

Executive summary

Socio-economic cost-benefit analysis (CBA) provides a quantitative measure of the extent to which, over its lifetime, a project or initiative will bring the community benefits that exceed its costs of construction and operation. This report describes efforts to improve the quality of transport CBA and its applicability to decision making. Three areas are addressed in detail: strategies for making the most of CBA, valuing and forecasting reliability benefits, and capturing wider economic impacts. The report is based on the papers and discussions at a roundtable meeting of 30 experts held in Paris in November 2015.

Key findings

CBA is a powerful framework that can be very useful to governments making investment decisions. However the standard application of transport CBA faces three major challenges that have attracted the attention of practitioners and researchers. First, there can be a mismatch between the information most sought by decision makers (such as the impact on jobs and regional growth) and what is supplied by a standard CBA (impact on national welfare and resource gains). Second, the scope of benefits captured in a standard CBA is generally constrained by practical limitations of forecasting and valuation capability. Third, fundamental changes to the quantity or locations of businesses, investments, households and employment that are anticipated from transport investments are not captured within standard CBA. Roundtable participants took the view that a multi-faceted approach is needed to address these shortfalls; CBA theory and practice need to be gradually expanded to incorporate more impacts in the rigorous valuation and forecasting framework; and CBA results need to be more effectively linked to other criteria in the broader decision-making framework, including by bringing in a more diverse evidence base.

Main recommendations

CBA guidelines can be expanded to include reliability and some wider impacts

The current evidence base on the valuation and forecasting of reliability benefits, agglomeration benefits and labour supply benefits provides a sufficiently rigorous basis for inclusion within the core CBA of major transport projects. If properly applied, based on local evidence, the formal inclusion of these benefits is better than either excluding them or applying simple mark-up rules.

Further research into reliability benefits is needed to improve confidence in results

There is significant variation among transport users in forming expectations about travel-time reliability and in responding to it. Current approaches to valuing and forecasting reliability benefits take a simplified approach in the interests of practicality. However, more research that disaggregates results and examines the linkage between the standard of reliability and the transport choices made by users will improve accuracy and build confidence in the results. The behavioural feedback can range from changes in transport mode choices through to fundamental reorganisation of housing and business locations. Closer international collaboration of researchers to share techniques, data and results is a promising avenue for accelerating progress in this regard.

Wider economic impacts should be examined in cases where they are expected to be significant

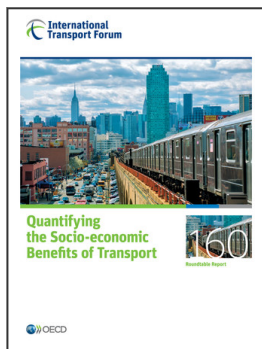
The relocation and reorganisation of businesses and households (a change in “economic geography”) is a major motivation for some transport projects, such as regeneration schemes or transit-oriented developments at rail stations. Wider economic impacts from such changes need to be communicated to decision-makers. Formal inclusion of these impacts within CBA requires the identification of relevant “market failures” in the project area (such as monopoly power) and the nature of the activity the project affects. In many cases, there is no way of confidently predicting the economic geography outcomes when co-ordinated actions among actors are required, such as in property development, so the best approach is usually the application of scenarios. These scenarios can be informed by *ex-post* analysis of similar projects as these can reveal success factors and the reasonable range of impacts that may materialise. For any project though, a strong and scrutinised case for the inclusion of wider benefits is required to overturn the traditional assumption that user benefits adequately account for the whole economic impact of a project.

Further research into the impacts and tools for capturing wider impacts is needed

Practitioners currently face a choice between appraising the wider economic impacts of a transport project by taking a “user benefits (CBA) plus wider benefits” approach or using a “big model” (such as a Land Use-Transport Interaction model) to capture all impacts. Roundtable participants generally favoured the former approach. This is because no big models are yet able to adequately capture all the relevant impacts of a transport project, they require a very large amount of data and the complexity of the modelling required undermines transparency. However, given that LUTI or general equilibrium model, at least in theory, should be able to produce answers to the most relevant questions these may ultimately be best placed to address the limitations of CBA. With further research, there may come a point where the big models become responsive, accurate, and cheap enough to apply as the preferred project appraisal approach. Most roundtable participants though were of the view that that time has not yet arrived, so there is a strong motivation to keep improving the practice of CBA.

CBA can play an important role in decision making, but need not dominate

CBA is valuable yet imperfect. Appraisal is most useful to decision-makers when the CBA approach is clearly aligned with the objectives sought, when it draws on the best local evidence available and when the shortfalls and uncertainties are clearly highlighted in the analysis. Available evidence will not always be of sufficient quality to justify inclusion within the formal CBA. In such cases, supporting frameworks and alternative evidence will be useful to communicate possible project impacts. Two options in particular were highlighted at the roundtable. First, by drawing quantitative and qualitative insights from similar past projects, *ex-post* analysis can give vivid insights into potential economic geography changes and their driving forces. Second, complementary tools, such as economic impact analysis and qualitative explanation of non-quantifiable impacts, can help address shortfalls inherent in CBA. Presenting such diverse information to decision-makers is better than producing a single performance measure, since the latter can generally only be achieved either by including bold and unfounded assumptions or by ignoring impacts altogether.



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