APPLICATION OF THE SOCIAL AUDIT CONCEPT TO AUSTRALIAN TRANSPORT ISSUES

M.K. EMMERY
Acting Deputy Director,
Bureau of Transport Economics,

B. CUTHBERTSON
Principal Research Officer,
Bureau of Transport Economics

ABSTRACT: *The Commonwealth Minister for Transport has advocated a social audit approach to the evaluation of the costs and benefits of transport projects and services to ensure that full consideration is given to economic, environmental, social, defence and resource allocation criteria. The Bureau of Transport Economics is undertaking a study of the application of this concept to Australian transport issues, and this paper is based on that study.*

The essential features of social audits, and Australian and overseas experience with related transport evaluation techniques are examined. Possible initiatives to promote the wider and more consistent application of social audits to Australian transport issues, and some key methodological issues, are also discussed.

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INTRODUCTION

The social audit concept appears to have its origin in the United States where it has been used to measure the social performance of individual business firms, with respect for example to health, safety and environmental practices and labour training and discrimination. The Commonwealth Minister for Transport has advocated that this concept be applied in a somewhat different context to assess the social worth of proposals from a national perspective, and in particular to apply it to Australian transport issues. The Minister has specifically proposed that the social audit constitute a procedure for investigating transport issues such as pricing, cost recovery, output and investment, and for guiding resource allocation within the transport sector.

The key objective of a social audit is to provide an evaluation mechanism which will incorporate all the significant costs and benefits of transport projects and policies, on the basis of a full consideration of the economic, environmental, social, defence and resource allocation criteria. In contrast to the traditional financial audit applied in private enterprise to measure financial or commercial profitability, the social audit measures the profitability of a project or policy to society as a whole by taking into account a wider range of effects. Ideally it attempts to take into account all significant monetary and non-monetary effects on society, and the distribution of these effects on the various groups affected in a society.

In some cases the outcome of a social audit will be very similar to that of a financial audit. This is likely to be the case where the transport service under investigation is provided in a competitive market and where the service primarily affects only the producer and user of the services and has little impact on outside parties. However this is frequently not the case with many transport services. For a number of reasons market forces operate imperfectly and cannot be relied on to determine the type, location, price and quality of transport services. This may be due to the presence of externalities in the form of, for example, accidents, pollution or traffic congestion, or the presence of monopoly elements, or to market distortions caused by various taxes and subsidies. It is common for transport projects and policies to have effects which extend far beyond the direct seller and buyer of the transport service. The impact of transport developments on economic activity and property values along transport routes, the benefits of improved access, and the costs of pollution and greater accident risks are some examples.

The social audit concept recognises the very complex and widespread repercussions which flow from major transport decisions. It is aimed at putting before the affected parties, and finally before decision makers, both more information and information structured in a more useful form to assist decision making. It should involve a searching examination of the subject or issue, and the examination should be complete and balanced and encompass all major effects which influence social welfare. It is also considered desirable that a social audit should possess an official or at least an independent status to reflect the fact that it is being undertaken on behalf of the community, and is not what may be seen as a biased appraisal by a self-interested party.

Two aspects of a social audit approach are examined in this paper. The first is the choice of evaluation methodology. It is stressed that social audit is not a new project evaluation methodology; it aims to use the well established social cost benefit analysis, and some of the modifications to it, so that the best methodology available can be applied to meet the particular objectives and circumstances of the problem at hand. The second aspect relates to procedures for undertaking social audits including the choice of areas of application, and institutional arrangements for conducting them.

SOCIAL AND POLITICAL ENVIRONMENT

The evaluation procedures used in the transport field, and the weightings and emphases given to different aspects of these procedures, should reflect the current goals and thinkings of a society. Also what is regarded as 'due process' in reaching decisions will change through time, and decisions which were left entirely to the bureaucratic or political process in the past may require detailed public analysis and participation in the decision making process today.

With this in mind, it is desirable to review briefly the particular features of the current environment which might be expected to influence the decision making process and the evaluation procedures required. Key features are :

The slower rate of economic growth, and hence the need for greater selectivity and more emphasis on the determination of priorities;

the pressures for smaller government. This is reflected in many ways - in the tighter market for public finance for transport and competing expenditures; in the increased demands for greater accountability of public transport enterprises, or in calls for their privatisation; and in moves to less government regulation of transport activities;

demands for greater emphasis on social and environmental aspects; and

greater demands for public participation in the decision making process; and also for the presentation of technical evaluations in a manner understandable to the public.

