

### **Economic evaluation in the planning of transport infrastructure development**

Economic appraisal or ex-ante evaluation has a vital role in the planning and preparation of transport infrastructure investment. It can be applied both on project and programme level. Mainly, economic appraisal is conducted in order to determine if the investment in transport infrastructure development or maintenance yields an adequate return in terms of benefits given budget constraint. It is also carried out to choose the project with the highest return in relation to standards adopted. Usually, economic appraisal examines the net contribution that the investment will make to the society as a whole.

Primarily, the following techniques are used for the evaluation of transport projects:

- Cost-benefit analysis (CBA)
- Multi-criteria analysis (MCA)
- Cost-Effectiveness analysis (CEA)

Considering transport infrastructure has a long or infinite life, decision makers should incorporate life-cycle analysis into the appraisal of the transport project.

In the process of appraisal identifying the benefits and costs of the transport infrastructure investments plays a central role. Hence all the effects, whether they be direct such as travel time savings and reduction in number of accidents or indirect (or wider) such as change in productivity growth and employment, should be considered.

Economic analysis generally considers efficiency, an attempt to maximize social



welfare, as its main objective. However, some other impacts, such as equity (fairness), environmental effects and regional development are also considered in the project evaluation.

There is a wide range of literature and thorough methodology on project appraisal studies. There is a specific methodology for calculating development impact used in project appraisals and some development banks and bilateral donors have developed guidelines to link projects to direct results in job creation and poverty alleviation.

Within this literature there is also considerable distinction to be made about the methodology used in developing countries versus that in developed countries. It is widely assumed that in developed countries with fairly established transport networks, the benefit to be achieved is more marginal than in a developing country where an area may be made accessible for the first time. Nevertheless, the same overall approach can usually be followed in both categories of countries. Moreover, some elements of the practice in developed countries can be implemented in developing countries.



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This subtheme reviews some of the methodologies in use for the evaluation of transport projects from the perspective of developing and transition economies. It also examines recent evolution of those methods and best practices of implementing project appraisal.

### Key Documents:

- Rolt, J., Fouracre, P., Davis, A., [Overseas Road Note 5: A guide to road project appraisal](#), Transport Research Laboratory Ltd, Wokingham, United Kingdom, 2005.  
This document gives guidance on carrying out appraisal of road infrastructure investment projects in developing and transition countries. It is intended for use by administrators, economists, transport planners and engineers in road and transport ministries. It presents contextual material to give policymakers and advisors a clear overview of the process of road appraisal, and what should be expected of a planning team.
- Ahmed, F., Vaidya, K., Wardman, M., [Rural Travellers' Time Savings in Developing Countries: Can They be Measured and Do They Matter?](#) - presented at the 11th World Conference on Transport Research, June 24-28 June, 2007, Berkeley, USA.  
This paper explores the conventional theory and issues related to valuing rural travel time savings in developing countries. Case studies in Bangladesh, Ghana and Tanzania demonstrate that the stated preference approach to valuing time savings, supported by

studies of local socio-economic conditions, are feasible and produce robust results.

- European Conference of Ministers of Transport, [Assessing the Benefits of Transport](#), Organisation for Economic Co-operation and Development, 2001.

This book discusses the full economic benefits and costs of transport infrastructure and explores ways to make good estimates of the full impact of planned investments on regional and national economies. It also highlights parts of different countries' approaches to measuring benefits as examples of good practice that could be used as guidance for other countries.

- [Economic Evaluation Methods for Road Projects in PIARC Member Countries](#), The World Road Association (PIARC) in French and English. 2004.

This report presents an up to date description and analysis of the methodologies used by PIARC member countries and international agencies for economic evaluation of road projects. This study is an expansion and update of the [earlier report on the same topic](#) (1999). Generic information on the purpose of economic evaluation, methods for economic evaluation, merits of the various evaluation methods, and methods of valuing impacts are covered in the earlier report.

### Case Studies:

- Tudela, A., Akiki, N, Cisternas, R., [Comparing the output of cost benefit and multi-criteria analysis:](#)

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[An application to urban transport investments.](#) Civil Engineering Department, Universidad de Concepcion, Concepcion, Chile, 2005.

This paper compares the outcome of Cost Benefit Analysis and a Multi-Criteria method when applied to a transport project. This comparison is done through a case study of the project that consists of the improvement of part of the road

system in the Chiguayante district, Concepcion, Chile

### Recommended Links:

- [Transport Analysis Guidance Website - WebTAG, Department for Transport, UK](#)
- [Victoria Transport Policy Institute, Canada](#)

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### For further information

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