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ORIGINAL ARTICLE

Designing a national benefit–cost analysis system

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Abstract

A government can establish a 'national benefit–cost analysis (BCA) system' by (1) mandating through either executive or legislative action that BCA be conducted for some designated set of public investments and regulations and (2) creating an institutional structure to support this legal or administrative requirement for the regular, ongoing evaluation of the benefits and costs of new proposed investments and regulations. This paper describes 12 issues that should be considered in the design and establishment of a national BCA analysis system and 4 approaches for combining these 12 design decisions to craft a strategy for establishing a national BCA system. The literature suggests that the results of 'standalone' BCAs are not highly valued or used by decision-makers. This is in part because the quality of BCAs is often poor due to a lack of qualified analysts to conduct BCAs, analysts' overly optimistic estimates of benefits and underestimates of costs, and analysts' strategic misrepresentation of results. This paper suggests that a well-designed national BCA system—assisted by generative AI—may be able to overcome some of the problems associated with 'standalone' BCAs.

KEYWORDS

benefit–cost analysis, generative AI, national benefit–cost analysis system, regulatory impact analysis

JEL CLASSIFICATION
H11, H54, O21, O22, Q58

1 | INTRODUCTION

Benefit–cost analysis (BCA) is an economic methodology for assessing the attractiveness of a proposed investment, policy or regulation. BCA textbooks and manuals focus on teaching students how to compare the benefits and costs of a single, specific intervention (Boardman et al., 2018; Robinson et al., 2019). Far less attention has been devoted to showing how BCA can be used as part of a national system for the ongoing, systematic analysis of new proposed investments and regulations.

I use the term 'national BCA system' to mean that (1) the state has established a legal or administrative requirement that BCA be conducted for some designated set of public investments and regulations; and (2) the state has created an institutional structure to support this legal or administrative requirement for the regular, ongoing evaluation of the benefits and costs of new proposed investments and/or regulations. Only a relatively small number of countries globally have a national BCA system that meets both of requirements. These include the United States, Canada, the United Kingdom, Chile, Spain, New Zealand and Australia. Only a few low- or middle-income countries (LMICs) currently have a national BCA system in place. This is somewhat ironic because early contributions to the field of BCA and development economics often envisaged the establishment of such systems in LMICs, not in high-income countries (Dasgupta et al., 1972; Little & Mirrlees, 1969). The World Bank long advocated for the use of national BCA systems as a rigorous approach for taking account of the multitude of market distortions in the economies of LMICs (e.g., foreign exchange restrictions, imperfect labour markets and import restrictions) and for using BCA to analyse the projects it financed (Belli et al., 2001; Squire & Van Der Tak, 1979).

Many of these market distortions have been reduced in LMICs. At the same time, there has been a rise in new regulations related to health, safety, and the environment (Guasch & Hahn, 1999). Today, the application of BCA is quite similar in LMICs and in high-income countries. In the Anthropocene, a modern BCA toolkit places more emphasis on the use of nonmarket valuation methods to assess the environmental and public health externalities from air and water pollution, climate change and biodiversity loss (World Bank, 2024). As climate conditions in the Anthropocene intensify, it is timely to return to the question of how national BCA systems should be designed and used for both LMICs and high-income countries.[1]

The next, second section describes two rationales for establishing a national BCA system: (1) to improve the allocation of public funds and the design of government regulations that impose costs on private parties; and (2) to improve democratic discourse regarding the outcomes resulting from government investment and regulatory actions, particularly the distributional consequences. In the third section, I discuss 12 issues that designers of a national BCA system need to consider. I illustrate some of these 12 design issues using experiences from the United

[1] A national BCA system can be used not only for the evaluation of environmental and public health investments and regulations but also for a wide range of social and economic policy interventions, including social, education and cultural policy interventions, for example, early childhood development, knowledge creation, recreation, time use and leisure and cultural preservation.

States and Chile, 2 of the oldest and best documented systems.[2] The fourth section describes four approaches (scenarios) for combining these 12 design issues to craft a strategy for establishing a national BCA system. Although the use of generative AI in BCA is not the primary focus of this paper, in the fifth, concluding section, I suggest some initial ideas on how generative AI may be able to assist with the design and operation of a national BCA system.