ALTERNATIVE APPROACHES TO EVALUATION

Given the above significant developments in the social and political environment, it does appear to be an appropriate time to re-examine our traditional evaluation methodology, and the extent to which formal evaluation procedures are being applied, to see if changes in approach or emphasis are justified at the present time.

The traditional analytical tool used in the evaluation of public transport projects or policies is social cost benefit analysis (SCBA). SCBA goes beyond the financial analysis employed by the individual firm, and at least in theory, should include all the significant benefits and costs of a project from a social point of view, and in so doing take account of externalities and the occurrence of prices which do not reflect resource costs. This form of analysis is frequently thought of as being in monetary terms only. This is not correct for SCBA should include all

relevant costs and benefits with impacts measured in monetary terms where feasible, and described in some other way where the monetary values are not applicable. However the policy maker is frequently looking for unambiguous advice as to whether a project is or is not economically justified by the fact that the benefit/cost ratio is greater or less than one. Accordingly there is pressure on the analyst to put as many effects as possible into monetary terms, and the effects that cannot be so included do tend to be pushed to one side and often given little weight in the final evaluation and recommendations. This has led to two conflicting criticisms of cost benefit analyses. One criticism is that some analysts have gone too far in putting monetary values on effects which are not priced in the market and that questionable monetary values allocated to these effects have given the final result a false impression of certainty and reliability. On the other hand, many studies are criticised for not taking adequate account of various non-monetary effects, particularly social and environmental impacts.

A number of alternative analytical procedures have been developed. These have been aimed in particular at overcoming the limitations of the social cost benefit analysis with respect to the treatment of non-monetary effects and of equity or distributional aspects. One approach is to present the social cost benefit analysis in the form of a planning balance sheet which shows both monetary and non-monetary effects presented in the form of a matrix to indicate the gains and losses to various affected groups within the community.

Three of the newer forms of analysis are known as multi-criteria analysis, cost effectiveness analysis and goals achievement analysis. Like the planning balance sheet approach they are designed to give more attention to distributional effects and the measurement of non-monetary effects. The distinguishing feature of these approaches is that they generally involve the explicit identification of goals or objectives, and a ranking of projects according to the extent of goals achievement. These approaches frequently involve the weighting of objectives so that a unique solution can be achieved; these weights may be predetermined, or in some cases complex iterative procedures are devised which force the policy maker to determine a consistent set of weightings. Another frequent characteristic of these approaches is that the contributions to goals of various non-monetary effects are given quantitative values by the application of ranking procedures.[1]

OVERSEAS EXPERIENCE

The formal application of evaluation procedures to transport investment decision-making has a long history in the United States, United Kingdom and a number of other European countries. Procedures are particularly well established for the assessment of trunk road and motorway projects.

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[1] Extensive reviews of these various evaluation procedures are available in the literature, for example in Lichfield, N., Kettle P., and Whitbread, M. (1975), European Conference of Ministers of Transport (ECMT) (1981), and Alexander, I. (1978).

United Kingdom

The development of these procedures with respect to trunk roads has been subject to extensive public inquiry and debate in the United Kingdom. A recent landmark was the public inquiry conducted by the Advisory Committee on Trunk Road Assessment, chaired by Sir George Leitch (ACTRA 1977). Prior to this inquiry British trunk road proposals had been subjected to traditional cost-benefit analysis. Considerable concern was expressed that the traditional approach placed such heavy weight on a single cost-benefit ratio or net present value, and this tended to give undue weight to the monetary effects included in the analysis and insufficient weight to non-monetary effects. It was felt that insufficient weight was being given to environmental and social issues generally, and the monetary values given to certain economic effects such as energy and employment were challenged.

