



■ AND NOW, THE TRAFFIC REPORT

During my years with the Infrastructure Team at Standard & Poor's and, more recently, running my own technical consultancy for banks and institutional investors, I have reviewed over 100 toll road traffic and revenue (T&R) study reports from around the world. Traffic consultants often self-define their work as "investment grade," however my analysis suggests that this is commonly more of a marketing ploy than a serious attempt to understand and respond to the needs of potential financiers. The traffic studies themselves typically represent variations on a similar theme; however, the variance in the quality of reporting is staggering. This is unhelpful at a time when international investor confidence in traffic forecasts is at an all time low.

IF TOLL ROADS ARE GOING TO REASSERT THEMSELVES AS ATTRACTIVE INVESTMENT PROPOSITIONS, PROJECT RISK AND UNCERTAINTY NEED TO BE BETTER UNDERSTOOD AND COMMUNICATED.

If toll roads globally are going to reassert themselves as attractive investment propositions to a broad investor base, project risk and uncertainty need to be better understood and communicated. Improved study reporting has a central role to play in that context and those commissioning traffic studies need to be more demanding in their terms of reference. For too long, the outputs from traffic studies have been dictated by traffic consultants — not their clients.



From my reviews — and from numerous discussions with bankers, bondholders, insurers and fund managers — recurring reporting deficiencies have emerged. Addressing these deficiencies would go a long way to restoring investor confidence. The remainder of this article identifies ten simple yet practical ways in which the quality and transparency of toll road T&R study reports could be improved.

CLEARLY PRESENT AND JUSTIFY THE ASSUMPTIONS USED

All of the traffic modeling assumptions adopted in a study should be made explicit. This is rarely the case. The assumptions should be consolidated in a single table for easy review, rather

than being scattered across different chapters — and strong empirical evidence (with robust justification) should be provided in support. The implications of adopting alternative yet still plausible assumption sets on the resulting forecasts should be highlighted. Addressing these deficiencies would be of considerable benefit to an investor audience.

CLEARLY DESCRIBE THE PRODUCT OFFERING

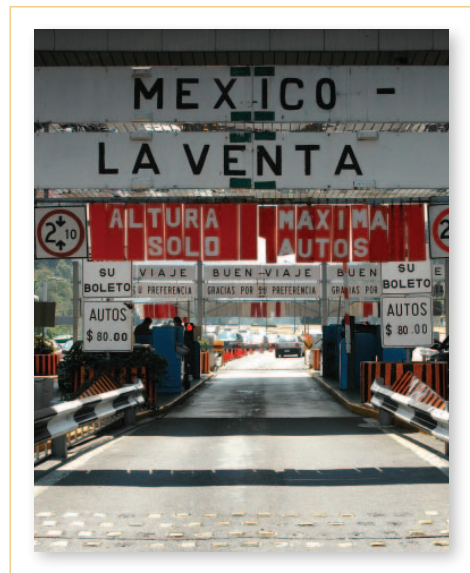
A number of traffic forecasting reports fail to describe the toll facility under consideration in simple terms highlighting the key characteristics of the project — such as future time savings or improved journey time reliability

— that would attract users. Facilities tend to be discussed in engineering or modeling terms. Investors need to understand what a toll road represents to consumers (the product offering); who would use it, why, how, when, for what purpose(s) and so forth. Lenders frequently talk about the “traffic story” pointing out that a simple story with an intuitive appeal is likely to attract a more positive response from credit committees than toll facilities and their attributes that remain difficult to comprehend and communicate.

AVOID OVER-EMPHASIS ON SUPPLY-SIDE ISSUES

Many reports I reviewed place considerable emphasis on the “supply side” of transport models, devoting numerous pages to descriptions of highway networks in the base and future years. In itself, this is not unreasonable, however rather less attention is often paid to the representations of base and future year demand in the models. Traffic forecasting is frequently described as being a blend of science and art. Supply side modeling represents the science. It can be depicted accurately — indeed, with military precision using today’s digital maps — and is generally uncontroversial. However, demand forecasting models are only as strong

as their weakest links — and the weakest links inevitably relate to the “art” of demand representation and the treatment of demand growth. To be of most help to potential investors, more critical attention needs to be focused on demand side issues, uncertainties and risks in traffic study reporting.