2 | BACKGROUND: TWO RATIONALES FOR ESTABLISHING A NATIONAL BCA SYSTEM

For both high-income countries and LMICs, there are two related but distinct rationales for establishing a national BCA system: (1) efficient capital allocation and (2) production of information for improving democratic discourse. The first rationale typically involves both positive and normative claims; the second involves only a positive analysis (Arrow et al., 1996; Hammitt, 2013).[3] These two rationales are not mutually exclusive, but how a national BCA system is designed can shift the relative emphasis placed on each justification for conducting BCA.

2.1 | Efficient capital allocation

The fundamental task of private-sector capital markets is capital allocation.[4] Private investors strive to allocate surplus capital to activities (projects) with the highest financial returns. This task is both difficult to do and richly rewarded.[5] Skilled capital allocation requires careful evaluation of a broad range of possible investments.[6]

[2] This paper does not provide a comprehensive review of national BCA systems currently in use by governments around the world.

[3] Positive analysis involves the determination of what will happen if a policy intervention is implemented. In principle, a positive analysis is evidence-based and can be refuted with empirical analysis. For example, suppose a benefit-cost analysis determined the net benefits to individual A would be +$100 and individual B would be −$60. This analysis could have been conducted incorrectly, and these results could be refuted.

Normative analysis involves judgements about the desirability of the outcomes resulting from a policy intervention. Normative analysis relies on a value judgement that cannot be refuted by empirical analysis. For example, again suppose that a benefit–cost analysis determined that the net benefits to individual A would be +$100 and to individual B would be −$60. Suppose an analyst then argued that the policy should be adopted because the total of the net benefits to individuals A and B (+40) was greater than zero. This argument that the policy should be adopted is normative. Note that the analyst's argument rests on both the positive analysis (which determined that the net benefits to individual A would be +$100 and individual B would be −$60) and the normative argument that the policy should be adopted because the sum of the net benefits to the two individuals was positive.

[4] The terminology here can be confusing. Within private-sector capital markets, there are 'public' stock exchanges where shares can be bought and sold by members of the public. Members of the financial community also refer to 'private capital markets', where deals can be struck between willing buyers and sellers, but about which members of the public may have little if any knowledge. Members of the public do not have the option to participate in such private deals. I refer to both of these as the 'private-sector capital market'. I contrast the private-sector capital market with investment decisions made by the state ('public investments').

[5] Peter Rudegeair and Gregory Zuckerman of *The Wall Street Journal* report that the price tag for a top stock picker can exceed $100 million ('The Frenzied Pursuit of Wall Street's All-profile All-stars', 13 June 2025).

[6] Importantly, capital allocation does not mean that surplus capital should be directed to capital-intensive projects. Indeed, often the opposite is true; that is, the projects with the highest returns may have quite low fixed capital requirements.

In their classic book on stock evaluation, *Security Analysis*, Benjamin Graham and D. Dodd (1940) described an approach to value a stock 'based on what it will earn in the future' (discounted cash flow model). BC analysts use the same basic analytical model to evaluate public investments (Dorfman, 1965). The differences in the two types of analysis (financial analysis vs. social BCA) lie in how benefits and costs are calculated, whose benefits and costs are included and the choice of parameter values in the model.

Millions of institutional and private investors participate in global capital markets. Many investors explicitly or implicitly use a model of discounted future earnings to evaluate stock prices, trying to determine if the current price of a stock is under- or overvalued compared to the net present value of a company's forecast stream of profits. The 'efficient markets hypothesis' claims that the actions of these millions of investors incorporate all the available information about the future profits of a company's stock and that the stock prices posted in the market are efficient most of the time (Fama, 1970). If the market for establishing stock prices is efficient, then most investors will not be able to beat the market. The best they can expect is to capture the average market return.

