensation" for the value of the Franchise, although this compensation could arguably be as low as zero if the compensation were measured by current market value (in light of PNCC's current financial condition and the overhanging PNCC debt burden that has been assumed by the government).

c. Alternative Ratemaking Procedures

As noted above, TRB believes that the cost index approach favors PNCC because it does not take into consideration the demand for services (traffic growth). A rate-base rate of return approach would solve that problem by factoring in demand as well as actual costs incurred in operating, repairing, rehabilitating, and expanding the facility. Moreover, a rate-base approach could more directly consider the cost of funds (debt and equity) than the crude formula now in place. A more precise formula for setting toll rates also has political benefits, since there is a clearer "cost-of-service" justification for rate increases.

TRB believes it has the statutory authority to modify the rate formula, although cooperation from PNCC is regarded as helpful in making the change. TRB claims that PNCC has resisted such a change for the very reason that the current formula favors the company. Perhaps more importantly, PNCC may be wary of a recent Supreme Court ruling that limited utilities to a 12 percent return on investment. Inflation is currently running at about 15 percent in the Philippines.

This Supreme Court limitation is not as onerous as it might seem. The Philippine regulatory agencies for utilities apply their allowed rate of return to the *appraised* value of the asset base rather than the book value. Moreover, the appraised value is defined as the *replacement* value, a figure which rises with the rate of inflation. As a result, the limitation imposed by the Supreme Court on other utilities and favored by some for PNCC is roughly 27 percent (12 percent plus the rate of inflation) in nominal terms.

d. The Impact of Ratemaking on Valuation

Regular rate adjustments are essential to any regulated enterprise that is operating and expanding in an inflationary environment, even if demand is steadily increasing. The reason is that demand will eventually outstrip capacity and the growth will decline to zero, while operating, maintenance, rehabilitation, and expansion costs will continue to rise with inflation even after traffic has stopped growing. Profitability will be gradually eroded unless toll rates are raised to account for the increased operating costs. The market value of PNCC and the prospects for successful privatization will diminish along with the prospects for future profits.

Assuming that toll rates are regularly updated according to the prescribed formula, the current rate regulatory approach could support privatization were it not for one factor: the extensions will probably be more expensive and have less traffic than the existing roadway sections. Under such circumstances, a formula that only increases tolls by a gross price index and ignores actual traffic and per-unit construction costs will not necessarily increase tolls enough to cover the cost of the new facilities. The only way that this problem may be offset is if the existing facility generates steadily-increasing surpluses to subsidize the other segments, which is not occurring now and seems implausible for the future (according to the results of the financial analysis included in this report).

These facts and the overall imprecision of the current formula will generate risks for the buyer and discourage the building of lower-volume extensions or major rehabilitations that do not sufficiently increase traffic volume. Of course, the rate-base approach has its price for privatization as well: a rate-base approach is precise at limiting profits, as opposed to the current system which limits tolls but allows profits to rise as long as traffic grows. However, virtually all other Philippine utilities are either already regulated using a rate-base approach or are being moved in that direction by the Supreme Court decision. TRB, PNCC, and its potential buyers may find rate increases more defensible if they are obtained in the same manner as for most other utilities in the country.

2. Implement Proposed Toll Rate Increases

A substantial and immediate toll rate increase is essential if the PNCC is to continue its operations *and* finance the extensions and rehabilitation. Already barely covering its operating costs, PNCC's traffic and revenue growth, which has kept PNCC afloat, may well be approaching the limits of basic roadway capacity in the urban segments. An application for a toll rate increase is currently before the TRB. According to the formula discussed above, PNCC is entitled to a rate increase of over 200 percent. PNCC applied for such an increase in June of 1991.

The TRB will almost certainly award some increase in the toll rate, although the agency expects to come under political pressure to hold PNCC's rate increase well below the amount allowed under the index formula. With national elections on the horizon, a few senators have already announced their opposition to toll rate increases. Many of the officials interviewed by Price Waterhouse seem to believe that privatization may make rate increases more acceptable to the public, since the citizenry may feel that a government agency should absorb any large price increases for essential services. Moreover, if privatization is accompanied by a clear commitment to build the extensions, rehabilitate existing sections, and maintain the roads to a higher standard, rate increases will be more acceptable.

The future financial viability of the PNCC and thus its marketability to the private sector is strongly dependent upon immediate and regular toll rate increases. The market price of the tollways and the government's recovery will be very much a product of the TRB's decisions, both now and in the future, especially if privatization were to be accompanied by changes in the toll rate regulation approach.

3. Devalue Government Equity Holdings

The amount of payment that the government can expect to receive in either loan repayments or proceeds for selling its shares is directly related to the level of future toll rate increases. However, the outstanding loan balance and the number of outstanding shares held by the government are so large that even a substantial toll rate increase would not by itself make PNCC attractive to a private buyer.

In order to attract buyers or sell new stock, it will be necessary to discount the government equity prior to divestment. Equity devaluation would broaden the pool of interested parties by making it easier for the buyer to take majority control of the company, thereby improving the prospects that the government will attract investment groups with managerial capability and financial strength. Moreover, devaluation would make PNCC more attractive to investors in the long run by improving the post-privatization balance sheet and improving the prospects for capital gains by investors.

4. Extend Duration of Franchise

PNCC is required by its TOA to extend the north and south tollways and the Metro Manila Tollway. However, with the PNCC generating barely 40 million pesos per year for working capital, with no sinking funds for rehabilitation of existing roadway, and an impossible credit record, these extensions cannot be accommodated until PNCC is in a much-improved financial condition. PNCC says it would give priority to extension of the South Tollway, where additional revenues are more likely to cover the added costs of construction and maintenance.