ACTRA recommended the continuation of the traditional cost-benefit analysis but proposed that it be expanded by the use of a planning balance sheet presentation, and also some aspects of multi-criteria analysis. It also proposed a heavy reliance on formalised public participation procedures to supply information on socio-economic impacts, and to assist policy-makers in understanding and valuing community desires and aspirations. ACTRA formulated the following criteria for an adequate assessment procedure :

> it should be generally comprehensible to the public and command their respect;
>
> the public should be able to identify how different groups of individuals would be affected by the scheme;
>
> it should be comprehensive in terms of the different kinds of effects of the road scheme;
>
> it should allow effective control of decentralised minor decisions;
>
> it should not be expensive to use; and
>
> it should balance costs and benefits (however described) in a rational manner.

The Leitch Committee recognised the importance of identifying the distribution of costs and benefits, and the difficulties involved in identifying the incidence level at which to measure distributional effects. It concluded that the initial incidence level is the clearest and easiest to understand although it inevitably implies a narrow definition of group interest. Five initial incidence groups were identified :

> road users directly affected by the scheme;
>
> non-road users directly affected including occupiers of land and buildings adjacent to the route;
>
> those concerned with the intrinsic value of the area affected, for example its use for industrial or residential purposes;

those indirectly affected by a scheme whose concern is with its general land use effect, with resource consumption and with its impact on other modes of transport; and

the financing authorities.

ACTRA concluded that the existing methods of scheme appraisal were sound as far as they went but this consisted of basically assessing the impact on road users and the financing authority, and gave inadequate weight to the other three affected groups referred to above. To achieve a more balanced approach, a form of multi-criteria analysis was proposed together with a comprehensive balance sheet framework which embraces all the factors involved in scheme assessment.

A Standing Advisory Committee on Trunk Road Assessment (SACTRA) was established to subject the Leitch Committee (ACTRA) framework to experiment, and to recommend formal appraisal procedures. SACTRA (1979) found that the proposed framework constituted an effective format; it stressed the need for flexibility in the procedure and a process which provided comprehensive information to the public and decision makers but did not subject the whole process to a rigid mechanical set of operations. Consistent with this approach, SACTRA recommended against monetary valuation of environmental effects and against the inclusion of weights in the analysis. The recommended framework does not produce a ranking of options, or an aggregate net benefit figure. It was considered to be neither feasible nor desirable to aggregate the diverse effects on the different groups listed in the framework. The assessment or trade-off between the various impacts must always be a matter of judgement. Finally the recommended procedure includes arrangements for extensive public participation at several stages of the evaluation process.

Other European Countries

The evaluation procedures used in transport planning in European countries have been summarized by the European Conference of Ministers of Transport (ECMT 1981). The Conference reached agreement on the need for appropriate assessment methods for transport investment decisions which reflected the increasing social, environmental and energy effects of transport investments. They also recognised the need to apply uniform principles in the assessment of projects in the various branches of transport which were becoming increasingly inter-dependent.

The ECMT noted that the evaluation technique most commonly used in member countries was cost-benefit analysis; but that economic evaluation generally played a significant role in the decision making process only in the case of motorways and trunk roads. With respect to other modes, railways and inland waterways were generally assessed on a commercial basis using standard financial analysis, with the main concern being with deficits and

have been made to refer studies to the BTE, to ARRDO, to departmental advisers and to consultants. As a result, similar projects are not subjected to the same evaluation; many receive no evaluation, and those which are assessed are not evaluated on a consistent basis which would allow the establishment of standards of evaluation for comparative purposes.

Two exceptions to the observation about the general absence of legislative requirements are the provisions in the environmental impact statement legislation, and more recently in the Australian Bicentennial Road Development legislation. Under the 1974 Commonwealth environmental legislation, impact statements have been required for only 14 transport projects over the past nine years. The ABRD Trust Fund Act (Notes on Administration) requires the States in applying for funds under the Act to provide certain evaluation details but these are very broadly specified. For national highways, for example, planning reports are to cover 'objectives of the project and its expected benefits in terms of providing safer, more reliable and efficient carriage of road traffic. These expected benefits are to be quantified where practicable'

A major area of application of social audit type analysis in Australia has been that done with respect to roads by the Commonwealth Bureau of Roads and the BTE. Interestingly these evaluations have covered all categories of roads - highways, rural and urban arterials, and rural and urban local roads - while overseas evaluations have concentrated on trunk roads and motorways.

