

Case Study 2: Risk Allocation and Mitigation in a Road Toll Project

Thursday, 10:45 to 12:00



Session agenda

1. Road concessions
2. The Tribasa Toll Road
3. Risks and mitigation
4. Performance and failure
5. Summary and further reading

Concessions of toll roads

- A concession entitles the winning bidder to finance, build or improve, operate and maintain a highway for a specified period of time. In return, the concession holder obtains the right to receive toll revenues generated by the highway.
- Toll roads are typically financed in stages:
 - Short term borrowings and equity contributions to finance construction; and
 - Longer term financing secured through the toll revenues, once the highway is in operation.
- The government furnishes the design for the toll roads and also monitors its construction and regulates its operation.
- The term of the concession may be extended if the highway use falls below specified levels. When the concession terminates, the right to operate the highway and collect tolls reverts to the government
- The government owns the toll road throughout the term of the concession.

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The Tribasa toll road project

- Concessionaire: two wholly owned subsidiaries of Grupo Tribasa S.A. de C.V. (“Grupo Tribasa”).
- Tribasa toll roads comprise:
 - 13.9 mile Ecatepec - Piramides toll road located near Mexico City (1991) – initial concession for approx 4 years, extended to 20 years; and
 - 29 mile Armeria - Manzanillo toll road located on the west coast of Mexico (1991) – initial concession for approx 9 years, extended to 13 years.
- Both concessions can be extended if traffic volumes fail to reach certain specified targets.
- Initial funding was a mix of contractor and local financing.
- Refinanced in 1993.

Refinancing of the Tribasa toll roads

- In 1993, Salomon Brothers placed US\$110m of 10.5% notes due 2011, issued by a single-purpose Mexican Trust (“Tribasa Toll Road Trust 1 Financing”).
- It consisted of a Eurobond offering and a simultaneous Rule 144A private placement in the US.
- The obligations of the Trust were secured by collection rights under the two toll road concessions and the toll revenues generated by them as well as the investment income the Trust earns on its assets and any insurance proceeds received.
- At the closing for the Note issue, the Trust entered into an operating agreement with a subsidiary of Grupo Tribasa to serve as the toll road operator.

Profitability and creditworthiness of the toll roads

- Determined by traffic volumes on the toll roads.
- Base case:
 - Net Cash Flow / Total Debt Service ≥ 1.40 ; and
 - Revenues Available for Debt Service / Total Debt Service ≥ 1.45
- Reduced Economic Activity case (traffic growth 1% slower, inflation is greater, peso devalues more rapidly):
 - Net Cash Flow/ Total Debt Service ≥ 1.31 ; and
 - Revenues Available for Debt Service/ Total Debt Service ≥ 1.35

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Risks in infrastructure financing

- Currency risks include:
 - depreciation of local currency;
 - currency mismatch of revenue and cost streams; and
 - inconvertibility of local currency into another currency needed to pay certain expenses (such as debt service).
- Political risks include:
 - change of government;
 - change of government policy; and
 - unanticipated developments such as civil unrests, national strikes, etc.
- Economic risks include:
 - insufficient demand; and
 - lack of sufficient data to make needed forecasts.
- Completion risks include:
 - large and complex nature of projects, with long construction periods.

Risk minimisation features in the Tribasa toll roads project a

- Dual Debt Amortisation Schedule – to allow for variability of the project’s toll revenue stream:
 - contractual amortisation schedule; and
 - contingent amortisation schedule.
- Debt Service Reserve Fund – to mitigate currency risks:
 - a portion of the proceeds from the Tribasa Toll Road Trust 1 Financing was used to provide initial funding for the Fund (US\$7,361,000); and
 - the Fund holds US dollar balances and is available to pay debt service on a timely basis should the general account lack sufficient funds to cover a scheduled debt service payment.

Risk minimisation features in the Tribasa toll roads project b

- Limitations on dividend distribution, permitted only if:
 - all senior cash payment obligations have been met;
 - one month's operating and administrative expenses have been provided;
 - no event of default or of blockage has occurred and is continuing;
 - the ratio of net cash flow to scheduled debt service for the immediately preceding four semi-annual periods has satisfied specific tests; and
 - the amounts in the Debt Service Reserve Fund and other accounts exceed a specified minimum.
- A detailed traffic report was commissioned on the operating history of the toll roads, demand forecasts, business and financial prospects, etc which enabled a quantification of the economic risks and therefore also the credit risks.