More importantly, investors must be given time to recover the costs of the extensions. Under the terms of the Toll Operation Agreement, PNCC is granted a Franchise to operate the North Luzon and South Luzon tollways until the year 2007. This is probably not enough time for Franchise buyers to build the extensions and then recover their investment. According to Section 2 of Presidential Decree 1894, the Franchise granted for any constructed extension will have a term of thirty years commencing from the date of completion of the extension, but the validity of PD 1894 has been questioned in the legislature. In order for PNCC to attract a buyer, either this uncertainty must be eliminated (i.e., the duration of either the total system franchise or the franchise on the extensions must be extended) or the requirements to build the extensions must be dropped.

B. Basic Privatization Options

Price Waterhouse has identified six basic privatization options for the PNCC. They are:

- sell existing government shares;
- sell new shares;
- sell shares to management/employee group;
- privatize operations via a lease;
- divide the Franchise;
- remove tolls and privatize maintenance.

Each of these options has several permutations, and a few can be used together. In this section, the options are explained along with their respective advantages and disadvantages. The financial implications of each of these options for PNCC and the government is explained in Section IV.

1. Sell Existing Shares Through Offerings

The sale of government equity in PNCC may take the form of a public offering, a private sale, or some combination of the two. If a substantial toll increase were to be approved by the Toll Regulation Board and PNCC were to be relieved of many of its outstanding liabilities, government equity in PNCC could acquire a solid market value. Without this financial relief, however, the government will probably find it impossible to dispose of its shares.

a. Public Offering

A public sale may either be a fixed price or tender offering, and would likely require the services of an investment bank and distribution of a prospectus. A public sale offers a number of obvious advantages, such as access to the broader resources of the general investing public, creation of widespread shareholder representation, and political transparency. Certain incentives may be implemented to ensure employee participation and domestic ownership. However, given the current state of the Philippine stock exchanges, it is unlikely that a public offering would be the most expedient or profitable means of privatization. The requirement for dual listing on the Makati and Manila stock exchanges makes the process of public offering extremely time-consuming. Additionally, problems with the pricing of stock offerings in the past years has created a lack of confidence in the exchanges which could hamper the sale and depress the market price. Reforms currently under discussion in the Security and Exchange Commission, including automation and the professionalization of the exchange boards, would render the exchanges more amenable to an offering if enacted. Nonetheless, privatization of PNCC through a public offering may not be an attractive option in the short term.

b. Private Sale

A private sale of shares to a pre-qualified buyer is an effective mechanism for injecting financial, managerial, and technical expertise into the tollway operations. Government shares may be divested through a competitive bidding process. The Operating Guidelines of the APT require a rigorous and explicitly stated set of prequalifications for potential buyers. Since it is important to the government that the Tollways Division remain economically viable after privatization, the prequalifications should include a strict examination of the managerial abilities, financial performance and resources, and applicable experience of potential investment groups. Price may be considered of secondary importance to these requirements. Naturally, any private sale should incorporate the Philippine government's prevailing requirement for 60% domestic ownership.

c. Combined Public and Private Stock Sale

A divestiture of government shares that combined a public offering and a private sale would take advantage both of the political and macroeconomic benefits of a public offering and of the potential for increased efficiency and improved tollway service offered by a private sale to a qualified organization. Such a strategy assumes enactment of the stock market reforms discussed earlier.

The experience of the Malaysian 1986 privatization of the Kelang Container Terminal demonstrates the potential advantages of a public offering/private sale divestment. The Malaysian government approached the privatization with the objectives of improved enterprise efficiency, broader share ownership, the luring of foreign capital and technology, and a reduction of the role of the state in the economy. The privatization took the following form: 20% of the stock was retained by the Malaysian government; 40% was assumed by a private investing group which included a foreign firm with the requisite managerial and technological abilities; 5% was controlled by KTC employees; and 35% went to the general public.

The Malaysian privatization of the Terminal was not accompanied by any deregulation, increased competition, or changes in the market structure normally associated with privatization movements. Nonetheless, privatization increased operational efficiency of the Terminal. That efficiency improved despite the continuing monopoly was attributed to both a reduction in political interference and a greater concern for profitability.

2. Sell New Shares

An offering of new shares in PNCC would dilute government ownership, perhaps to a minority position, but it would also help recapitalize the tollway company. The influx of equity would buttress PNCC's debt/equity ratio and thus make it easier to finance necessary expansions.

In 1987, the Malaysian government used a new shares offering to dilute its ownership stake in the Malaysian International Shipping Corporation (MISC) from 61% to 48%. The recapitalization bolstered borrowing capabilities by reducing the company's debt/equity ratio from 10:1 to about 3:1. Furthermore, the introduction of working capital allowed the company to invest in new fixed assets which greatly enhanced MISC's profitability.

A new equity issue would effectively address the dual concerns for private ownership and expansion of the tollway operations. Moreover, this method of privatization allows the government residual participation until full divestment is financially and politically feasible.

3. Sell Shares to Management and Employees

a. Benefits and Risks

In an increasing number of privatization efforts, management and employees are being offered the opportunity to own stock in the newly privatized company. Usually this stock is sold at discounted prices, as in Great Britain, or, from credit repayable from future profits of the enterprise. Management/employee equity participation can be helpful in achieving both economic and political objectives. It tends to improve operating efficiency, productivity, and profitability by giving workers and management a direct financial stake in the success of the enterprise and the value of the stock. Because workers and management are often the most resistant groups toward privatization, equity participation makes privatization more politically palatable.

