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Post Evaluation (Ex-Post) of Financial Sustainability of Toll Road E03: A Sri Lankan Case Study

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1. Introduction

Transport infrastructures are needed for the provision of mobility facilities for an economy to function. Though these infrastructures are in general high cost investments, they are vital to a country`s economic development and prosperity. Financing of these projects, particularly in developing countries is under take neither using non-recourse nor limited recourse financing [1], [2]. For a project to be economically viable, it must certainly be financially sustainable [3]. Hence the main objective of an ex-ante financial study is to determine, whether a project could provide adequate returns to all stakeholders, based on reasonable and realistic assumptions [2]. During the recent past, the general public has expressed growing concern over the colossal amounts of borrowed money spent on the construction of expressways, but because of the absence of effectively carried out ex-post studies authorities have not been unable to convince the public of the financial sustainability of such transport infrastructure projects.

2. Literature Review

Although literature is widely available forex-ante and ex-post cost-benefit analyses, limited literature is available for the ex-post financial sustainability analysis of transport infrastructure projects [4], [5]. Investment decisions have been taken based on cost-benefit analysis as such ex-ante analyses had by default received priority [6], whereas ex-post financial sustainability analyses had so far been given less priority. As such, findings of this study will help to fill an existing knowledge gap in this specific sub-discipline.

3. Objective

Planning, executing and operating of transport infrastructure projects at present relies only on ex-ante appraisals, such as the outcomes of feasibility studies. For developing economies like Sri Lanka, ex-post evaluations will provide exact assessments/validations of ex-ante predictions [7].

The objective of this study is to perform an ex-post study for the toll road link E03. The E03 connects international airport at Katunayake and New Kelani Bridge, the entry bridge to Colombo. E03 was opened for operations in October 2013. The 26.6Km long E03 toll highway was constructed using limited recourse financing from the EXIM bank of China. The highway was selected as a case study to carry out an ex-post analysis to

ascertain the financial sustainability of transport infrastructure. Breakeven analysis was undertaken to ascertain the year beyond which positive earnings will remain with the RDA (GOSL).

4. Methodology

Even though E03 construction commenced on 18th August 2009, the first attempt to do so was taken by awarding a contract valued at LKR 10.914 billion in 2000. Subsequently after completing approximately US$40 million worth of physical work in 2002, the government was compelled to terminate the contract by paying LKR271 million to the contractor. Costs incurred during previous attempts by government for executing this project have been revealed to keep the decision makers aware of the status, but these costs have not been considered for the analysis.

Total land acquisition and resettlement cost of the entire tract, i.e., LKR 2.9 billion was borne by the government. Cost of land acquisition was taken into consideration in assessing financial viability. At the planning stage, EO3 design had considered a 20 year life span; which means E03 could maintain the design level of service (LOS) “D” until 2034. Ex-ante traffic projections had been carried out using origin–destination tables of the project cordon area [1].

For this analysis, this paper considered an analysis period equal to loan repayment period i.e., a duration up to year 2027.Further income from tolls, towing charges and damages to property by accidents were also taken as cash inflows, whereas operations, maintenance, loan repayments, and projected periodical maintenance costs were considered as expenditure elements. A simple ‘net cash flow’ analysis was carried out to ascertain whether the E03 expressway infrastructure is financially viable [3].

5. Analysis and results

Based on ex-post average daily traffic E03 is likely to attain LOS “E” by year 2025, i.e. E03 experiences a traffic growth rate of 48% annually. It was further revealed that 92% of E03 commuters comprised only category-1 vehicles: i.e., cars (Refer the Figure 01).

