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Overview

Social Cost Benefit Analysis (SCBA) is a method that can be used to evaluate the economy-wide effects of a policy or project and is often used to conduct *ex ante* evaluations of public policies and projects. It has several desirable features, including its strong microeconomic foundations and the ability to apply it on a fairly consistent basis to a range of areas. Nevertheless, data requirements are demanding and potentially costly. Inevitably the application of SCBA will require trade-offs to be made between what is theoretically ideal and what is possible in practice. These trade-offs tend to become more significant and controversial as the complexity and importance of a policy or project increases.

What is SCBA?

A social cost benefit analysis (SCBA) focuses on the costs and benefits of public projects or policies on the broader community. These costs and benefits include the costs and benefits that can be measured by cash flows, as well as costs and benefits that are not readily measured or quantified, such as changes in the environment, health and safety and externalities (an externality is a cost/benefit incurred/enjoyed by a person who did not pay for the cost/benefit).

The decision rule in SCBA is that a project or policy will be acceptable if the total social benefits are greater than total social costs – that is, if the project generates positive *net social benefits*. If SCBA is used to select from a number of options, the option with the greatest (positive) net social benefit would be the preferred policy approach.

SCBA versus a private cost-benefit analysis

SCBA differs from the analysis often used by the private sector to evaluate projects where the focus is on *private* costs and benefits associated with a particular project. These private costs and benefits are found by measuring the cash flows associated with the project. The decision rule in this type of analysis is that a project will be acceptable if the net present value (NPV) of the cash flows is positive. This type of cost benefit analysis may form

part of a business case seeking to justify a project, or it may be used as a tool to choose between competing projects.

A project may fail a private cost benefit analysis, but pass a SCBA if the project generates large social benefits that offset the negative NPV of cash flows (as is often the case for public projects). Alternatively, a project may pass a private cost benefit test but fail a SCBA if it generates significant externalities (such as pollution) that impose a large social cost. In this case, net social benefits would be negative. The NPV of cash flows may be positive for a proposed new coal-fired electricity transmission plant. Thus the project would be acceptable on private cost benefit grounds. However, a SCBA would also take into account the environmental costs and benefits of the project, which may mean that net social benefits are negative and the project should not proceed.

Conduct of a SCBA

Any SCBA requires the completion of a number of steps. These steps vary in their complexity and with the complexity of the project being evaluated. The application of a SCBA can be difficult and can depend on the approach taken, and assumptions made, during the various stages. Here are some key issues:

Specification of the counterfactual

Taking a given income distribution, an SCBA measures the net social benefits *with* the policy/project compared with the net social benefits *without* the policy/project. This might seem straight forward- for example a comparison of an economy with the NBN and without the NBN. However what is the credible counterfactual?

The 'without the NBN' scenario does not mean that all other changes come to a halt and the existing communication structure continues on exactly as it currently stands. So a fundamental question is - how should the 'without the NBN' scenario, that is the base case, be defined?

Returning to the example of the coal-fired gas plant, there may be differences of opinion, for example, about the level of future demand for electricity without the project. Without the project would consumers opt to move to alternative forms of energy? Differences in assumptions in the counterfactual or

base case about key factors will affect the valuation of social costs and benefits and thus the overall estimate of net social benefit.

Measurement and valuation of intangibles

If a project is expected to cause intangible costs and benefits, it will be necessary to measure and value these intangibles in both the with and without project scenarios. Intangibles are generally not traded in a market and thus a market price is not available as a reliable measure of value. There are a range of methods that can be used to estimate the so-called 'shadow price' of an impact for which a market price is unavailable. However, each method requires subjective assumptions and judgements that may inadvertently bias the findings of the SCBA.

Moving from individual costs and benefits to net social benefits

The dollar values of the cost and benefits from a policy provide an indication of its welfare effects. A measure of the impact of a proposal on society as a whole can be made by summing the individual valuations. This simple addition of costs and benefits assumes that a dollar gain to one individual cancels out a dollar loss to another. This 'dollar is a dollar' assumption means that in SCBA evaluation, efficiency effects are separated from equity (or distributional or fairness) effects and are estimated on the basis of the prevailing distribution of income. So for example, a one dollar gain to city dwellers is assumed to cancel out a one dollar loss to rural dwellers and vice versa. Similarly a one dollar loss to a low-income earner is assumed to be cancelled by a one dollar gain to a high income earner. Sometimes, these types of outcomes will not be politically or socially desirable and may need to be addressed through taxes and transfer payments.

Availability of data

Even if there is general agreement about how to define and measure the 'with and without' project scenarios, including the measurement and valuation of intangible social costs and benefits, it may still be difficult to obtain suitable data with which to estimate social costs and benefits. If data are inadequate assumptions or the use of proxies may be needed

to 'fill-in' the data gaps. These assumptions and proxies may affect the findings of a SCBA.

Choosing a discount rate

SCBA requires the comparison of social costs and benefits that occur at different times and thus it is necessary to estimate the present value of these costs and values. This means that a suitable discount rate must be chosen. As there are potentially a number of such discount rates, the choice is likely to be controversial and may affect the findings of a SCBA.

Conclusions

SCBA is a conceptually simple, theoretically sound technique that can be used to evaluate public projects. However, it can be difficult and costly to apply in practice. This is because adequate data is seldom available with which to value social costs and benefits. Furthermore, it will inevitably be necessary to make choices and assumptions which may affect the findings of a SCBA.

Given the likely disagreement and controversies about how to conduct the various steps of a SCBA, it is very important that a SCBA is tested to ensure that its results are not overly sensitive to the key assumptions and choices made. If the magnitude or sign of net social benefits changes significantly when different assumptions or discount rates are used, then the findings of a SCBA will be treated with scepticism.