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Crystal Balls and Black Boxes: Policy Effects on Optimism in Ridership and Cost Forecasts for New Starts Rapid Transit Projects

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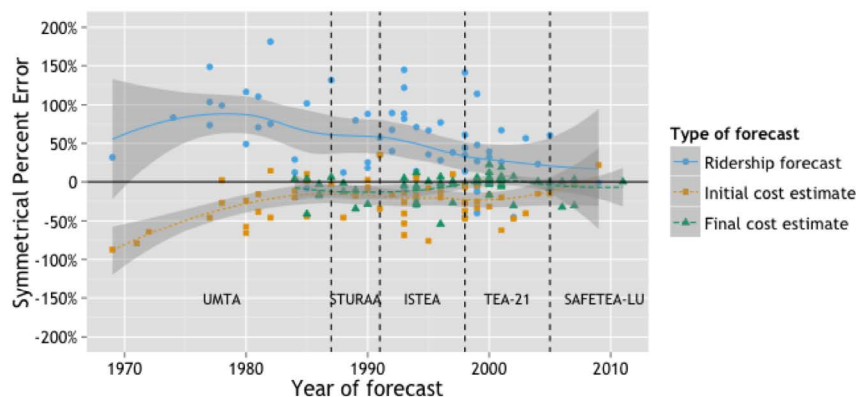
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Issue

Several studies have observed an optimism bias in cost and ridership forecasts for rapid transit projects around the globe (Flyvbjerg, Skamris Holm, and Buhl 2005; Kain 1990; Richmond 2005; Lewis-Workman et al. 2008; Pickrell 1992), which has led to billions of dollars of public investment in projects that have not performed as promised — in terms of either cost or ridership, and usually both. This bias has been a major cause of concern for project stakeholders, including the Federal Transit Administration (FTA), which spends about two billion dollars per year on new rapid transit projects in the United States through its Capital Investment Grants program, commonly known as New Starts.

Partly in response to credibility concerns raised by forecast bias, the FTA has made changes to the New Starts program over the years both to increase forecast accuracy and reduce reliance on forecasts in selecting projects for funding. Such changes include a requirement for ex post analyses of cost and ridership for completed projects and the introduction of several new criteria in addition to cost and ridership to evaluate proposed projects — such as anticipated environmental benefit and transit-supportive land use policies. Unfortunately, there has been no research to date that has examined how these changes in Federal policy have influenced forecast accuracy for rapid transit projects that receive New Starts funding.

Research Findings



- The accuracy of both ridership forecasts and initial cost estimates has improved substantially over time.
- The accuracy of final cost estimates has, for the most part, been relatively good and relatively stable over time.
- Over the history of the New Starts program, there have been trends towards shorter construction durations, longer (followed by shorter) horizons for ridership forecasts, and preferences for particular modes at different points in time.

KEY TAKEAWAYS

- The accuracy of cost and ridership forecasts has improved substantially over time.
- Perspectives on the purpose of cost and ridership forecast have shifted to bring goals of project sponsor into better alignment with those of project evaluators.
- The most accurate forecasts are for projects that represent incremental changes to the existing transit network.

“Accuracy has improved substantially over time, giving us reason to be optimistic about optimism bias.”

Findings (continued)

- The New Starts program has been successful in creating a more results-oriented mindset among local project sponsors, so local goals are in better alignment with those of the FTA.
 - Early in the history of the New Starts program, forecasts were seen as a means to overcome federal skepticism of the value of transit investments.
 - Later, forecasts came to be seen as an important basis to ensure fair competition among cities and regions competing for scarce federal funds.
 - Most recently, there has been a more explicit recognition of the usefulness of forecasts for local decision making.
- More accurate ridership forecasts are most strongly related to shorter construction durations.
- The most accurate initial cost estimates are for projects that represent only incremental changes to the existing transit network, as indicated by their low costs, short construction durations, and relatively small increases in total system mileage.
- Higher federal funding shares are not associated with less accurate forecasts.

Approach

This study addresses this gap in the literature through a mixed-methods approach involving semi-structured interviews with a dozen transit planning and forecasting professionals and a quantitative analysis of 65 completed transit projects to determine whether and to what extent forecast accuracy has changed over the past 40 years and the degree to which these changes can be attributed to specific federal policy changes. Interviewees include current and past staff from six different transit agencies, three different consulting firms, and the FTA (or its predecessor, the Urban Mass Transit Administration). Data on completed transit projects were gathered from reports published by the FTA.

Conclusion / Recommendations

- Forecasts for projects with characteristics that are associated with optimism bias should be adjusted to correct for expected bias.
- Cost and ridership forecasts should include information about the degree of uncertainty that is associated with the forecast.
- Project evaluation methods should be designed to accommodate and acknowledge uncertainty.

Works Cited

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