Risk minimisation features in the Tribasa toll roads project c

- An independent engineer was engaged to regularly examine each toll road and ensure that both tolls roads are properly maintained.
- The Trust is required to 'gross-up' the interest payments to the Noteholders to fully cover any withholding tax.
- The trustee of the Trust can remove the operator, insist on toll increases or demand operating changes if an event of default occurs.
- The Trust arranged suitable business interruption insurance and property and liability insurance.
- The Trust structure was employed to insulate the Noteholders from bankruptcy risk associated with Grupo Tribasa or its subsidiaries.

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Overall performance of the Mexican Toll Roads Program

- Between 1989-94, 53 concessions were awarded for approx 5,500km of roads, at an investment of US\$13bn (52% from domestic commercial banks, 29% concessionaire equity and 19% federal and state government grants and equity).
- However, gross miscalculation of investment costs and operating income led to an unsustainable set of operating conditions:
 - local commercial banks faced with non performing loans of US\$4.5bn - US\$5.5bn;
 - concessionaires faced with writing off significant portions of their investment;
 - government under severe pressure to inject scarce resources to rescue investors; and
 - users faced with very expensive toll roads.
- The situation was further worsened by the currency crisis of December 1994.

Factors leading to failure of Mexican toll roads program a

- Weak government and institutional capacity in relation to the program's scope:
 - understaffing and limited institutional capacity within the government;
 - lack of transparency in public and private sector relationships; and
 - delays or actual defaults in fulfilment of the financial obligations of the government.
- Poorly developed financial markets :
 - underdeveloped local financial markets with insufficient capacity to provide long term fixed rate financing; and
 - poor financial discipline and lack of capacity of government owned banks.

Factors leading to failure b

- Inadequate planning and regulatory frame:
 - lack of an intermodal development strategy without required coordination; and
 - piecemeal pattern of contracting.
- Inadequate tendering process and concession design:
 - insufficient and inefficient pre-selection of bidders; and
 - in all but a few concession agreements, the concessionaire could adjust the tariffs only with prior approval by the Secretary of Communication and Transport, implying reduced flexibility to maximise cash flow.
- Legal disputes arising between a private party and the govt were to be resolved within the constraints of the Mexican court system, representing a significant risk to international investors.

Factors leading to failure c

- Project level cost overruns: Average cost per km of new highway rose from the original estimate of US\$1.7m to US\$2.6m and then further to US\$2.8m, caused by a number of factors:
 - projects often broke ground with only preliminary engineering and design work;
 - construction often began without first securing right of way;
 - many projects were financed under very loose cost-plus construction arrangements or none at all; and
 - in some projects, construction came to a virtual standstill because of delays in issuance of permits for purchase and use of chemicals and dangerous substances.
- Demand (and thus revenue) shortfall:
 - shortcomings in the traffic studies reflected a general lack of expertise – trucks were less than 5% of the traffic on many roads, leading to a weighted average tariff much lower than what was originally expected; and
 - lack of sufficient marketing of the toll road in terms of their time and cost savings.

Factors leading to failure d

- Project finance issues:
 - demand for higher equity cushions and debt service coverage ratios from lenders led to equity contributions increasing from 25-30% of project costs to 50%;
 - adjustment clause in concession agreement to shorten term if traffic exceeded guaranteed levels led to significant disincentives to apply true risk capital;
 - lenders were not allowed a collateral assignment of the concession agreement, which greatly reduced their bargaining power; and
 - entities with multiple concessions could use their cash flow across projects making monitoring difficult.

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Summary

- There are various techniques that can be used to mitigate project risks.
- A strong PPP framework is important for developing projects as this can bypass a number of impediments to creating successful projects.
- Realistic forecasting and project planning is essential.
- Good overall strategy and coordination, and good technical capacity in the procuring authority are important factors for success / avoiding failure.

Further sources

Online

1. World Bank (1997) "A Retrospective on the Mexican Toll Road Program (1989–94)"
<http://rru.worldbank.org/Documents/PublicPolicyJournal/125ruste.pdf>
2. Standard and Poor's (2006) "A Credit Review Of Mexico's Toll Road Sector"
<http://www.robbain.com/A%20Credit%20Review%20of%20Mexico%27s%20Toll%20Road%20Sector.pdf>

Books

1. Finnerty (2007) "Project Financing: Asset-based Financial Engineering" pp320-337