Employee participation creates broader ownership, which often allays fears of a return to a pre-nationalization era of intense concentrations of wealth. It also makes it more difficult, both politically and practically, to renationalize the enterprise. Finally, if employee equity participation is accompanied by extensive employee information, education, and involvement in shop-level decision-making, then labor harmony, productivity, and employee retention tend to improve.[1]

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[1] Empirical studies conducted in the United States indicate a positive correlation between employee ownership combined with participation in decision-making and company productivity, with a 98% confidence interval. See Michael Conte and Jan Svenjnar, "The Performance Effects of Employee Ownership Plans" (March 1989).

There are common concerns about employee ownership that must also be considered. The risk exists that employee-owners might focus more on short term dividends, rather than on long term profitability, especially if stock cannot easily be resold. Further, an employee-owned company may be less willing to take risks that, while offering potential long-term gains, could jeopardize the stability of the company and threaten wages.[2] Moreover, employee ownership can introduce a conflict of interest between company profitability and labor interests. Capital-for-labor substitution and labor force reductions might be opposed even when such changes would improve company profitability. Finally, employees who are sold stock at steeply discounted prices might undermine employee ownership by immediately reselling their shares at the higher market prices.

b. The Employee Stock Ownership Mechanism

An Employee Stock Ownership Plan (ESOP) Trust is a method for financing employee stock purchases through future company profits. It could be used to transfer at least part of the PNCC's ownership from the government to the company's employees.

An ESOP Trust works by placing the government's stock in an escrow account for the employees until, gradually, the shares are paid for by company profits and released to the employees. The Trust is a third party (usually a bank) between the government and the employees that holds the government's stock in escrow. The company is required to make periodic contributions (paid from profits) to the Trust, which in turn pays the government. With each payment, some of the stock held by the Trust would be released into the accounts of individual employees. Stock may be allocated to each employee according to a formula weighing relative compensation, seniority, etc. Management could be allocated stock in a similar manner.

Hopefully, the increased productivity, efficiency, and sales resulting from both privatization and employee equity participation will help to generate the profits necessary for this mechanism to work. In order to function properly, however, an ESOP should also be accompanied by an experienced management team and an extensive program educating the employees in the nature and benefits of employee ownership.

4. Privatize Operations Via A Lease

A term lease and management contract for tollway operations may be an attractive option if legal or political opposition obstructs full divestiture. The management

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[2] See Barbara W. Lee, "Should Employee Participation Be a Part of Privatization" (May 1991).

contract would contain obligations for operating and maintaining the existing tollway in return for a fixed payment from the government. An accompanying lease would convey many of the rights of ownership while stopping short of full privatization. For example, the lease could allow the private firm to share any profits resulting from improved operating efficiency, bonuses for improved roadway condition or reduced congestion, and even rights to develop the tollway extensions under a Build-Transfer-Operate or Build-Operate-Transfer scheme. The government could recover as much of its investment as the tollway profits would allow by requiring the lessee to make regular payments (but varying in size with profitability) to the government.

This option would be particularly attractive if no buyers came forward or if the government felt that potential buyers were too heavily discounting the potential for future profits. Such buyer skittishness would not be surprising given the contentious history of toll rate increases, routine political intervention, and the considerable uncertainties over the cost and revenues on the extensions.

The 1985 privatization of the State Railways of Thailand was accomplished by leasing rather than selling the company. Its subsequent success occurred in the face of past operating losses, a five year decline in passenger and freight traffic levels, and intractable increases in personnel expenses. In achieving the turnaround, the Thai government leased three lines to a private management group, which raised prices and offered a wider range of services to travelers. The result was a profitable enterprise and the end of government operating subsidies, all without an outright sale.

5. Divide the Franchise and Its Obligations

The Tollways Division need not be sold as a single entity. Instead, the Franchise could be divided into a North Luzon Tollway Company and a South Luzon Tollway Company, with the various obligations to build extensions allocated to the two companies in a way that makes privatization easier and more lucrative for the government.

There are several possible permutations to the basic approach.

- The extension obligations could be sold or otherwise transferred to a another company, perhaps using the new Build-Operate-Transfer procedures recently passed into law.

- Full or partial government equity may be retained in a particularly profitable segment if the government hoped to recoup its losses from other segments. Alternatively, government equity may be retained in an unprofitable segment that needed to be subsidized after privatization of the other segment.

- The North and South Tollways could be sold in segments rather than as whole operations. This seemingly complicated option could become attractive if the pending rate case were to allow greater toll increases on some segments than others, making those segments profitable while the others perhaps less so.

- Selling just part of the Tollways Division could be accompanied by contracting the management of the whole Division to the buyer of the part. This would achieve a greater degree of privatization than a partial sale alone and would keep the entire Tollways Division under a single management team, all the while avoiding many of the political and financial risks that might accompany full sale.

Dividing the Franchise and/or canceling or restructuring the TOA extension obligations may be attractive if the market is unreceptive to privatization of the whole tollway system at once or if the extensions do not appear to be remotely self-financing. A separate sale could also be attractive if there is political or labor opposition to wholesale privatization or if the government simply wishes to test the political and financial ramifications of privatization. On the other hand, the government could be limited in its exercise of this option if the courts interpreted the original TOA to preclude dividing ownership of the Franchise or the obligations to build the extensions.

An analysis of the profitability of the current North Luzon and South Luzon tollways, the North Luzon and South Luzon extensions, and the Metro Manila Tollway are included in Section IV. Because of the initial high investment outlays required for their construction, extensions are projected to be unprofitable unless high toll increases are approved by the Toll Regulatory Board. In particular, the estimated high cost of construction of the northern Mabalcat - Tarlac extension would render this segment very unattractive to investors. With low toll increases, the inclusion of obligations to construct extensions would poison the tollways' market value and preclude a profitable sale.

