Ministry for Regulation
Te Manatū Waeture

Cost-benefit analysis

A Resource

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Introduction

The specific focus of this document is on cost-benefit analysis (CBA). CBA is an analytical technique that identifies the costs and benefits of a regulatory change, measures them in dollars where possible, and determines the net benefit (benefits minus costs). This document provides some preliminary background to what CBA is (and is not) and its proportionate use. It then explains the key steps to undertaking CBA, which are illustrated in Figure 1.

This document will provide support in:

- Early policy development;
- When preparing a Regulatory Analysis Summary; and.
- When preparing a Consistency Accountability Statement.

This note is not intended to be a comprehensive guide to CBA; rather, it is a high-level resource that provides background and a general overview to the approach. Practitioners should also consider drawing on more detailed guidance, such as that by the New Zealand Treasury,[1] overseas agencies,[2] or academics.[3]

Link with the good-law making requirements

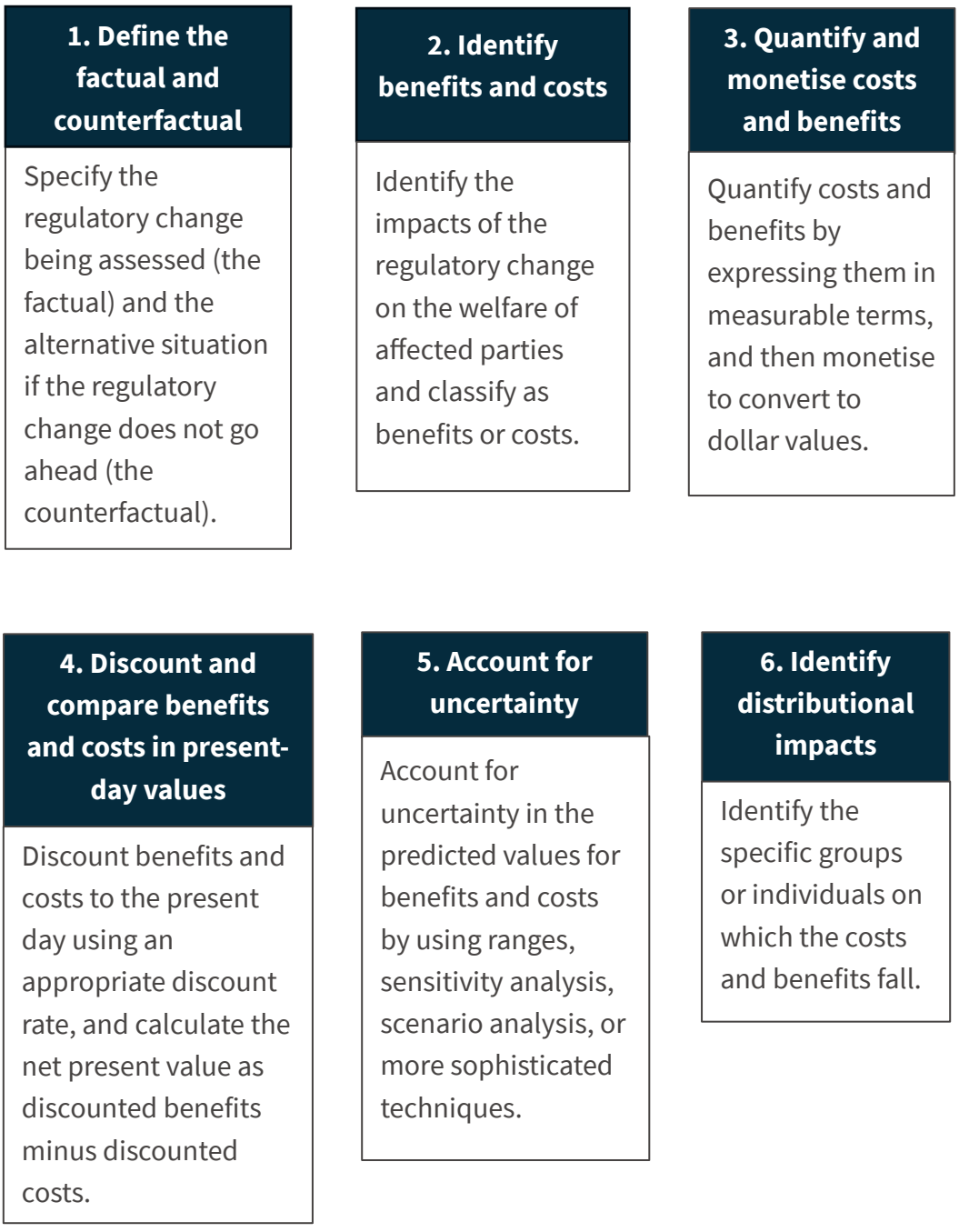
This document is intended to provide additional support to agencies to the Guidance issued under section 26 of the Regulatory Standards Act 2025 and Regulatory Analysis Summary guidance issued by the Ministry for Regulation.