There is no such market process at work for the allocation of capital to public investments. Without the market discipline of many private investors searching for investments with high returns, one would expect the results of BCAs of proposed public investments to vary widely; that is, some proposed public investments will have returns that are much higher than others. For example, Florio (1997) examined the results of BCAs of 200 investment projects co-financed by the European Commission between 1988 and 1993 and found 'a striking dispersion of expected rates of return'. Similarly, the Copenhagen Consensus Project has carried out BCAs of investments in different sectors in LMICs and also found wildly different rates of return, both within and between sectors (Lomborg, 2009, 2023).[7] With regard to regulatory interventions, Hahn et al. (2000) report that economic returns from proposed environmental regulations in the United States that included mortality reduction benefits varied widely, but that many had high BC ratios. Graham (2007) also describes environmental regulations where the benefits of regulations exceeded their costs. In contrast, Hahn and Sunstein (2002) report evidence that other environmental regulations have low BC ratios.

If a private investor's portfolio is allocated to investments with high returns (or even just market returns), these returns will compound, and over time the size of the investor's portfolio will grow exponentially. One objective of a national BCA system is to establish a similar growth process for public investments, that is, to identify the investments with the highest returns and allocate the available capital in the national budget to these investments on an ongoing basis (subject to distributional considerations). If this process of investing in the projects with the highest returns is repeated year after year, national income will increase much more rapidly than if public investments include a disproportionate number of projects with low or negative returns.[8] Similarly, if government regulations with high rates of return are selected, over time such regulations will contribute to a rapid growth in social well-being.

[7] An important underlying reason for such different results is that, in contrast to private investors, government officials and BC analysts who propose projects are not investing their own money ('no skin in the game'). Without a systematic protocol for evaluating public investments, government officials may pursue other objectives or use different analytical approaches, including their personal intuition.

[8] For example, De La Fuente (1996) found that economic growth in Spain would have been higher if infrastructure projects had been assessed using an economic efficiency test instead of a criterion that allocated funds to poor regions.

Experienced investors know that forecasts of future profits are uncertain, and the results of a discounted cash flow model will be imprecise. Thus, mistakes will be made in estimating the current value of a company, and private investors should strive to pay a price for a security with a 'margin of safety' (Graham & Dodd, 1940; Klarman, 1991). Of course, many private investors rely on their intuition to determine whether a stock is a good buy at its current price, but enough private investors use a disciplined valuation approach to ensure that the efficient markets hypothesis is reasonably accurate much of the time.

Similarly, forecasts of future benefits from public investments are uncertain, and some government officials rely on their intuition to assess the likely returns on public investments. Some public projects will fail to live up to expectations. A national BCA system will not produce highly accurate ex ante BCAs in every instance. However, it can provide a disciplined, rigorous process for attempting to estimate the future benefit and cost streams from possible investments and then convert these to a performance indicator such as net present value, BC ratio or internal rate of return.

The key point is that although millions of participants in private-sector capital markets make it difficult for a private investor to allocate capital to achieve a return above the market average, this is not true of public investments. An evaluation of public investments will reveal opportunities with extremely high returns. For example, Table 1 shows the BC ratios of seven interventions reported in peer-reviewed papers recently published in the *Journal of Benefit Cost Analysis*. Most of these interventions have benefits that are an order of magnitude greater than the costs. Even if the estimated benefits and costs are uncertain and the results overly optimistic, these are fantastically attractive public investments. One rationale for a national BCA system is to identify such investment and regulatory opportunities. Conversely, a national BCA system can identify investment and regulatory proposals with low returns that should be avoided.

There is, however, an important difference between the growth of a private investor's portfolio and a portfolio of public investments. The growth in value of a private investor's portfolio accrues to the owner (minus any expenses paid to financial intermediaries/managers). It is less clear to whom the growth in value of a 'public portfolio' will accrue. The 'owners' of a portfolio of public investments are diverse (both within and between generations). The property rights to the portfolio are poorly established and may change with changes in government. Unless a country has a sovereign wealth fund, many citizens may not even be aware that they will potentially benefit if this 'public portfolio' grows in value. This lack of awareness and the ill-defined property rights create complex political economy issues that do not exist for a private portfolio. For example, people in a specific region will likely recognize that they will benefit if an infrastructure project is built near them, but they may not be aware that they would also benefit from an investment with a higher rate of return in another region. They may pressure political authorities to invest in the project in their region even if the results of BCAs show investments with higher returns elsewhere.

