

Authors Niek Mouter 

Title Comparison of the Dutch, Danish, Norwegian, Swedish and UK transport appraisal practices

Track General Papers

Director Mark Wardman 

Abstract Comparison of the Dutch, Danish, Norwegian, Swedish and UK transport appraisal practices Context, motivation and research questions Cost Benefit Analysis (CBA) has a long tradition as a widely used ex-ante evaluation instrument to support transport planners in particular for evaluating and ranking infrastructure investments (e.g. Eliasson and Lundberg, 2012; Hayashi and Morisugi, 2000). Still, substantive problems with the appraisal of spatial-infrastructure projects using CBA can be noted as discussed by Mackie and Preston (1998) and Mouter et al. (2013), amongst other things. Mouter et al. (submitted) conclude that comparison of appraisal practices might be an interesting method that can be used for rectifying these problems. This paper focuses on the advantages of this method and compares the Dutch, Danish, Norwegian, Swedish and UK transport appraisal practices. All of these four countries have serious CBA track records (Mackie and Worsley, 2013). Comparing practices can lead to improvements in three different ways. Firstly, when one learns that the other practice is 'better' improvements can be made by implementing the features of the other practice. Secondly, if one considers his own practice as state-of-the-art one is forced to underpin why the own practice is 'better' than the other practice which can be considered as a learning effect. Thirdly, if both practices have some favorable features one can try to combine these features and create the 'best of both worlds'. In the literature other contributions can be found with the same aim as this paper (e.g. Grant Muller et al., 2001; Hayashi and Morisugi, 2000; Odgaard et al., 2005; Mackie and Worsley, 2013). These contributions focus, amongst others, on the standard numbers used to value impacts of transport projects, the applied discount rate, for which types of transport projects CBA is obligatory. Because the above mentioned topics are already exhaustively studied in the literature, this study predominantly focuses on other topics in order to safeguard its scientific contribution. More specifically, this paper aims to answer the following research questions for the different practices: How is CBA embedded in the planning and decision-making process? How are uncertainties and risk handled in CBA studies? Which rationale is used for the selection of the discount rate? How are uncertainties presented in CBA reports? Subsequently, similarities and differences between the different practices are detected. Methodology For answering the research questions CBA guidelines, such as the Web Tag and the Review of the Norwegian CBA framework (Hagen et al., 2012) were studied. Also, contributions in the literature that reflect on the appraisal practices were reviewed. Moreover, 17 researches or policy makers were interviewed (five from the UK, four from Sweden, Denmark and Norway). [1] Selection of results The way CBA is embedded differs between countries. In Sweden CBA is used to rank a large number of potential projects for the investment program against each other. In Norway CBA is used to inform decision-makers with regard to costs and benefits of the different types of concepts to solve the transport problem. Subsequently, CBA is used to rank projects against each other. In the Netherlands, the formal role of CBA is to select the preferred project alternative from a shortlist of three project