6. Remove Tolls and Privatize Maintenance

As of January, 1992, PNCC's tollways are apparently functioning as freeways and have been for several months. There is a chance that this arrangement could become permanent, completely obviating all of the privatization options discussed above. However, it would remain possible to privatize operation and maintenance of the roadway via a government contract with a private firm. The government, presumably the Department of Public Works and Transportation, could offer the operation and maintenance contract for bid, select the winning bidder (the highest quality and lowest cost proposal, perhaps one made by PNCC), negotiate a contract, and make regular

payments that cover allowable costs or else allow the firm to take the risk that tolls will be sufficient to cover operating and maintenance costs. Under this option, the government would not recover any of its current investment.

IV. FINANCIAL IMPLICATIONS OF PRIVATIZING THE TOLLWAYS

A. Factors That Influence Cash Flow

1. Overview

The privatization options discussed above have financial implications for PNCC and the government. Other than Option 6, which would eliminate tolls, they share their dependence upon toll rate increases and some form of favorable discounting of the government's liens and stock holdings. This section discusses how changes in toll rates, traffic flows, and cost of meeting operating and capital investment obligations could influence the need for the Philippine government to discount its holdings and thus addresses the comparative benefits of one privatization option over another.

This analysis is hypothetical and is intended to convey only the direction (positive or negative) of the financial impacts of privatization. It is not a formal valuation.

Unfortunately for this analysis, PNCC has no projections for traffic growth and only some idea of what kind of toll increases the TRB might allow in the pending rate case. Moreover, the estimated construction costs for the extensions, MMT, lane additions, and rehabilitation may be outdated or otherwise subject to change. Therefore, the analysis uses a scenario approach to test the financial viability of privatization.

The privatization strategy and TRB's toll policies can be crafted to help meet the capital investment requirements. The issuance of new shares, for example, both dilutes government ownership and infuses new capital into the company. Substantial toll rate increases, undisputed right to cross-subsidize among road segments, and the explicit authority (via a new regulatory mechanism) to recover capital investment costs will reduce risks to investors, improve revenues and profitability, and thus enhance the Tollway Corporation's value.

2. Assumptions in the Scenarios

a. Historical Revenue Flows

Despite annual inflation rates of nearly 15%, the PNCC Tollway Division has not been granted a toll rate increase since 1983, resulting in a nearly 70% real decline in the toll rates since that time. The Division has remained economically viable only

due to annual traffic flow increases of about 10%[3], which have at least partially offset the deterioration in the value of toll revenues caused by inflation.

Despite the traffic increases, however, revenues generated by rising traffic flows have not been enough to cover necessary investment in extension, expansion, and rehabilitation. In 1990, working capital was barely P40 million, a small fraction of the capital needed for the investment activities projected for 1991. As a result, the tollways have fallen into disrepair and available capital is inadequate for the expansions and extensions required by the Toll Operation Agreement. Moreover, the tollways suffer from paralyzing rush hour congestion, nearing the outer limits of road capacity on the urban segments. Traffic flow increases are therefore projected to slow in the coming years.

b. Traffic Growth

Average daily traffic on the tollways was approximately 335,000 vehicle trips during the first half of 1991, with traffic counts of 125,000 and 210,000 on the North Luzon and South Luzon tollways, respectively.

PNCC apparently has no projections of traffic growth, but traffic flows on the current tollways are expected to stabilize as the tollways reach capacity levels. The following assumptions of traffic increases are used in the financial models:

Exhibit II

Estimate	1992 - 1996	1997 - 2001	2002 +
Low	5%	5%	0%
Base	10%	5%	0%
High	10%	10%	0%

Because the extensions will be built in less densely populated sections of Luzon, traffic flows on the extensions are assumed to be half of the average volume on the existing tollway mileage. Of course, these assumptions may be high; therefore, sensitivity analysis was performed around the assumption. The results of this sensitivity analysis, as well as those to follow, are displayed in Exhibit III. It is also assumed that, as

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[3] Traffic increased 11.75% per year from 1987 to 1990. Traffic data was not available for prior years.

Exhibit III
PNCC Tollways
Sensitivity Analysis

Parameter	Assumed Value for Analysis	Sensitivity of PNCC Discounted Cash Flow Valuation to Parameter
TRB Toll Rate Increase	100–200%	243%
Construction Costs	P14.2 billion – P20.8 billion	276%
Traffic on Extensions	0.25–0.75	92%
Operating Expense Elasticity	0.3–0.9	-32%
Maintenance Expense Elasticity	0.1–0.7	-10%

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dictated in Section 2 of Presidential Decree 1894, the franchise on an extension will have a term of thirty years from the date of completion of the extensions.

c. Toll Rates

PNCC is currently seeking a toll rate increase from the Toll Regulatory Board, and, in accordance with the rate formula dictated in PD 1894, the Tollways Division is entitled to a rate increase of 200%. However, the procedures for raising toll rates is politically arduous and uncertain. The actual rate increase approved by the TRB may be less than that dictated by the original Presidential Decree. Consequently, toll increases of less than 200% must also be considered. After the initial increase in 1992, toll rates are assumed to keep pace with inflation (projected at 15% annually), adjusted every three years.

d. Operating and Maintenance Expenses

Since detailed historical operating expenses were not available for the PNCC Tollway Division, projected maintenance and operating expenses are based on cost "elasticities" observed in the Pt. Jasa Marga Tollway Company.[4] The operating expense elasticity of traffic flows is estimated as 0.7, which means that as traffic increases by 1 percent, operating expenses will increase by 0.7 percent. The maintenance expense elasticity is similarly assumed at 0.5 based on the Pt. Jasa Marga figures. The confidence in these figures is low; therefore, sensitivity analysis was performed around these estimates.

e. Capital Expenditures

PNCC's capital investment requirements fall into three categories: expenditures mandated by the franchise agreement, optional planned extensions, and optional rehabilitation and lane expansion projects that may be essential to continuing tollway operations. This analysis attempts to determine the independent effect of each category of expenditures on company profits, as well as the impact of having higher or lower costs than expected.

