

7 Cost-benefit analyses: purposes and principles



Cost-benefit analyses are investment decision tools, which set out to resolve whether certain investment projects should be undertaken, and, if resources are limited, the relative ranking of these investments. The aim of a cost-benefit analysis of an early childhood intervention is to assess its social benefits relative to its social costs with a view to replicating the program, in either a similar or in a broader context, and achieving similar outcomes.

Social returns include the benefits to the program recipient and his or her family as well as returns to society more broadly. Social costs include the benefits foregone from not using the resources for some other use.

Most cost-benefit analyses count the loss or gain of satisfaction to the members of society, that is, the welfare and happiness of each and every citizen. Institutions such as the criminal justice system are not human entities and do not enter into the calculation. However, the welfare of the people who work in the justice system and the criminals and victims are counted. A reduction in crime may therefore have an ambiguous impact on society if the losses incurred by the police and criminal lawyers etc. who subsequently lose employment is valued more than the gains for the victims of crime plus the gains from transferring the government money saved to alternative uses. This is an extreme example, but serves to illustrate the point that to avoid double counting, the impacts on final householders (as consumers and workers) are considered only, and not intermediary institutions such as the government or a business.

In some cases, governments are interested in the losses and gains to government budgets from operating a project. In this case, the analysis is much simpler as non-pecuniary costs and benefits (costs and benefits that are not monetary) do not need to be monetised. It is a more straight-forward accounting exercise. In the case of a federal early childhood intervention, only commonwealth payments, such as commonwealth education subsidies, federal court expenditures, social security payments, and income taxes, need be counted. This is not a real cost-benefit analysis, but rather an accounting exercise and this type of metric is excluded from the current discussion.

The underlying premise of cost-benefit decision-making techniques is that all investments entail costs, and that all such costs are benefits foregone by another party. Accordingly, the costs of implementing an early childhood intervention will be the benefits foregone by not using these funds in an alternative way, which, for example, may be extending aged care or improving public safety.

In the case of early childhood interventions, unless the type of people who are required to run the program (social workers, child psychologists, teachers) are unemployed, then running a program will be at the expense of running other types of activities. The essence of a cost-benefit analysis is to recognise this trade-off. Unless there are idle resources – workers as well as equipment and materials – other parts of the welfare economy will be affected. Properly performed, the cost side of the cost-benefit calculation should capture the benefits foregone from not using the workers, equipment and materials in an alternative use. It is misleading to imply that the value of one program can be assessed in isolation from another. If there are no benefits foregone, then there are no costs.

In principle, cost-benefit analyses are concerned with the benefits and benefits foregone (that is, costs) to the whole of society, not just those affecting the directly implicated parties. These analyses take care to consider the hidden, implicit and indirect benefits on secondary parties and also try to include estimates of costs and benefits into the future.

Fundamental to this method is the assumption that benefits from a diverse range of activities, affecting different members of society, can be quantified and compared. In almost every case, this

means monetisation. Most cost-benefit analyses rely on the assumption that the goods and services involved in the investment process are traded and valued in monetary terms “correctly” through the market (that is, the average price consumers are willing to pay varies directly, and in proportion, with their assessment of the benefits from consuming it). Householders will only pay more for costly goods and services if they value them more highly than cheaper goods. Hence, the price of a colour television set is higher than a black and white set since consumers’ valuation of the former is higher than the latter. In addition, in order for the good to appear on the market, its valuation by consumers must be at least as high as the average costs of production.⁷ In this way, price may be a reasonable way to quantify *relative* benefits of goods and services.

This assumption is clearly not strictly valid in many cases, especially those relating to welfare investment projects. In particular, the market price of a good or service may not be a reasonable guide to the societal value of that good or service when:

- There are significant parties, other than the purchaser and supplier of the good or service, who benefit or are disadvantaged by its consumption or production (these effects are called spillovers or externalities). For example, a vaccination program may not only benefit the recipient of the vaccination, but also people who would otherwise be exposed to a disease outbreak. A reduction in the crime rate may primarily benefit potential victims rather than the would-be criminal. Because these “other” parties have no say in the market transaction of the product, there is no market record of their valuation of the activity.
- The good or service is not traditionally traded in the market. A classic example is the consumption of services such as libraries, parks and gardens, crime prevention and social cohesion. While these products can be traded for a price,⁸ traditionally they are not commercially traded in Australia.
- The good or service cannot be traded in the market because it is not possible to exclude consumers and thus demand a price. Free-to-air broadcast television is not excludable and we cannot assess how much householders value the service. In addition, the good or service may represent an innovation, and since it does not currently exist, it cannot be objectively valued.
- The good or service is primarily purchased by low-income households. The market valuation of benefits can be weighted towards the preferences of high-income households, if the price is demand sensitive.⁹ In other words, the preferences of high income households has greater weight in determining the market price of a product than low income households. Furthermore, products that are only valued by low income consumers may not be produced at all if their willingness-to-pay does not exceed the average cost of production. These are not issues for cost-benefit analysis if the purchasing patterns, or consumption preferences, of householders with respect to the good or service in question does not vary by income (that is, it may be related to the presence of children or location). However, it will matter if preferences vary by income and either prices are demand sensitive or costs of production are prohibitive.

Where these limitations constitute a significant part of the benefits, and benefits foregone, of the potential investment projects, some attempt is usually made to account for them in a way to derive acceptable quantitative estimates. Techniques for dealing with spillovers and non-market transactions are reviewed in Section 10.

Finally, while the valuation of the separate elements of the cost-benefit formulae is not always straightforward, the manner in which they are combined to produce a single investment decision index is also not always clear-cut and objective. In particular, the way in which costs and benefits are weighted between individuals and over time across generations is a considerable source of controversy in the literature.

7 Strictly, the market price reflects the valuation “at the margin”, or the value to consumers of the last unit of the good consumed. It does not give the total valuation from consuming all units of the good - hence the paradox of water and diamonds. While the value of an extra diamond is higher than the value of an extra litre of water, the sum of the value of all diamonds in the world is considerably less than the sum of the value of all water.

8 The private provision of private estates and compounds in some societies may be regarded as an example of the market provision of reduced crime and social cohesion.

9 That is, when the producer charges a price above the costs of production because he or she has some level of market power.