AVOID OVER-EMPHASIS ON A VALIDATED BASE YEAR MODEL

A well calibrated and validated base year model — one that reflects the travel environment and its competitive dynamic today — is an important tool for toll road traffic and revenue forecasters; although it is difficult to imagine that the leading consultancies

in this field would struggle to produce validated base year models. This is particularly true when, as is frequently the case, they limit themselves to relatively straightforward weekday peak-period modeling. For the investor, however, the construction of a satisfactory base year model is not the end of an important process — it is the beginning of one. It is the work that follows — focused on the future — that is of most importance. More emphasis placed on possible future states of the world (and their travel demand and asset usage implications) in traffic and revenue reports would help to improve credit risk analyst and investor understanding.

PROVIDE A CLEAR EXPLANATION OF THE LINK BETWEEN TRAFFIC AND REVENUE FORECASTS

A number of traffic study reports present their forecasts in terms of aggregate vehicle miles or revenue miles for future years — or the total number of toll transactions and total toll revenues. These output metrics clearly build from projections of traffic volumes using tolled links in the demand model; however the link volumes themselves are often not reported. This makes it difficult for the reader to understand how future traffic patterns

are expected to evolve in any detail and to determine whether the projections make sense. A clear explanation of how future-year link volumes translate into project revenues would help considerably.

CONDUCT COMPREHENSIVE AND REALISTIC SENSITIVITY TESTING

Most of the reports I reviewed present the toll revenue results from sensitivity tests. Frequently, however, these tests are limited in both scope and scale. Sometimes they appear to have been “cherry picked” for their lack of impact on future cash flows! Investors need comprehensive sensitivity testing of the key project variables about which there is uncertainty. These sensitivity tests need to be realistic in terms of the alternative parameter values being evaluated. Simply reducing an input by 10 percent with no explanation or justification does little to enhance investor confidence. Sensitivity testing needs to respond intelligently, on a project by project basis, to the specific risks and uncertainties to which financiers may be exposed.

DISCUSS WHAT THE RESULTS MEAN

Some traffic and revenue reports leave the reader with the distinct impression that the forecasts were



produced at a very late stage in the study. They are presented, fait accompli, at the end of the report — perhaps in a table — with little or no explanatory text. This is unhelpful. Investors need to know not only what the results are but what they mean. Is a forecast of 24,000 vehicles/day in the year 2015 high or low? Is it unexpected, in line with other toll road performance? Traffic consultants would add considerable value to their work if an explanatory commentary or discussion followed the presentation of their projections.

PROVIDE A CANDID DESCRIPTION OF FUTURE UNCERTAINTIES AND MODELING LIMITATIONS

In academic literature researchers are required to bring to their readers' attention any limitations associated with their work. It would be helpful if the authors of traffic and revenue studies adopted this practice. Instead of providing pseudo-comfort to potential investors, the avoidance of any discussion about modeling limitations — or other sources of uncertainty which could affect future cash flows — simply serves to undermine

THERE IS A RICH SEAM OF LITERATURE FROM AROUND THE WORLD DEMONSTRATING THE POTENTIAL EXPOSURE OF TRAFFIC AND REVENUE FORECASTS TO THE INFLUENCES OF ERROR AND OPTIMISM BIAS.

confidence. This is especially true when these limitations and uncertainties become apparent only under later cross-examination.