Estimates (in 1991 pesos) of investment outlays for lane expansions on current tollways and for construction of extensions are included in Exhibit IV. The high estimate for the construction costs totalled P20.8 billion while the low estimate of the costs was P14.2 billion. These estimates were provided by the PNCC.

This analysis used the two different estimates of the costs for the lane extensions and for the construction of extensions provided by the PNCC. These cost levels are the

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[4] These elasticities were calculated based on financial data for the years 1978 to 1989. Elasticities are the percentage increase in cost associated with a 1 percent increase in traffic.

Exhibit IV
PNCC Tollways
Estimated Costs of Expansions & Extensions
(Thousands of Pesos)

	/----------Cost Estimate----------\		
	Low	Base	High
North Luzon Tollway:			
Current Tollway Expansion	(2,476,600)	(2,826,964)	(3,177,328)
Extension: Mabalcat – Tarlac	(1,169,190)	(1,334,595)	(1,500,000)
Extension: Tarlac – Carmen	(2,120,830)	(2,420,863)	(2,720,897)
Total North Luzon Tollway	(5,766,620)	(6,582,422)	(7,398,224)
South Luzon Tollway:			
Current Tollway Expansion	(1,229,060)	(1,587,184)	(1,945,309)
Extension: Calamba – Sto. Thomas	(524,400)	(677,200)	(830,000)
Extension: Sto. Thomas – Lucena	(2,026,000)	(2,616,337)	(3,206,674)
Total South Luzon Tollway	(3,779,460)	(4,880,721)	(5,981,983)
Metro Manila Tollway	(4,675,373)	(6,037,687)	(7,400,000)
Total Costs of Construction	(14,221,453)	(17,500,830)	(20,780,207)

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low and high construction cost scenarios with the base scenario being the average of the two estimates. Due to the uncertainty of the actual costs of the construction, sensitivity analysis was performed around these estimates to account for fluctuations in the construction costs.

3. Hypothetical Cash Flow Projections

Tollway operations were projected over 37 years based on the above assumptions. Exhibit V shows an example of the negative cash flows from operations and investments projected over the next five years for a base scenario using the above assumptions.

The Base Scenario is as follows:

- operating expense elasticity = 0.7;
- maintenance expense elasticity = 0.5;
- base traffic growth, base construction costs;
- extension traffic = 0.5 * current traffic volume on current road network;
- toll rate increase = 200%;
- a 27% discount rate.

This scenario will be used as an example through the financial exhibits. The valuation detail for 27 different scenarios may be found in Appendix A.

Because of insufficient net cash flow during the pre-construction period and the early operating period, the extensions and other capital investment activities are likely to require extensive third party financing.

B. Approximate Values for PNCC

1. Basic Approach

Valuation of the Tollway Division is based upon the reconstructed (for clarity) June 1991 balance sheet shown in Exhibit VI. Of the approximately P4.8 billion in assets shown, P1.4 billion are residual Construction Division assets, mostly receivables and advances, as shown in Exhibit VII (see also Exhibit I). The Tollway Corporation proposed for privatization is valued by the following formula:

Tollway Assets + Conveyed Non-Tollway Assets - Conveyed Liabilities

Exhibit V
PNCC Tollways
Projected Cash Flows
Base Construction Costs
Base Traffic Growth
(Thousands of Pesos)

	1992	1993	1994	1995	1996
Operating Cash Flows	779,543	825,432	867,967	1,938,844	2,065,694
Less: Capital Expenditures	(3,276,748)	(3,260,352)	(4,062,363)	(5,886,236)	(6,213,254)
Net Cash Flow from Operations & Investments	(2,497,205)	(2,434,920)	(3,194,395)	(3,947,392)	(4,147,560)

* Figures calculated from projected PNCC income statements based on Exhibit 1 and the construction costs in Exhibit IV. Net cash flow is discounted at 27% for use in the valuation.

Exhibit VI
Tollways Corporation
Estimated Balance Sheet
(Thousands of Pesos)

	Adjusted June 1991
Assets:	
Current Assets	919,536
Fixed Assets – Net	3,349,815
Other Assets	509,248
Total Assets	4,778,599
Liabilities & Stockholders' Equity	
Current Liabilities	856,363
Long Term Liabilities	737,682
Total Liabilities	1,594,045
Stockholders' Equity	3,184,554
Total Liabilities & Stockholders' Equity	4,778,599

Exhibit VII
Tollways Corporation
Conveyed Non-Tollway Assets
(Thousands of Pesos)

Current Assets:	
Cash & Cash Equivalents	81,770
Receivables & Advances	720,332
Inventories	146,800
Prepayments	13,398
Other Assets	444,708
Total Conveyed Non-Tollway Assets	1,407,008

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It is assumed that the tollways will be sold as a going concern, and so they are valued here according to the net return from future operations and investment activities. This method of discounted cash flow valuation simply entails valuing the future cash flows multiplied by discount factors to obtain the present value of the cash flows, or the going concern value of the venture.

Specifically, the present market value of the tollway assets is determined by netting discounted future investment outlays from the estimated net present value of future operating cash flows generated by the tollways (the net present value represents the discounted value of future cash flows minus the initial investment). The book value of conveyed non-tollway assets is then added to the estimated value of the tollway assets, and liabilities are subtracted to determine the final estimated value of the Corporation. Since the concession fee is listed as an operating cost on the income statement, the concession fee liability is not subtracted from the estimated value of the Tollway Corporation's assets.