This political tension emphasizes the importance of other objectives that matter to the state besides economic efficiency. States care about social cohesion and governability, and these objectives typically depend on the fair and equitable allocation of public funds across regions. Maintaining social cohesion and governability creates political stability, which in turn contributes to wealth creation. A state may ultimately conclude that a public investment with a lower rate of return may be preferable to a project with a higher return if the former contributes to political stability. However, a national BCA system is still important to clarify trade-offs between economic efficiency and other objectives. Without information on the economic rates of return on possible investments, the state will have to guess at such trade-offs

TABLE 1 Examples of papers published in the *Journal of Benefit Cost Analysis* with high benefit–cost ratios.

Authors	Title/Citation	Intervention	BC Ratio
DeAngelo G., M. Krouse, and R. Quandt	The Costs and Benefits of a Local DNA Database *Journal of Benefit Cost Analysis* (2024), 15: 3, 374–394. doi:10.1017/bca.2024.44	Establishment of local DNA database to improving public safety	1.71
Luke R., L. R. Dennin, and N. Z. Muller	Funding a Just Transition Away from Coal in the U.S. Considering Avoided Damage from Air Pollution *Journal of Benefit Cost Analysis* (2025), 16: 1, 79–106. doi:10.1017/bca.2024.20	Accelerate the retirement of remaining coal-fired power plants via buyouts	17.6
Garfinkel I., et al.	The Benefits and Cost of a Child Allowance. *Journal of Benefit Cost Analysis* (2022), 13: 3, 335–362. doi:10.1017/bca.2022.15	Child Allowance [Increase the benefits of the Child Tax Credit to $3600 per child ages 0–5 and $3000 per child ages 6–17, and make it fully refundable]	9.6 per year
Bosio E., G. Hayman, and N. Dubosse	"The Investment Case for E-Government Procurement: A Cost–Benefit Analysis." *Journal of Benefit Cost Analysis*. (2023).14: S1, 81–107. doi:10.1017/bca.2023.10	Establishment of e-government procurement (e-GP) platforms in a LMIC	Lower middle-income country: 142-473
Rosegrant M., B. Wong, T. Sulser, N. Dubosse, and T. Lybbert	"Benefit–Cost Analysis of Increased Funding for Agricultural Research and Development in the Global South." *Journal of Benefit Cost Analysis* (2023), 14: S1, 181–205. doi:10.1017/bca.2023.27	Expanding agricultural research and development (R&D) in the Global South	33
Byamugisha F. and N. Dubosse	"The Investment Case for Land Tenure Security in Sub-Saharan Africa: A Cost–Benefit Analysis." *Journal of Benefit Cost Analysis*. (2023). 14: S1, 272–300. doi:10.1017/bca.2023.14	Completing and modernizing land registration in Sub-Saharan Africa	Rural: 18 Urban: 30
Angrist N., E. Aurino, H. Patrinos, G. Psacharopoulos, E. Vegas, R. Nordjo, and B. Wong	"Improving Learning in Low- and Lower-Middle-Income Countries. *Journal of Benefit Cost Analysis*. (2023). 14: S1, 55–80. doi:10.1017/bca.2023.26	Combination of two interventions (structured pedagogy & teaching at the right level)	65

Abbreviation: LMICs, low and middle-income countries.

and may miss opportunities to create deals with multiple investments that are attractive to all parties.

The Chilean BCA system uses an interesting approach to enable states to incorporate objectives other than economic efficiency. Public investments are required to pass a threshold rate of return. If an investment meets this specified threshold, it is eligible for public funding, and other objectives can be considered. All projects that pass the threshold potentially can be funded with public resources, but which projects eventually obtain funding is a political decision. This threshold approach enables the state to better resist political forces to fund investments with very low rates of return.[9] This filtering out of 'white elephants' is an essential function of a national BCA system. The Chilean threshold approach provides the state with an additional tool to resist the political pressures associated with projects that may benefit a small group but impose much larger costs on taxpayers.[10]

The 'efficient capital allocation' argument for a national BCA system rests on two propositions. The first is that BC analysts working within a national BCA system can successfully identify proposed investments with more attractive rates of return than a budgetary process that does not use BCA. Of course, identifying projects with high returns is not sufficient. These projects must be implemented successfully. This leads to the second proposition—that projects with high returns estimated ex ante are more successful ex post than projects with low ex ante returns. Jenkins (1997) provides empirical support for this second proposition. His analysis found that the quality of ex ante economic analysis of World Bank-financed projects is positively associated with their ex post project performance.