The Commonwealth Bureau of Roads first reported on the Australian road system in 1969. Its main recommendations were based on a traditional cost/benefit approach which endeavoured to measure all effects as far as possible in monetary terms. This endeavour extended in the case of rural roads for example to putting money values on production losses from dust and from road closures in wet weather, on social costs of interrupted access to schools and shops etc., and the benefits from generated trips in country areas. These indirect benefits accounted from around one-quarter of the total benefits from rural road improvements and gave rise to considerable questioning as to the wisdom of assigning monetary values to this extent to this category of benefits

The Commonwealth Bureau of Roads also devoted a great deal of attention to various social, environmental and distributional effects to which they did not assign money values (CBR 1973). These studies covered areas such as the impact on other modes, physical measures of disruption, accident reduction and fuel savings, environmental effects, and in particular the effects on communities of urban and rural roads and town bypasses.

The social impacts of roads on local communities is a subject which received considerable attention by the Commonwealth Bureau of Roads, and some related work is being undertaken by the BTE. In particular, the CBR stressed the need for a detailed study of neighbourhood boundaries, community interest and compensation requirements, and the characteristics of social groups affected by transport decisions. A particular aim was to identify

and increase the awareness of groups which had a marked incapacity for coping with sudden change. The BTE has recently published the results of a case study examining the interaction between community interest groups and the road system in the Gunning Shire of NSW (BTE 1983), and is undertaking a broader study of the social context within which Australian roads are provided and used.

Other major areas subject to evaluation studies in Australia include airports, mainline upgrading and electrification of railways, and urban public transport projects. With regard to airports, the Major Airport Needs of Sydney Study (MANS 1978) involved a very detailed analysis of environmental and social effects and included a major public involvement. Separate studies were carried out of economic effects, financial effects, environmental effects, incidence effects on industries and households, and general aviation effects; information papers on each aspect were prepared and made available for the public participation process. In the studies on mainline rail upgrading, the emphasis has been on financial profitability as social and environmental effects are generally viewed as not being significant. The provision of passenger rail services, and the community service obligations associated with these services, have in most cases not been subjected to formal evaluations.

Overall, Australia appears to have lacked a pervasive approach to transport evaluations. Most evaluations have been conducted in research establishments without public involvement and usually without legislative backing. Consequently there has not been the political support which has been apparent in many other countries, including several countries with similar difficulties arising from divided Federal/State powers concerning transport matters.

Transport Goals

The design of the social audit for application to transport issues clearly needs to take account of transport goals in Australia. The Commonwealth Minister for Transport has set down the following transport objectives (ALP 1983, pp4-5).

Economic objective -
to provide access to raw materials, goods and services; to provide passenger transport adequate for desirable national development and individual mobility at least cost to the community;

Environmental objective -
to minimise environmental and health damage by full inclusion of such costs in evaluation of projects and the introduction of adequate emission control and safety standards for motor vehicles;

Social objective -
to provide freight and passenger transport services that are adequate to enhance co-ordinated national development and balanced in terms of industrial diversity, urban, regional and rural development, employment generation, personal mobility and integration of forms of transport;

Resource objective -
to encourage the most efficient use of national resources, including energy, time and space;

Defence objective -
to provide a co-ordinated transport network capable of servicing current and anticipated strategic and defence needs, particularly in remote areas of the country.

The economic analyst has some difficulty with transport objectives defined in this manner. These objectives involve subjective judgements as to what are adequate transport services, balanced development and so on. The economist will argue that there are only two ultimate goals for social welfare - the first being economic efficiency which requires allocating resources in a manner which produces as much as possible of what society wants, and the second being equity or distributional goals which require the distribution of the community output in a socially acceptable form. The economic argument is that greater attainment of the environmental, resources and defence goals outlined above can be achieved only by competing for scarce resources and hence are in effect part of the economic efficiency objective.

In addition to the above objectives, several important operational objectives which refer specifically to transport are worthy of note. With respect to the economic efficiency objective, it is noted that this can best be promoted by encouraging competition within and between transport modes, and by pricing services at resource cost. With respect to distributional objectives, for example the provision of a minimum level of transport services to remote areas, urban commuters or disadvantaged community groups, it is argued that the costs of achieving these distributional objectives through the transport sector should be publicly identified and monitored, and in particular that all transport subsidies should be overt.