2. Results of the Sensitivity Analysis

In order to determine the significance of each of the parameters, sensitivity analyses were performed on all of them. The analysis was conducted to illustrate the sensitivity of the valuation of PNCC to changes in the assumed traffic growth rates, the costs of expansion, the toll rate increases handed down by the TRB, the traffic on the extensions, and the expense-to-traffic elasticities. In each case, the effect on the valuation was measured given an increase in the parameter from the "base" scenario, holding all other parameters constant. The result was a measure of the elasticity, or sensitivity, of the valuation with respect to the different parameters. For example, if the extension traffic sensitivity was 90%, a 20% rise in extension traffic might be expected to increase the valuation by 18% (the product of 90% and 20%).

Exhibit III summarizes the results of the sensitivity analysis for the parameters. For example, traffic on the extensions is varied from 25 percent to 75 percent of the average traffic volume on the current tollway. With all other parameters held constant, this changes the tollways value by 92 percent. Similarly, raising the percentage cost increase associated with a 1 percent increase in traffic from 0.3 percent to 0.9 percent decreases the value by 32 percent. The analysis in Exhibit III also supports the following conclusions.

- Toll rate increase and construction costs are the most significant variables in determining the feasibility of selling PNCC. The 243% sensitivity for the toll rate increase indicates the importance of the TRB's decision. For example, if the TRB only mandates a 180% increase in the toll rates, then the present value of cash flows for PNCC will fall 24.3% relative to what would happen under a 200% increase. Lesser increases would be similarly disastrous for privatizing PNCC. Appendix B shows the discounted cash flows valuation of

the base scenario if the assumption for the toll rate increase is dropped from 200% to 150%. This new level of toll rates decreases the value of PNCC as follows:

- from P8.7 billion to P3.1 billion at a discount rate of 22%;
- from -P0.6 billion to -P3.8 billion at a discount rate of 27%;
- and from -P4.7 billion to -P7.0 billion at a discount rate of 32%.

- The 276% sensitivity for the construction costs is representative of the lack of confidence in the estimates and the high returns which investors will demand to overcome risk. These high sensitivities indicate the uncertainty of valuation for PNCC.

- Traffic growth on the extensions is one of the greatest sources of uncertainty in the analysis, since PNCC has no projections and, in any case, traffic projections for roads in underdeveloped areas are usually hard to predict. The base assumption of one half of the traffic growth on the current tollways may even be considered high by some observers. Any lower traffic volume will reduce the tollway's value.

The discount rate is the most important factor in determining the present value of PNCC. They are presented side-by-side in Exhibit VIII for the scenarios to illustrate the effects of different discount rates.

3. The Results of the Present Value Analysis

Exhibit VIII shows the estimated pre-tax net present value of the PNCC under several scenarios using a nominal discount rate of plus or minus 27 percent, with the range of rates tested extending from 22 percent to 32 percent (27 percent corresponds roughly to the 12 percent real return specified in the recent Supreme Court ruling on allowable rates of return for Philippine electric utilities). Each of the cells represents the present value of cash flows under the respective scenarios. A positive present value indicates that the government might recover some of its outstanding investment. A negative present value indicates that the government might have to take one or more of the following actions in order to sell the tollways:

- *pay* a buyer to take over the tollways and the extension obligations of the TOA;
- raise toll rates higher than the level assumed in the particular scenario;
- eliminate the obligation to build extensions that cannot financially support themselves;

Exhibit VIII
PNCC Tollways
Estimated Present Value
(Thousands of Pesos)

Discount Rate = 22%

		Construction Costs		
		Low	Base	High
Traffic Growth	Low	5,956,515	2,980,020	62,980
	Base	11,484,147	8,507,651	5,531,156
	High	17,277,468	14,360,430	11,324,480

Discount Rate = 27%

		Construction Costs		
		Low	Base	High
Traffic Growth	Low	(996,133)	(3,852,699)	(6,590,357)
	Base	2,237,850	(559,260)	(3,356,372)
	High	5,328,119	2,531,008	(236,437)

Discount Rate = 32%

		Construction Costs		
		Low	Base	High
Traffic Growth	Low	(4,193,624)	(6,835,327)	(9,477,027)
	Base	(2,107,192)	(4,748,894)	(7,390,595)
	High	(304,393)	(2,975,760)	(5,587,795)

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- share financial risk with the buyer in a way that would reduce the effective discount rate (which reflects the buyer's perception of risk regarding future costs and revenues);
- share the cost of TOA extension obligations with the buyer.

Several additional observations can be drawn from the analysis.

- The most important observation to draw from the results of the scenarios is the significance of the discount rate. Changes of a few percentage points in the discount rate cause relatively large changes in the valuation. For example, the "going concern" value for PNCC may range from 14 billion pesos to 2.5 billion pesos to -2.9 billion pesos for discount rates of 22 percent and 32 percent respectively.

  Such volatility in the valuation indicate the presence of high risk. Investors will demand high returns for the risk they must take, which makes it critical that the parameters, especially the toll rate increase, move in favor of PNCC. Examining the various scenarios in Exhibit VIII shows that PNCC never achieves a positive value at a 32 percent discount rate (without a positive value, the government would have to discount its current holdings to zero and have to *pay* a buyer to take over the tollway franchise and its responsibilities). Thus, moves must be made to make PNCC a less-risky venture, such as improving the toll rate regulatory approach and restructuring extension obligations.

- The importance of the toll rate increase is also illustrated by the present values in the scenarios. With a toll rate increase of 150 percent, PNCC is never saleable at or above a 27 percent discount rate.