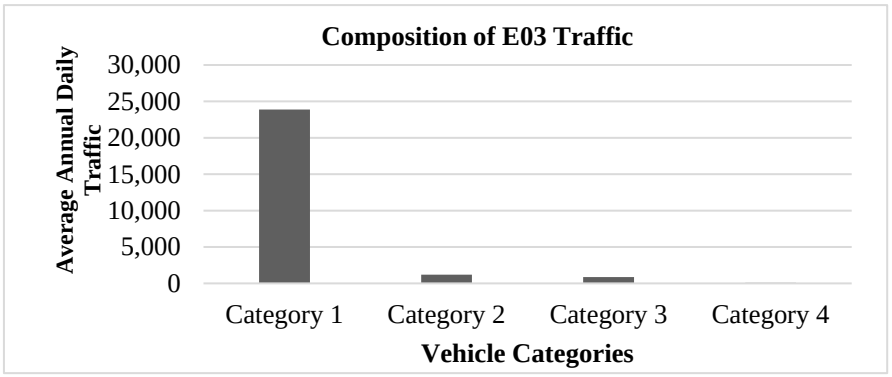

Figure 1: Composition of E03 commuters (based on 2017 data)

Ex-post analysis carried out considering revenue i.e., toll, towing and claims over damages as cash inflows and operations, routine maintenance and periodical maintenance as cash outflows to have an impression of 'net cash flow status' from the agency's point of view (refer Figure 02).

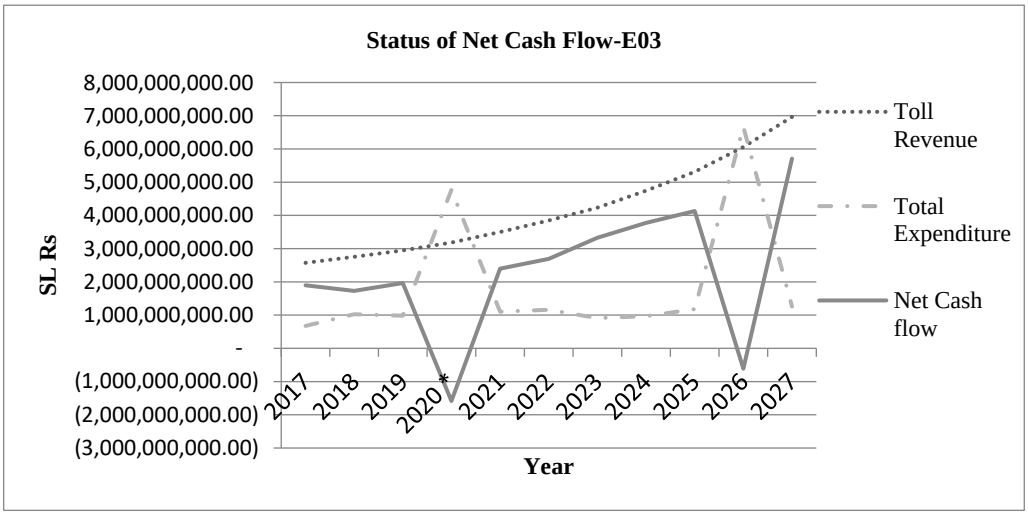

Figure 2: Status of net cash flow of E03 up to the year loan repayment is completed

The net cash flow reflects a negative cash status in year 2020 and again in year 2026. Further, ex-post analysis carried out to ascertain the year, by which loan repayments breakeven with E03 revenues revealed that this status will be reached in year 2023 and that by then E03 will reach its capacity i.e. 48000 PCU/day. This means, the E03 will start losing ideal expressway characteristics beyond year 2023.

6. Conclusions & Recommendations

Ex-post analysis of E03 clearly reveals that the ex-Ante analysis of E03 had not been able to correctly ascertain the financial viability of the investment, particularly from the point of view of the executing agency: i.e., Road Development Authority (RDA). Findings further reveal that unless RDA is not ready to manage the negative cash status in years 2020 and in 2026 respectively, E03 will start losing the ideal expressway characteristics in terms of riding qualities starting from year 2020. Analysis revealed that E03 would come one step down from the designed level of service "D" to level of service "E" beyond year 2023.

Ex-post analysis findings in general provide the opportunity to ascertain the degree of accuracy and robustness of ex-ante studies normally carried out during feasibility studies [8]. Further the findings of this study warrant the re-evaluation of current ex-ante studies of transport infrastructures. The study confirmed the need to have a new policy formulated to ensure that ex-post analysis be carried out for transport

infrastructure projects covering a minimum of five to 10 years after the project came into operation, particularly when funding is through borrowed capital.

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