The social audit process should recognize that the politician and the analyst are likely to wish to identify transport goals in a different manner. The politician will often wish to make subjective assessments of the contribution of a project or policy to the large number of goals, such as those outlined in the ALP Policy Statement. The analyst on the other hand cannot do this because achievement of many of the goals cannot be measured in objective terms, and even if this could be done, achievement of these goals would not be additive and significant double-counting would occur.

The answer to this dilemma appears to lie in the clear separation in the presentation of the net efficiency effects and the distributional effects. The net costs and benefits (expressed in money terms where possible but in other terms where this is not possible) must be presented in a manner

so that they can be added to indicate the net value of the proposal. The distributional effects indicating who gains and who loses needs to be presented separately. Particular case is required in the presentation of distributional effects to distinguish between the distribution of the net gains and losses on the one hand, and the distribution of secondary (i.e. transmitted) effects and transfer (i.e. self cancelling) effects on the other hand.

Future Initiatives

How can the development and use of appropriate evaluation procedures be advanced? The Commonwealth Minister for Transport has set the ball rolling with his advocacy of the use of the social audit. In July 1983, he directed the BTE to undertake a detailed study into the use of social audit as an evaluation procedure and its application to Australian transport issues. This study is now well advanced, and this paper is based on it.

Following release of the BTE report, it is hoped that a widespread discussion of evaluation procedures for Australian transport will be generated in all relevant areas of evaluation and decision making. The Commonwealth Government can promote this dialogue through its consultative machinery, namely the Australian Transport Advisory Council, Marine and Ports Council of Australia and Transport Industries Advisory Council.

In addition to facilitating this dialogue, the Commonwealth could contribute to the development of applications of the social audit approach by applying it in its own evaluation studies. The main groups of analysts undertaking studies directly for the Commonwealth are BTE, ARRDO, the Department of Transport and various consultants. In the future the Inter-State Commission will become an important addition to this list and provide increased scope for public participation.

Other areas where the Commonwealth has a particular interest in the outcome of evaluations of transport proposals but does not have direct control of the evaluations, are those undertaken with respect to Section 96 Grants to the States for transport purposes, and the actions of Commonwealth Statutory Authorities producing transport services.

Looking at Statutory Authorities first, these have a charter to operate primarily on a commercial basis and achieve financial profitability, and as such they are not directly concerned with external aspects. However to the extent that Statutory Authorities (or other Government business undertakings) require subsidisation by the taxpayer (including indirect subsidies in the form of continuing operating deficits or subsidised capital grants), then there seems to be a strong case to undertake a social audit type evaluation. This could examine the objective of the subsidy, and the associated price structure and services provided, in order to establish the full social costs and benefits and the parties affected by the subsidy. This approach would also seem appropriate for identifying and making explicit the presence of community service obligations in the transport field.

Turning to Section 96 Grants, this is of course by far the largest avenue of Commonwealth investment in transport with the bulk of assistance going to roads and airports. While many major projects financed through Section 96 Grants have been subject to Commonwealth commissioned evaluations by the BTE and other agencies, the bulk of the project evaluation work is done by the States seeking grants

In the United States and the United Kingdom, the allocation of trunk road funds by the central Government is dependent on the applicant State or road authority providing a stringently detailed evaluation analysis. This raises the question of whether a similar condition should be applied to road grants in Australia.

The answer to this question is well beyond the scope of this paper. It is useful to note however some of the apparent pros and cons which apply to this proposal. There will be a natural reluctance on the part of road authorities to undertake these studies, and if forced upon them, a tendency to short-cut the evaluation procedure; for such authorities are concerned with building roads rather than assessing the impact on affected communities. The emphasis on public participation may well be seen as a shift of power from public agencies to citizens. There is also a risk that without clear legislative standing, the results fo these studies may be largely ignored by decision makers. Hence, to upgrade the quality and coverage of social audit type evaluations, to involve greater public participation, and to ensure that decision makers heed the results, some form of mandatory requirement would be desirable.