alternatives. However, in practice CBA is also used by politicians to discuss the usefulness and necessity of the specific project. The updated Dutch CBA Guidelines (Romijn and Renes, 2013) prescribe that CBA practitioners are obliged to verify whether the political problem definition is plausible, besides estimating costs and benefits of the project alternatives in the CBA study. A special feature of the UK appraisal practice is that it is possible for objectors to contest the appraisal in a judicial review by putting their case before an inspector (Mackie, 2010); In Norway CBA hardly influences investment decisions (Nyborg, 2012). In Sweden predominantly planner's rankings of investments are influenced by CBA (Eliasson and Lundberg, 2012). In Denmark few projects are recommended with an internal rate of return lower than 5%; In the Netherlands it is obligatory to estimate costs and benefits with two scenarios that differ in macro-economic growth expectations, amongst other things. Other practices usually estimate effects for only one scenario. The Netherlands and Norway adjust for systematic macro-economic risk by enhancing the discount rate with a risk surcharge. The UK treats risk and uncertainty with quantified risk analysis. One of the reasons for not using a risk surcharge in the UK is that decision makers want to outweigh risk and return which is impeded by incorporating risk in the discount rate. Sweden and Denmark predominantly use sensitivity analysis; Although there are sound theoretical arguments for using declining discount rates (e.g. Atkinson and Mourato, 2008; Arrow et al., 2012;) only in the UK a declining discount rate schedule is incorporated in Transport Appraisal Guidelines. In Norway, a declining discount rate schedule is recommended in Hagen et al. (2012). Whether this recommendation should be adopted in Transport Appraisal Guidelines is currently debated. The reason for not using declining discount rates in Sweden is pragmatic. The argument to increase the discount rate using risk surcharges, and the argument for declining discount rates cancel each other out. The Review of the Norwegian CBA practice (Hagen et al., 2012) states that communicating uncertainties may result in a more complex and equivocal basis for making decisions. In the Netherlands, on the contrary it is obligatory to communicate uncertainties in the abstract of the CBA report. However, Annema et al. (2013) found that in only 25% of the Dutch CBA reports clear bandwidth were presented in the abstract. Literature Atkinson, G., Mourato, S., 2008. Environmental Cost-Benefit Analysis. The annual Review of Environment and Resources 33. 317-344. Annema, J.A., Frenken, K., Koopmans, C., 2013. Twaalf jaar MKBA van transport projecten. 106 rapporten geanalyseerd. Bijdrage aan het Colloquium Vervoersplanologisch Speurwerk 2013, Rotterdam. Arrow, K.J., Cropper, M.L., Gollier, C., Groom, B., Heal, G.M., Newell, R.G., Nordhaus, W.D., Pindyck, R.S., Pizer, W.A., Portney, P.R., Sterner, T., Tol, R.J.S., Weitzman, M.L., 2012. How should benefits and costs be discounted in an intergenerational context? Eliasson, J. Lundberg, M. (2012). Do Cost-Benefit Analyses Influence Transport Investment Decisions? Experiences from the Swedish Transport Investment Plan 2010-21. Transport Reviews, Vol. 32, Issue 1, p.29-48. Grant-Muller, S.M., P. Mackie, J. Nellthorp, A. Pearman, 2001. Economic appraisal of European transport projects: the state-of-the-art revisited. 21 (2), 237-261. Hagen, K. P., 2012. Official Norwegian Reports NOU 2012: 16. Review from a committee appointed by Royal Decree of 18 February 2011. Oslo. Hayashi, Y., and Morisugi, H., 2000. International comparison of background concept and methodology of transportation project appraisal. Transport Policy 7 (1), 73-88. Mackie, P., 2010. Cost-Benefit Analysis in

Transport: A UK Perspective, International Transport Forum Discussion Paper 2010-16. Mackie, P., Preston, J., 1998. Twenty-one sources of error and bias in transport project appraisal. *Transport Policy* 5 (1), 1-7. Mackie, P., Worsley, T., 2013. International Comparisons of Transport Appraisal Practice. Overview Report. Institute for Transport Studies. University of Leeds. Mouter, N., Annema, J.A., Van Wee, B., 2013. Ranking the substantive problems in the Dutch Cost-Benefit Analysis practice. *Transportation Research Part A*. 49. pp 241-255. Mouter, N., Annema, J.A., Van Wee, B., (submitted). Solutions for substantive Cost-Benefit Analysis problem: a key actors' perspective. Nyborg, K., 2012. *The Ethics and Politics of Environmental Cost-Benefit Analysis*. Routledge. Odgaard, T., Kelly, C., Laird, J., 2005. Current practice in project appraisal in Europe, in: *Proceedings of the European Transport Conference*. 3-5 October, Strasbourg, Association for European Transport. Romijn, G., Renes, G., 2013a *Algemene Leidraad voor maatschappelijke kosten-batenanalyse*. Centraal Planbureau en Planbureau voor de Leefomgeving. [1] Interviews are transcribed and analysed. The results are already published in a Dutch language report. Before June 2014 I will verify by the respondents whether or not I can use several explicit statements they made during the interview as illustrations.