- Most of the positive present values are achieved with a 22 percent discount rate. Such a discount rate may not be realistic unless the government becomes a partner in the risk (such as through a lease-operate agreement). Almost all parameters need to be very favorable for a positive valuation at higher discount rates.

- the outer extensions never have a positive present value rate for a discount rate at or above 27 percent;

- the North urban extension never has a positive present value at or above 27 percent; and,

- the North urban extension never has a positive present value if the low traffic growth projections are observed.

4. The Need to Discount the Government's Stake

As explained earlier, GFI exposure in PNCC totals about P12 billion. One of the basic objectives for the government of the Philippines is the recovery of at least a portion of this exposure. Only the scenarios with positive values in Exhibit VIII represent any recovery of the GFI exposure.

The present values in Exhibit VIII can be subtracted from the initial GFI exposure to determine the new exposure in each scenario. For example, at a 22 percent discount rate with base construction costs and base traffic growth, the new government share (equity and debt) in PNCC becomes approximately P3.5 billion (P12 billion - P8.5 billion). The following table illustrates the scenarios that will reduce the GFI exposure:

Discount Rate	Const. Costs	Traffic Growth	Resulting GFI Exposure
22%	Low	Low	P6.0 billion
22%	Low	Base	P0.5 billion
22%	Low	High	P0.0 billion
22%	Base	Low	P9.0 billion
22%	Base	Base	P3.5 billion
22%	Base	High	P0.0 billion
22%	High	Low	P12.0 billion
22%	High	Base	P6.5 billion
22%	High	High	P0.7 billion
27%	Low	Base	P9.8 billion
27%	Low	High	P6.7 billion
27%	Base	High	P9.5 billion

It is important to remember that all of the above scenarios include a 200 percent increase in the toll rates by the TRB. The reduction of GFI exposure relies heavily on this assumption; with only an 150 percent increase, GFI exposure cannot be reduced at a discount rate at or above 27 percent. In addition, the scenarios in the above table indicate the importance of, and risk involved with, each of the variables surrounding the sale of PNCC for reducing GFI exposure.

5. How the Privatization Options Affect Market Value

Exhibit IX shows the estimated internal rates of return of the PNCC Tollways and its various segments for the base scenario. The internal rate of return is the discount rate at which investment has zero net present value. The estimate of the internal rate of return of the PNCC Tollways is 24 percent, which, with the tollways' inherent risks of operation, may still be below the market expected return for ventures of similar risk. However, the value of the Tollway's equity may be enhanced by targeting a skilled management team or investment group which believes it can introduce substantial efficiencies to the tollway unit's extension construction activities and tollway operations.

Likewise, the PNCC tollways may be divided if the markets appear unreceptive to the entire tollway and extension obligations. A profitable combination of segments would command a much higher price if unaccompanied by unprofitable or high-risk segments. Similarly, the analyses indicate that the South Luzon Tollway is estimated to have an internal rate of return at 25 percent and may be more easily divested separately from the North Luzon Tollway with an internal rate of return of 22 percent. Largely due to the high expectations for high traffic growth in Manila, the MMT has an internal rate of return of 24 percent. These observations can be used to support the alternative privatization options which divide PNCC into its profitable parts for privatization. It is important to remember, however, that these and other observations regarding the extensions (including the MMT) are entirely dependent upon the hypothetical assumptions regarding future traffic and toll rates.

It also is clear from looking at the different scenario results that two of the extensions could be the most detrimental to cash flow. The estimated internal rates of return of the Tarlac - Carmen extension of the North Luzon Tollway and the Calamba - Sto. Thomas extension of the South Luzon Tollway are particularly low at 19 percent, and, given the uncertainties of their future traffic flows and construction costs, these proposed extensions may be unattractive to potential investors and thus may hamper a successful sale. Instead of selling the extensions outright, the Government may separately divest these unattractive extensions with B-O-T schemes coupled with arrangements for higher toll rates, loan guarantees, subsidization, or a guaranteed rate of return.

Exhibit IX
PNCC Tollways
Estimated Internal Rates of Return
Base Construction Costs
Base Traffic Growth

North Luzon Tollway:	
Current Tollway	29%
Extension: Mabalcat – Tarlac	21%
Extension: Tarlac – Carmen	19%
Total North Luzon Tollway	22%
South Luzon Tollway:	
Current Tollway	36%
Extension: Calamba – Sto. Thomas	19%
Extension: Sto. Thomas – Lucena	23%
Total South Luzon Tollway	25%
Metro Manila Tollway	24%
PNCC Tollways	24%

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V. CONCLUSIONS

A. Strategic Implications of the Financial Analysis

As a result of the hypothetical financial analysis, Price Waterhouse has reached the following conclusions regarding privatization of the PNCC:

1. Large and Sustained Toll Increases Are Needed

Given the projected limitations on traffic growth, the extensive rehabilitation needs, and the cost of the required extensions, substantial and sustained increases in the toll rate are absolutely vital to both the salability and financial viability of the PNCC. All scenarios with low or moderate toll rate increases yielded a negative value for the tollways in excess of the nominal value of the government's holdings. This means that if all of the TOA obligations and rehabilitation needs were imposed on the buyer without a substantial toll increase, the government would have to *pay* a buyer to take over the tollways franchise and its responsibilities.

In real terms, toll rates have declined by roughly two-thirds since 1983. A 200 percent increase would simply return the toll burden on users to approximately the 1983 level. So long as the extension construction obligations are passed along to a buyer, the government will have little flexibility to reduce this burden by discounting its stake in PNCC.