On the other hand, specifying the appropriate size and form of an evaluation procedure is extremely difficult. Ideally, each study should be tailored to the proposal but this would require its unique specification. This clearly cannot be done in legislation or regulation Attempts to specify the necessary requirements in an embracive manner tend to result in many aspects of a proposal being subjected to extensive evaluation although it is unlikely that these aspects will bear any impact on the final decisions.

In the United States where failure to meet the evaluation requirements fully may lead to litigation, there does appear to be evidence of excessive evaluation. Such excesses are costly in terms of evaluation costs, witness costs and delays in decision making. Finally there is the danger that mandatory evaluations may be manipulated by the applicant State or authority to support a preferred option, and not provide an objective input to the decision making process.

SOME METHODOLOGICAL ISSUES

Earlier in this paper, some alternative approaches to evaluation methodology were briefly discussed. Having examined the objectives and other requirements applying to transport evaluation in Australia, it is now appropriate to comment on the choice between the alternative methodologies. Brief comment is also provided on a number of issues which the analyst must face in determining the form of the analysis and the presentation of results.

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The authors' review of the literature has led us to the conclusion that the debate on the relative merits of the different evaluation approaches (namely social cost/benefit analysis, with or without planning balance sheet, multi-criteria analysis, cost-effectiveness analysis and goals achievement analysis) is marred by the absence of clear definitions of the alternatives and is not very helpful in a practical sense. In practice each evaluation technique is subject to considerable variation and there is significant overlap and complementarity between techniques. The traditional cost/benefit analysis has been frequently criticised because of the limitations of particular applications, in particular the inadequate treatment of non-monetary effects and distributional effects. These criticisms relate primarily to the measurement and presentation of various impacts, and not to the basic concept of the social cost/benefit analysis which does incorproate these effects.

The application of techniques such as goals achievement analysis and cost-effectiveness analysis, which require explicit definition of goals and the measurement of various contributions to them, do not appear particularly suited to application to national transport issues in Australia. This is because the Government's transport goals contain significant subjective elements with respect, for example, to 'adequate mobility' and 'balanced development' which are not amenable to inclusion in a quantitative assessment procedure. Nevertheless it is clearly desirable for the evaluation to record the full range of effects and how they relate to stated Government goals. The full range of effects may best be recorded by the use of social cost/benefit analysis supported by planning balance sheets. This is a very flexible approach which allows the aggregation of effects wherever possible, but at the same time provides scope for describing non-monetary effects and distributional effects in a convenient manner. The United Kingdom evaluation methodology for trunk roads is a good example of this approach, and as noted earlier the British have specifically rejected proposals to employ weights or add non-monetary effects in this area.

Our review of overseas experience strongly suggests that the assembly of accurate and comprehensive information, and its analysis based on consultation, are more important than the choice of technique. The analysis will involve important decisions being made on the following issues :

which impacts to include;

how to present these impacts so as to provide the most easily assimilated, informative and manageable basis for decision making;

how distributional effects should be represented;

whether monetary measures, where possible, are the most meaningful ways of representing information;

whether the analyst should be concerned with weighting of alternatives; and

how adequate public participation might be achieved.

To expand on some of these issues briefly.

Relevant Effects

Check lists of the impacts of transport decisions are available from a number of comprehensive overseas surveys aimed at establishing the environmental and social consequences of transport decisions.[1] A major aim of these check lists of impacts is to ensure that the analysis is not biased towards the obvious impacts on the supplier and user of the transport service in question, and gives appropriate weight to impacts on users of other modes, non-users (both those located near the transport route and also those concerned with more general aspects of land use and preservation of the environment), employees and suppliers affected by the level of activity in the transport service. While compliers of major check lists of impacts have stressed that no technical guidance document can adequately anticipate the nearly infinite variety of localised problems which may stem from major projects, they clearly can help if used sensibly to achieve a more comprehensive approach.

Doubtful Monetary Values

As public participation in the evaluation process has expanded there have been increasing demands for simple explanations of techniques and of the derivation of the monetary values allocated to the various effects. This has led to considerable debate about how certain effects such as travel time and accident costs should be valued. Some analysts have excluded monetary valuations of these items and replaced them with physical measures (i.e. minutes of travel time or lives saved from a road improvement).