The related provisions of the Regulatory Standards Act are 9(j)(v): "the importance of carefully evaluating…who is likely to benefit, and who is likely to suffer a detriment, from the legislation" and 9(l): "legislation should be expected to produce benefits that exceed the costs of the legislation to the public or persons".

This document will also be useful to inform your approach to CBA that will eventually be summarised in a Regulatory Analysis Summary (as required by **Cabinet circular CO (26) 2)**.

[1] New Zealand Treasury "Guide to Social Cost Benefit Analysis", July 2015, **Guide to Social Cost Benefit Analysis - July 2015** and "CBAx Tool User Guidance", November 2025, **CBAx Tool User Guidance - Guide for departments and agencies using Treasury's CBAx tool for cost benefit analysis - November 2025**.
[2] For example, the UK's government's guidance is provided in the HM Treasury *Green Book*, **The Green Book - GOV.UK**.
[3] A useful textbook resource is Anthony E. Boardman, David H. Greenberg, Aidan R. Vining, and David L. Weimer (2018), *Cost-Benefit Analysis: Concepts and Practice*, Fifth edition, Cambridge University Press.

Figure 1: Step-by-step guide to conducting cost-benefit analysis



What cost-benefit analysis is (and is not)

CBA is an analytical technique used to identify and measure (in dollars) the costs and benefits of a regulatory change, and calculate the net benefit (benefits minus costs, which may be a net cost if costs exceed benefits).

The net benefit of a regulatory change is the increase it gives to the aggregate welfare of society; that is, how much it makes society better off. It consists of more than just direct financial impacts and impacts related to goods and services traded in markets; the net benefit incorporates *all* things that affect people's welfare. This includes impacts on the environment (e.g., air and water quality, noise levels, biodiversity), impacts on people's time (e.g., travel time or leisure time), and social impacts (e.g., crime or mortality risks). For example, a regulatory change that negatively impacts health and safety will include these impacts as a cost. A regulatory change that reduces the time spent on compliance will include these time savings as a benefit.

CBA must account for both costs and benefits. For example, a CBA would not focus only on compliance costs, while ignoring benefits. Although expressing some impacts in dollar terms may be challenging, difficult-to-quantify impacts should not be ignored. Even if costs and benefits cannot be converted into dollar terms within the time available or due to data constraints, they should still be disclosed. Care should also be taken to avoid an overly optimistic focus on impacts that are easy to quantify, with less weight placed on more difficult-to-quantify impacts.

The value of CBA is not only in showing whether a regulatory change improves the lives of New Zealanders on average (which is a primary goal of regulation), but also in increasing rigour and objectivity by introducing analytical discipline and structure to decision-making. CBA makes clear the trade-offs and their underlying assumptions, and helps identify the assumptions that matter most, focusing the debate and facilitating independent testing of assumptions. By allowing impacts to be expressed in dollar terms, CBA provides a way of assessing and balancing these impacts using a common metric.

Importantly, CBA is not a substitute for other forms of analysis, such as stakeholder engagement, literature reviews, agency consultation, and expert judgement. The net benefit should not be seen as the sole determinant of whether a regulatory change is appropriate; rather, it is complementary to the broader suite of inputs and analysis that collectively support robust, evidence-based decision-making.

The proportionate use of cost-benefit analysis

CBA can be used by agencies to support them in preparing Regulatory Analysis Summaries and meeting their requirements under the Regulatory Standards Act. However, the type of CBA conducted will depend on various factors. There are circumstances where a rough, high-level CBA is appropriate and other situations where a detailed, precise CBA is preferable. The following factors can help determine the proportionate CBA approach to apply to a regulatory change:

- Scale: the scale of the regulatory change (e.g., smaller scale changes that focus more on reducing duplication or improving processes versus more significant regulatory changes that induce structural or behavioural change and are likely to involve costs or benefits that are large in dollar terms);
- Data availability: the availability of data to put a dollar value on ('monetise') costs and benefits; and
- Nature of costs and benefits: whether the nature of the costs and benefits allows for relatively straightforward monetisation (e.g., environmental, social, cultural, and similar non-market impacts for which assigning dollar values can be more difficult, or compliance costs, administrative costs, or financial impacts for which there are often readily assignable dollar values).

At a minimum, CBA should identify benefits and costs in qualitative terms. At one extreme (e.g., when the scale of the change is small, data are limited, and monetisation is difficult), monetisation may not be appropriate, and it may be sufficient to list and describe costs and benefits in a table. At the other end of the spectrum, a more detailed CBA may be warranted, where most or all of the impacts are evaluated in dollar terms. Between these two extremes lies a range of intermediate approaches, for example, where dollar values are assigned only to those impacts that are easily monetised or for which public data exist.