PROVIDE CONSISTENCY IN TERMS OF RISK ANALYSIS REPORTING

One of the challenges facing the reviewers of toll road traffic and revenue study reports is the lack of consistency in terms of reporting content and style. This is most evident when considering project risks and the technical advisor's commentary on investors' residual risk exposure. It would be useful if a common risk register or template was used by way of a summary. This would enable investors to build up their analytical experience and expertise over time and, importantly, would assist with the project

comparisons and benchmarking often used in credit analysis.

This type of template has already been developed, although it is employed by different traffic consultancies to different degrees. At Standard & Poor's we developed a "Traffic Risk Index" based on years of credit risk analysis specifically focused on toll road risks (see www.robbain.com for more detail). Key project risks are scored on a single summary sheet using a simple 10-point scale. Wider use of this template (or an alternative that fulfils the same role) would summarize the main project risks quickly and would help investors to apply more consistency to their analytical endeavours.

COMMISSION AN INDEPENDENT PEER REVIEW

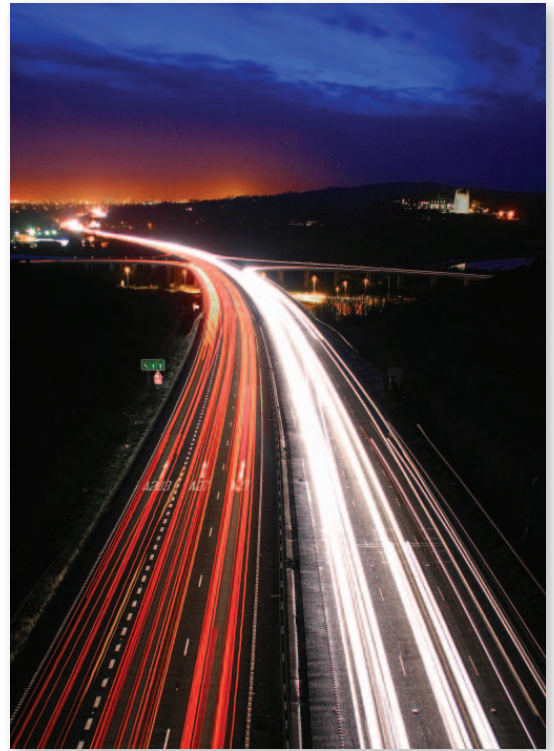
As a condition of receiving state support, some programs — such as the TIFIA program in the United States — require independent peer reviews to be conducted of toll road traffic and revenue forecasts. This is good industry practice and enhances investor confidence because it provides oversight of the original study by technically-conversant professionals. Selection of the impartial peer reviewer, however, is critical. Some are

less rigorous than others, suggesting a possible reluctance to be critical of parties who — next time around — might be conducting the peer review process themselves.

CONCLUDING THOUGHTS

There is a rich seam of literature from around the world demonstrating the potential exposure of traffic and revenue forecasts to the influences of error and optimism bias. These commonly represent the most critical operational-period project risks to toll road investors. In Australia, investor confidence in toll demand projections is reported to be at an all time low, encouraging procuring agencies to shy away from the traditional stand-alone user-paid toll road model. Better reporting with more transparency could help to reverse this regressive policy trend.

Although many advances have been made in transport modeling since the 1950s, for the purposes of accurate toll revenue prediction, today's traffic models — while essential — remain crude and imperfect. In the past, financial engineers have been seduced by consultants' marketing brochures and claims of predictive prowess. Too much reliance has been placed on pinpoint



forecasting accuracy leading to the development of aggressively structured transactions and financings with restricted flexibility. This has resulted in project distress and, in a number of high-profile cases, failure.

Project stakeholders who commission traffic studies need to reassert their requirements. You don't need to tell traffic consultants how to do their job. You simply need to reinforce your expectations in relation to study outputs. This is no different from the more

general public-private partnership philosophy with the spotlight usefully on outcomes rather than inputs. Toll road traffic and revenue forecasting best serves the investment community when

it is focused on identifying key usage trends and is accompanied by incisive reporting that provides an explicit and comprehensive discussion of all project risks and uncertainties.

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