There is no clear cut answer to this issue. The inclusion of monetary values enables the aggregation of costs and benefits and thus helps to arrive at a single cost/benefit result which can be easily interpreted, but this may disguise a number of doubtful values. However sensitivity testing can be used to alert the decision maker to these doubtful monetary values wherever boundaries to these values can be assessed with some certainty. The alternative approach is to include in the analysis both monetary and physical measures and possibly other descriptive material. The danger with this approach is that the inclusion of both monetary and physical measures will lead to a sense to double-counting, and to undue emphasis being assigned to the effect in question. Again the careful presentation of the results can minimise the risk of double-counting.

Resource Costs

In support of various transport investment projects, it is frequently stated that the project will generate so much employment directly and indirectly, and/or that it will save energy compared with existing or alternative options. Particular care is needed in the

1. For example: United States Department of Transportation, 'Environmental Assessment Notebook Series, 'Vols 1-7, and United Kingdom Department of the Environment Research Report 8 'The Environmental Evaluation of Transport Plans, 'A. Lassierre.

treatment of labour and energy inputs in the evaluation. If the market prices for these factors reflect their true resource (or opportunity) costs, there is no reason why they should be treated differently from any other inputs. However if it can be demonstrated that all or part of the labour employed would be otherwise unemployed, it is appropriate to enter the cost of this labour in the analysis at less than its full market value. Similarly if energy market prices are being kept artificially low in the face of shortages, it would be appropriate to value energy at a higher level in the analysis. In practice however it is very difficult to derive acceptable estimates for these true resource costs. The fact that unemployment and energy crises will probably come and go over the project period adds to the problem of quantification.

Most studies in developed countries value these inputs at market prices, except in cases where marked divergences between market prices and resource costs are apparent. This may introduce some bias in the analysis, but equally care is needed that references to employment creation and energy savings are not given undue weight so that these factors are implicitly double-counted in the evaluation.

Distributional Effects

This is probably the most difficult area for the analyst, and no doubt this is one reason why it is frequently ignored. A fundamental difficulty is the identification of distributional goals. As noted earlier, transport decision makers in Australia clearly do take account of distributional goals such as providing transport services to remote areas and to certain social groups with poor mobility, but these goals are nearly always implicit in broader transport strategies.

However although there are no explicit distributional goals available, the decision maker will still wish to know which parties will gain and which will lose and by how much. He can then make his own judgement whether the planned distribution is better or worse than the base case, and whether some specific compensation for the losers or taxation of the gainers is warranted. The planning balance sheet is a useful tool for setting out these distributional effects.

A difficult practical problem is the choice of the level of incidence at which to measure distributional effects. The initial distribution of costs and benefits often differs markedly from the final impact due to the passing on of costs and benefits to other parties. For example, road improvements initially assist truck operators through travel time and operating cost savings, but these benefits may be passed on to the freight forwarder and shipper. In determining the net effects on efficiency, it is usual to examine the distribution of gains and losses at the initial incidence level to avoid the double-counting problem. However secondary effects may be of key importance in some evaluations. For example the provision of navigational aids which reduce export shipping costs will provide initial benefits to foreign ship-owners; however the main second round effects may be benefits to Australian exporters through more competitive pricing of their products. These secondary incidence effects would appear to be better treated in a separate distributional table, in parallel with that portraying direct effects.

CONCLUDING COMMENT

In the context of an ATRF meeting, amongst many practitioners and users of transport evaluations, there probably is widespread agreement that scope exists for upgrading and expanding evaluation work with respect to Australian transport. It is hoped that the development of the social audit process can make a contribution.

Social audit is not a new technique but an evaluation process which will need to be developed and refined over time. The development of the process in the context of Australian transport objectives should encourage a wider and more consistent use of evaluation procedures in this area

This paper has suggested a number of options for the development and application of the social audit to Australian transport issues. It is hoped that the current BTE study will help to generate widespread debate and consultation on appropriate evaluation procedures in transport, and that a wider and more consistent use of social audit evaluations will evolve. However it is noted that the United States and United Kingdom both impose mandatory evaluation requirements as a condition for trunk road funding, to ensure that the main economic, social and environmental impacts are assessed in a balanced way.

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