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The management of methods for cost-benefit analyses in the infrastructure area

Summary

Since 1998 the overall objective of Swedish transport policy has been to ensure an economically efficient and sustainable provision of transport services for people and businesses throughout the country. The governmental initiative for measures in transport infrastructure is SEK 417 billion for 2010-2021, of which SEK 217 billion is to be directed at the development of the transport system.

Sweden's Riksdag (the parliament) and government have long advocated that social cost-benefit analyses (CBAs) should form the basis for decisions on infrastructure investments. Briefly, such analyses aim to weigh the costs of measures against their benefits for all citizens in society, and are used for systematic estimations and comparisons of the likely consequences of different policy options. The CBA used in the transport field has been thoroughly tested and has been deemed by independent parties to possess the characteristics required for providing decision-makers with relevant decision guidance.

In order to provide a good basis for decision-making, however, CBAs need to be both of high quality and comparable with each other. This places high demands on the processes in which the analyses are carried out. For example, it is important that results from the analyses are presented in a transparent and comprehensible way. On a more fundamental level, good management is also required of the analysis instruments (data models) being applied and the data supporting the models, as well as directions for carrying out analyses and presenting results, etc. In order for management to develop and function over time, expertise maintenance also needs to function, as do routines for information exchange, follow-ups and evaluation. For the purposes of this

audit, all of these factors are included in the term “management of methods for CBAs”.

Previously, the National Road Administration, the National Rail Administration and Statens institut för kommunikationsanalys (the Swedish institute for transport and communications analysis, abbreviated SIKA in Swedish) were responsible for developing methods for and carrying out cost-benefit analyses in the transport sector. These government agencies thus also shared the responsibility for the management of these methods. For this purpose, data collection, calculation parameters and estimation models have gradually been developed over several decades. The existence of specifically developed, advanced models for forecasting and calculation is characteristic of the sector.

In the spring of 2010, the National Road Administration, the National Rail Administration and SIKA were replaced by the Swedish Transport Administration and Transport Analysis, as part of a reform of government agencies. As from 1 April 2010, the newly formed Swedish Transport Administration is responsible for managing methods for CBAs in the transport sector, while Transport Analysis is responsible for continuously monitoring the Transport Administration’s efforts within this area.

Purpose and limits of the audit

The purpose of this audit has been to examine if the transport administrations (a collective term for the previous Road and Rail Administrations and the current Transport Administration), SIKA and the government have ensured that the management of methods for CBAs is effective and thus creates the conditions for maintaining the quality and internal comparability of the analyses. To do this, the audit has focused on the method management of analyses of investments in the road and rail sectors of the transport area. It does not include an assessment of the theories on which the analyses are based, nor of the quality of the analyses carried out or how they are valued in various decision-making processes – factors which obviously also affect the final result. Neither has the audit looked at the relative significance of the results of the analyses alongside the other decision guidance documents within the field.

SNAO's conclusions

The report sets out a number of criteria which should be fulfilled if the management of methods for CBAs is to be regarded as effective in the transport field. The management areas covered by the audit are data management, statistics, estimation assumptions (assumptions necessary for the analysis), forecasting and calculation models, routines for application, reporting and documentation, as well as expertise maintenance, development, follow-ups and evaluation.

SNAO has noted deficiencies in all of these areas. For example, there are no routines for how the large amounts of data supplying the forecasting and calculation models are to be quality assured, saved or spread to different users. There is also an overall lack of systems for managing – and of actual management of – these models, as well as of forums where different stakeholders can air their opinions and wishes with respect to the development needs of the models. Neither are there any routines to guarantee transparency about how the estimation assumptions underlying the analyses are arrived at. There are furthermore no clear guidelines for how the analyses are to be documented and, to some extent, for how the analysis results are to be presented. Deficiencies were also identified in the guidelines for how to carry out the analyses. On the whole, management is marred by a lack of continuity and of an overall approach.

Management is furthermore complicated by the fact that there are only a small number of people with detailed knowledge of how the forecasting and calculation models work. SNAO further notes that the Transport Administration's dependence on consultants for the management of methods for CBA amounts to a vulnerability in the planning system. This vulnerability is aggravated by deficiencies in terms of expertise maintenance and the control of management tasks.

It is SNAO's assessment that the observed deficiencies imply a considerable uncertainty with respect to the quality and comparability of the cost-benefit analyses, and therefore also of the political decision guidance documents. However, this audit has not included an impact analysis of these deficiencies, nor of how the results would actually be affected if the deficiencies were mitigated.

There are likely a number of reasons for why the deficiencies remain even though they must have been known for some time. It is SNAO's assessment that the causes are to be found in how the previous administrations were organised and how they acted, as well as in the government's passivity in the past. However, the government agency reform carried out in the spring of 2010 will hopefully contribute to a future development towards more effective CBA management. SNAO further sees as positive the development plan for management that was drawn up in collaboration between the previous traffic administrations

and SIKA, and which was published by the Transport Administration in connection with its establishment. The Administration has already initiated a few of the projects in the development plan, but on the whole has not progressed particularly far with these efforts.

To sum up, the conditions for a development towards effective management appear better than before. However, SNAO would underline that the completed government agency reform and the drafted development plan do not automatically guarantee such a development. Not least against the background of what has emerged in SNAO's interviews regarding the low historical status and considerable resource needs of management tasks, the area shows a need for follow-ups and proactive priorities. This of course puts certain demands on both the government and the Transport Administration.

Effective management of social cost-benefit analyses requires the area to be given priority in terms of control, organisation and resource allocation. Such priorities can, according to SNAO, be justified on the basis of the considerable costs and consequences implicit in transport policy decisions.

SNAO's recommendations

SNAO recommends that the Transport Administration

- Urgently build up a management of methods for CBAs which is reliable and sustainable in the long term. This process would advisedly be based on the observations in this audit regarding deficiencies and areas for improvement, as well as on the development plan published by the Transport Administration. It is important in this context that the Transport Administration conducts a renewed risk analysis to consider how to deal with these deficiencies
- Ensure that the management provides the conditions for a correct, transparent and consistent application of the methods, for long-term and physical planning as well as for other types of applications
- Consider, in this process, which management tasks should be carried out by consultants and which by the Administration itself, and formulate the associated consultancy contracts in such a way that management as a whole functions effectively.

SNAO further recommends that the government and Transport Analysis

- Specifically follow up the development of the Transport Administration's CBA management, and
- Ensure that impact analyses are carried out to see how various management deficiencies can affect the quality and comparability of transport policy decision guidance documents.