Ideally, CBA should be undertaken relatively early in the policy process, although only after options for regulatory change have been identified and appropriately scoped. This allows CBA to be used to assess the different options and improves the chance the option that offers the greatest net benefits will be chosen. Leaving CBA to the end once a preferred option has been chosen robs it of some of its potential to improve decision-making. A proportionate approach can also be considered here; for example, a higher-level CBA for the different options, proceeding to a more detailed CBA once the preferred option has been selected.

Link with the good law-making requirements

Where you are required to prepare a Regulatory Analysis Summary for your proposal, you will need to summarise the results of your CBA in the Regulatory Analysis Summary for the option the Minister is taking to Cabinet for approval. If your agency's preferred option differs from the Minister's preferred option, you will need to summarise the results of your CBA for your preferred option too. The Regulatory Analysis Summary template also includes a space for specifying distributional impacts.

Key steps of cost-benefit analysis

The following key steps of CBA outline the general approach and articulate how to undertake a basic level of analysis. They are not a comprehensive guide to undertaking a CBA, which would necessarily be highly detailed, due to CBA often involving technical and bespoke considerations.[4]

Step 1: Define the factual and counterfactual

The first step in any CBA is to identify two alternative 'states of the world', the factual and the counterfactual. The factual scenario is the situation if the regulatory change being assessed went ahead, and the counterfactual is the situation without the regulatory change. The status quo, or current situation, is sometimes the appropriate counterfactual. However, if the current situation is expected to evolve without regulatory change, the appropriate counterfactual will be this evolved situation. For example, legislation may be proposed to address a problem of consumers not having adequate information on a particular product (the factual). However, there may be good evidence that private sector businesses are developing their own solution to this problem. The appropriate counterfactual is therefore the private solution to the problem (rather than a counterfactual of the status quo, where the problem exists without a solution).

In any CBA, it is important to understand the factual and counterfactual, because the costs and benefits of the regulatory change in the factual are assessed *relative to* the counterfactual. That is, costs and benefits are only those that are additional to what would otherwise occur in the counterfactual.

Step 2: Identifying costs and benefits

Costs and benefits are defined in terms of concrete impacts on the welfare of affected parties, including impacts on resource use (additional resources required or avoided), environmental outcomes, time savings, health, crime, etc. Impacts can fall on a wide range of groups, including the general public, businesses, consumers, taxpayers, government agencies, and communities.

CBA is typically undertaken at a 'national' level, where the costs and benefits counted are those that fall on New Zealanders. This would not include benefits and costs that accrue to parties outside New Zealand e.g., profits paid out to foreign shareholders, benefits to overseas tourists, benefits to overseas consumers. It would also exclude benefits to one group of New Zealanders (e.g., within one region) that are directly matched by costs to another group of New Zealanders.

[4] For more comprehensive guidance, see the resources referred to earlier in this note.

These are considered transfers, discussed below; they have distributional impacts, but do not affect the net benefits of the regulatory change.

A useful approach to identifying the benefits of new regulation is to start from the market failure the regulation intends to address. For example, if a regulation intends to address market power, then the benefits might be increased welfare from an increase in quantities traded due to improved competition. If the relevant market failure is an environmental externality, then the benefit might be improved environmental outcomes.

If the proposed regulatory change is different or less regulation, consider whether the change will mean the market failure is addressed more effectively (generating benefits) or less effectively (generating costs).

The costs of new regulation include compliance, administrative, and distortionary costs. Compliance costs are the costs affected parties face to comply with the regulation, and include not only direct financial costs but also the costs of time spent on compliance. Administrative costs are the costs of administering a regulatory regime, usually borne by the regulator. This includes the costs of establishing a new regulatory regime, such as costs of policy analysis and drafting legislation. Distortionary costs are the indirect costs imposed by regulation through distorting behaviour and market outcomes. This includes when regulation: creates barriers to entry and expansion or more broadly undermines competition; distorts price signals in markets; dampens incentives for innovation; or hinders the emergence of new markets.

When evaluating a change in regulation, consider whether the change will increase or decrease each of these types of cost relative to the counterfactual. Increased costs of regulation should be counted as costs and decreased costs as benefits.

In identifying benefits and costs, caution should be exercised in identifying transfer payments. A transfer payment is a payment between two parties that does not directly involve any change in resource use. The benefit to the recipient directly offsets the cost to the payer. The main types of transfer payment are taxes, subsidies, welfare payments, and local authority rates. These payments simply shift money between parties, with no direct change in the production or consumption of resources (such as labour, land, or capital). Transfer payments should not be included in the net benefit calculation as either costs or benefits. However, they should be considered when evaluating distributional effects, discussed later.