2. The Government Cannot Expect Full Recovery

Under all scenarios examined in the financial analysis, the government will have to significantly discount the book value of its existing shares and liens before PNCC can be sold. In some of the low toll increase/high extension cost scenarios examined, the government would have to forego any recovery and *pay* a buyer to take over the Franchise. Even if toll rates are increased by 200 percent and thereafter with the rate of inflation, the government will likely have to write off a large proportion of its exposure if investors are to hope for the kind of return suggested by the recent Supreme Court ruling (27 percent nominal rate).

3. The Regulatory Process Should Be Revised

The toll rate regulatory structure and the process by which toll rate increases are approved should be revised. Otherwise it may not be possible to attract private investors. Specifically, the regulatory structure should be changed from the current cost index to a traditional utility rate-base approach that better tracks the expected market rate of return, actual revenues, and the level of capital investment, or to a truly automatic index (without TRB approval) that is linked to the overall inflation

rate. Second, the rate approval process should legally obligate the TRB to routinely approve rate requests which achieve the required return on investment.

B. Observations on the Privatization Options

In addition to these privatization strategy considerations, Price Waterhouse makes the following observations regarding the privatization options.

1. Extension Obligations Should Be Restructured

Certain strategies designed to reduce investor risk, such as canceling the obligation to build some or all of the proposed extensions, may be necessary to ready the tollways for sale. Moreover, changes in the toll regulatory method may be necessary to assure the buyer that toll revenues can rise to recover the full cost of the extensions. If these obligations cannot be revoked and the regulatory approach modified, then the government may find it easier to privatize PNCC by offering the existing North and South tollways separately and finance the southern extension and Metro Manila Tollway through B-O-T arrangements.

2. The Tollways Should Not Be Segmented

Segmenting the existing tollway into portions that have been paid for and those that have not will make privatization much more difficult (but not impossible) than selling the tollways as a whole or as separate North and South divisions. The reason for this is that surpluses from "paid for" segments are needed to pay for extensions, expansions, and rehabilitation. However, this does not mean that tolls cannot be reduced or eliminated on certain segments. So long as the tolled segments generate enough revenue to fulfill the obligations passed along to the buyer and provide for a reasonable profit, having untolled segments should not be a barrier.

3. Low-Traffic Extensions Should Be Delayed

Despite the current management's enthusiasm for extending the north and south tollways, the extensions, particularly of the North Tollway, may be a drain on the revenues of the existing tollways since they are unlikely to have the same traffic densities as the rest of the roadway, which is barely covering costs as is. Most of PNCC's toll is generated by the urban sections, with traffic tending to fall off substantially in the segments furthest from the city. Further outward extensions are likely to follow the same pattern of declining traffic. The Metro Manila Tollway may offer higher traffic densities and more revenue per mile than the north and south extensions, but perhaps also suffer higher construction costs and competition from the planned free roadway closer to the city. In any case, without extensive subsidy from the existing system, extensions and the MMT may have to be delayed until the demand for their use (measured by toll revenue) can justify their cost.

4. Issuing New Stock May Help Privatization

The establishment of an employee stock ownership trust coupled with the sale of shares to a strong management group offers a politically attractive method for privatizing the tollway while offering at least some possible recoupment of the government's losses. In addition, a new equity issue combined with discounting of the government's liens would both dilute government ownership of the PNCC Tollways and facilitate the financing of these expenditures by lowering the debt/equity ratio.

5. The Tollways May Be Leased As An Interim Step

Writing down the government's investment may be a politically painful process, so a lease may be more appealing than an outright sale. The Franchise held by PNCC is merely the right to collect tolls and the obligation to operate, maintain, and expand the tollways. Although this arrangement is similar to a lease, a new lease could be created with payments made back to the government. In this manner the government could effectively privatize all of the obligations of the Franchise without having to explicitly write down its investment. The lessee would make lease payments back to the government that were linked in size to the profitability of the tollways. This arrangement should be considered if it appears that potential buyers are, in the government's opinion, too steeply discounting the value of future profits. Once the "privatized" tollway has a better financial track record, it can be sold.

C. Additional Considerations for Privatization

Aside from these basic conclusions, there are several additional suggestions that should be considered in the privatization strategy.

1. Perform Efficiency Review of PNCC Operations

PNCC is shedding workers and assets quickly, so it is not yet clear what is the leanest, most efficient operating state for PNCC. Firms proposing to buy the PNCC may be deterred from buying an apparently inefficient organization, particularly if the buyer is prevented from laying off any excess workers. The APT should take steps to achieve, or at least identify, that optimal level of staffing and equipment, so that PNCC can be primed for sale.

2. Consider Congestion and Occupancy Pricing

Traffic increases will eventually reach the physical limits of the roadway and tollway revenues will stagnate, although PNCC has no projections for when that will happen. However, as much as any assumption used in this analysis, that capacity limit will determine the size of the toll increase required to make the Franchise profitable. Any increase in the effective capacity of the roadway will tend to increase the likely sale

price. Therefore, PNCC, APT, and TRB should jointly investigate a congestion pricing plan, with premiums paid for single-occupant vehicles and peak-hour travelers. This would improve the revenue-generating capacity of the tollways, diminish the impact of toll rate increases on lower income users (who tend to be more dependent upon jeepneys and buses), and postpone the time at which the facility reaches the limits of its capacity.

3. Conduct Full Financial Audit of PNCC

A full audit of the company should be done sometime after PNCC completes its asset sale program and before the privatization process begins. The destruction of records, the continuing negotiations with private lien holders, the continuing sale of construction assets, and the deteriorating condition and declining market value of other PNCC assets means that estimated values for PNCC holdings are becoming outdated. Prospective buyers will want to conduct their own due diligence review, but a thorough and recent government audit is clearly a first step in restructuring the company and attracting buyers. This is particularly important if the tollways are to be sold in segments or (in part) to the employees.