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Fare's Fair? Why Tram Projects Are on a Bumpy Road

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A resurgence of policy interest has seen the introduction of modern-style, street-running trams, also described as light rail, metro, or rapid transit, to many cities worldwide. These projects have increasingly been funded under some form of public-private partnership scheme. A history of patronage and revenue forecast unreliability, however, supports the view that tram schemes relying entirely or significantly on unmitigated market risk will continue to struggle to attain investment-grade credit ratings. Ongoing international monitoring of the sector by Standard & Poor's Ratings Services indicates that the credit assessment of tram projects can be challenging whether or not they incorporate market risk. In terms of transparency, tram projects would benefit significantly from in-depth, technically proficient, and independent credit scrutiny.

If these public-private risk-sharing arrangements are to be successful, not only for trams but also for transport services in general, Standard & Poor's believes that their credit quality would benefit from a profound shift in attitudes. This shift would, in particular, diminish an environment in which often optimism and exaggeration are excused, if not positively encouraged. The view that, without optimism, such projects would never get off the ground merely promulgates unhealthy uncertainty-denial that can cloud open and rigorous risk assessment.

Estimates suggest that there are currently more than 450 tramway systems operating worldwide, with many more at various stages of planning, design, and development. Transport 2010, the U.K. government's 10-year transport plan, for example, refers to "Up to 25 new light rail or tram lines in major cities" across the U.K. The widely publicized underperformance of some systems in terms of low patronage, and consequently reduced fare-box revenue, however, has recently highlighted the danger of project structures specifically designed to pass demand risk wholesale to the private sector. Bondholders and lenders should be wary of such schemes.

Tram Troubles in the U.K.

Any recent review of the U.K.'s privately financed light rail sector is likely to prompt creditor unease. In London, Tramtrack Croydon Ltd., the concessionaire for Croydon Tramlink, recorded an increase in pretax losses of 34%, to slightly less than £10 million, and earlier this year stated that limited funds could prevent it continuing to trade. The company, which has about £100 million of debt, was looking to financial restructuring with enhanced grantor participation. Tellingly, when Amey, the consortium leader, recently sold a large portfolio of its private finance initiative projects to John Laing PLC, Tramlink was specifically excluded from the deal because of its risk profile. Patronage is reported to be 20% down on projections incorporated in Tramtrack's business plan.

In Manchester, Altram, the special-purpose vehicle running the city's Metrolink tram, filed accounts showing spiraling losses and interest charges running at about £8 million despite declaring an operating profit of less than £2 million. Overoptimistic passenger projections were blamed and, subsequently, the consortium returned the concession to the grantor, the Greater Manchester Passenger Transport Executive.

In the West Midlands, the Midland Metro tram, which is also operated by Altram and links Birmingham with the Black Country, reported losses of about £16 million since opening in 1999. As with the Manchester scheme, overoptimistic forecasts were identified as the primary reason for the revenue shortfall. Passenger levels were reported at about one-third of those projected for the opening year.

These examples continue a trend that began with earlier projects for reintroducing trams to U.K. cities. The South Yorkshire Supertram in Sheffield, which opened in 1995, experienced considerable difficulty in its early years, with revenues only reaching around 30% of forecasts. System performance subsequently improved, but it still operates well below capacity.

Some research suggests that even when tram forecasts are correct, they can be right for the wrong reasons. Early forecasts for one of the Manchester lines, for example, a tramway using existing railway track, predicted that all former train passengers would transfer to the tram. Only one-half of the total number did so. The forecasts were "met", and therefore the inaccuracy of the forecast largely masked, through unanticipated transfers from private cars and a boom in leisure travel.

Forecasts: What Goes Wrong?

The challenge of predicting the demand for new tram systems is not trivial, particularly given the long forecast horizons involved and the fact that, for most cities, trams are a new travel option with characteristics different from existing and/or potentially competing services such as private cars or bus services.

The restricted ability to learn through observing actual consumer behavior, choice and decision-making in situ leads many forecasters to use survey techniques that rely on interviewees' responses to hypothetical future-year travel choice sets in order to gauge likely demand. Proponents of these methods acknowledge the sensitivity of these responses, and therefore any resulting forecasts, to survey design. Poor or inappropriate survey design will lead to unreliable forecasts.

Even well-designed transport surveys have encountered problems. A survey may be conducted at one point in time, resulting in one set of forecast parameters, only for that same survey for the same project to be repeated at a later stage and result in quite different parameter values and forecasts. Timing is clearly important, with more credibility given to research conducted at a stage when interviewees can correctly conceptualize and respond to the travel alternatives presented to them.

Sample size can be another critical issue that affects forecasts and forecast reliability in a number of ways. Most transport models divide the study area into sectors or zones. The definition of these zones may be inappropriate, however, particularly if they are inherited from earlier incarnations of a model constructed for an entirely different purpose. Sample data at the zone level is subsequently "factored up" to represent population data, and so changes to those factors, especially if the individual samples are very small, such as the percentage of people from particular areas who would use a tram system, can have a significant impact on estimates.

The examples given above serve to highlight a few of the many sources of unreliability that can creep into patronage forecasts.

Other Potential Contributors to Overoptimism

A review of tram performance suggests additional reasons why schemes can fail to meet forecasts:

- Overestimation of the tram's competitive advantage in terms of journey time, reliability, frequency of service, fare level, and service quality over other forms of transport. This is particularly important for short-distance trips,

where the simple convenience of a bus can be underestimated. The majority of urban trips are over short distances;
- Overestimation of the tram's inherent attractiveness as a "superior" commodity, and therefore its ability, all things being equal, to attract passengers from competing public transport services and, importantly, from private cars;
- Underestimation of competitors' responses. This can be a particular issue in deregulated markets where, for example, bus services can be modified at very short notice. A number of trams have suffered from unanticipated and/or aggressive bus competition. Even in regulated environments, promises to restrict competition, again mainly from buses, have not always been honored. In some situations, buses have actually had their competitive position strengthened by policymakers' actions. Croydon Tramlink's underperformance has been blamed, in part, on a decision to freeze local bus fares;
- Anticipated demographic changes that were incorrect or did not materialize;
- Anticipated land use changes that were incorrect or did not take place;
- Provision of a service along a marginal travel corridor. The mere presence of a right of way or a disused rail line does not necessarily imply the existence of unmet demand for transport services;
- Incorrect assessment of the yield (revenue per passenger). A fare type mix different from that anticipated can lead to reduced revenues even if the number of passengers has been correctly forecast;
- An inadequate or incorrect representation of the base-year travel environment in the transport model; and
- A mismatch between what is represented in a future-year transport model and what is actually implemented. The processes of modeling and implementation may be years apart, and many things may change in the interim.

Beyond the U.K.

The unreliability of tram system projections is not only a U.K. phenomenon. A retrospective examination of light rail forecasts in the U.S. conducted in the late 1990s demonstrated that, on average, patronage was less than one-half of that projected. In the sample, only one scheme, that of Saint-Louis, exceeded its forecasts. The underperformance of such systems as the Sydney and Brisbane airport links in Australia, which report passenger numbers below those projected, has also recently been observed.

There are, even so, many tram and light rail systems around the world that perform in line with or beyond expectations. London's Docklands Light Railway is currently acquiring more rolling stock to meet demand and early indications from the new tramway in Bilbao suggest that passenger projections will be exceeded. Most recently, in the U.S., systems in Denver, Dallas, and Salt Lake City are reported to be struggling to cope with demand. This is clearly good news for scheme promoters, but it also underscores the difficulties of reliably forecasting tram usage.

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