Every cost and benefit should be included only once, and care should be taken to avoid double counting. An example of double counting is where the money a government department receives (e.g., via a fee or levy) is included as a benefit, and what the money is spent on is included as another benefit. The benefit arises because of what the money is spent on, and it can be measured by the amount received, but it is double counting to include both. Another example is where both the upfront capital expenditure of an investment and annual depreciation are included as costs. Depreciation is an accounting charge that spreads the capital cost over the life of the investment, so should be excluded to avoid double counting.

Step 3: Quantify and monetise costs and benefits

Quantifying costs and benefits involves expressing them in measurable terms, such as hours of travel time saved, number of lives saved, or tonnes of carbon emissions avoided. Monetisation then converts these quantified impacts into dollar values, using appropriate values such as wage rates, willingness-to-pay measures, costs per unit, or the statistical value of a life. These values can be obtained from various sources. The Treasury's CBAx spreadsheet model includes values for a wide range of impacts, such as for health and safety, environmental attributes, and leisure activities.[5] Other sources are the economics literature or calculations by other agencies.[6]

The use of dollar values provides a consistent 'measuring rod' with which to compare costs and benefits. Monetisation relates not only to costs/benefits that are naturally denominated in dollars, but also to other impacts such as environmental and health impacts. Economics has developed robust methodologies to assigning dollar values to such impacts.

If impacts cannot be monetised, they can often still be measured in some way. Regardless, they should be identified and disclosed to aid transparency. If monetisation is only possible for one side of the ledger (say, for costs), 'breakeven analysis' can be used. This involves using the monetised costs to determine how high the non-monetised benefits would need to be to exceed the costs, and making an informed judgement on how plausible those benefits are.

Step 4: Discount and compare benefits and costs in present-day values

Costs and benefits often occur in different years, but it is not appropriate to treat dollar values in different time periods as having the same weighting. This is because of the 'time value of money': one dollar today is worth more than a dollar tomorrow, because one dollar today can be invested or consumed to provide greater value tomorrow. Discounting is used to compare impacts in different time periods, which converts an impact into a present-day value using an appropriate discount rate.[7] The Treasury provides guidance on the appropriate public sector discount rates for agencies to use.[8]

Having discounted all values to a present value, the overall net benefit can be calculated as the 'net present value' (NPV). The NPV is the sum of the discounted benefits minus the sum of the discounted costs.

Consideration should also be given to the time horizon over which future benefits and costs are analysed. This should balance the need to have a sufficient period to cover when benefits and

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[5] **CBAx Spreadsheet Model | The Treasury New Zealand**

[6] For example, the New Zealand Transport Agency undertakes CBA that includes values for various transport-related impacts, such as time travel savings, noise, and injury and death. See **Monetised benefits and costs manual v1.7.2 November 2024**

[7] The formula used to convert a dollar impact I incurred in a future time period t into a present-day value is $PV = \frac{I}{(1+r)^t}$, where r is the discount rate.

[8] See **Discount Rates | The Treasury New Zealand**

costs occur, against future impacts having a relatively smaller effect on the NPV and increased uncertainty in their estimation. The choice of time period can also have implications for the choice of discount rate, which is reflected in the Treasury discount rate guidance.

Step 5: Account for uncertainty

Benefits and costs used in CBA are always predicted future values, based on assumptions as to the expected impact of a regulatory change. There will therefore always be some uncertainty over the benefits and costs.

There are various ways to account for this uncertainty. One way is to use ranges for specific unknown values. For example, a regulatory change may be expected to result in time savings for compliance, and while a precise value for these savings is unknown, a reasonable range may be 10 to 20 hours per year. Another approach is to conduct sensitivity testing. This involves varying each assumption within a plausible range, and considering how sensitive the overall NPV result is to variation in that assumption (for example, does variation in a given assumption change a net benefit into a net cost?) As well as varying each assumption individually, scenario analysis can also be undertaken, which involves considering if a combination of plausible changes to each assumption reverses the sign of the NPV.

Step 6: Identify distributional impacts

The implicit framework underlying CBA is that if the benefits of a regulatory proposal exceed its costs, then society (in aggregate) is better off. However, the costs and benefits of a regulatory proposal typically fall on different groups. For example, while the benefits of a proposal may exceed the costs, the benefits may accrue to higher-income households, while the costs fall on lower-income households. It is important to explicitly identify who gains and who loses, and by how much. This makes these impacts transparent, and allows the ultimate decision-maker to consider whether the net benefits are large enough to justify any undesirable distributional impacts.

Summary

CBA is a technique that identifies and measures in dollar terms the full range of societal impacts from a regulatory change. In doing so, it provides a structured, transparent, and evidence-based approach to regulatory decision-making. Used proportionately and alongside other forms of analysis, CBA helps ensure regulatory decisions are analytically rigorous and deliver net value to society.