This first objective requires high-quality positive analysis to provide accurate estimates of benefits and costs[11] and also typically makes a normative assumption, either implicitly or explicitly, that the state should fund public investments with high rates of return because this will lead to increased social well-being.

2.2 | Information to support democratic discourse

A second objective of a national BCA system may be to provide the results of positive analyses to the public to promote democratic discourse. A democratic process can then determine which investments and regulations should be adopted. From this perspective, the primary objective of a BCA is 'to provide factual input to a democratic process', that is, to conduct positive, not normative, analysis (Nyborg, 2012). Participants in a democratic decision-making process will decide on the attractiveness of public investments and regulations based on their own normative criteria. Perhaps these participants will find the information provided by a positive analysis of the costs and benefits to different affected parties useful; perhaps not. Indeed, many scholars

[9] Weimer (2018) makes a similar argument, that is, legislators may impose benefit–cost requirements to tie their own hands to limit their ability to fund projects with low returns.

[10] In this Chilean system, the precise rate of return of an investment is less important. The key information provided by the national BCA system about a project is discrete; that is, whether its rate of return or BC ratio passes the minimum threshold required.

[11] See Pannell et al. (2025) for a theoretical discussion of the value of improving the quality of benefit estimates used in BCA.

argue for a multi-objective approach to project selection that gives no special priority or attention to welfare-theoretic estimates of benefits and costs (Harou, 2023).[12]

Large public investments and major environmental and health regulations create winners and losers and are typically controversial. Although the focus of BCA is usually to promote allocative efficiency, it also often contributes to distributional analysis by including the preferences of stakeholders who do not have a voice.[13] Institutions are needed to address the inevitable conflicts that arise over distributional consequences of investments and regulations. The judicial system is the formal conflict resolution mechanism used for such disputes. Judges and juries may both want to hear evidence on the costs and benefits of controversial investments and regulations. One important function of a national BCA system is to provide the judicial system with high-quality analysis. However, rational public discourse requires that participants have a shared meaning of each other's language (Habermas, 1985; Forester, 1986; 1989). This requirement poses a challenge for economists conducting BCA because the terminology they use to describe benefits and costs and the rhetoric deployed in policy arguments is not widely understood (McCloskey, 1985). Their understanding of what counts as a benefit and as a cost may differ from terminology used by the judicial system.[14]

The analytical results from a national BCA system may also prove valuable as inputs to other, less legalistic, more deliberative conflict resolution mechanisms (Dehnhardt et al., 2022). For example, approaches for fostering public participation such as participatory budgeting (Ozdemir et al., 2016; Sintomer et al., 2012), citizen juries (Crosby et al., 1986; Smith & Wales, 2000), consensus conferences (Joss, 1998), planning cells (Dienel, 1999) and structured value referendums with approval voting (McDaniels & Thomas, 1999) could all use the results of BCAs as inputs for their discussions and deliberations.

Such less legalistic, more deliberative conflict resolution mechanisms may be especially useful for fostering democratic discourse about the intangible consequences of public investments and regulations and the equity and fairness of the distributional consequences. Proponents of the use of BCA have long acknowledged that some effects of public investments are difficult to express in monetary terms (Banzhaf, 2023; Whittington & Smith, 2021). There has been a consensus in the BC community that such 'intangibles' should not be neglected and instead described in words. This raises the question, 'Who is the intended audience for these words describing intangibles?'. One audience could be government officials with the final decision over what is to be included in the government budget. But another potential audience may be the participants in participatory conflict resolution mechanisms, whose discussions can reveal important insights into how members of the public think about 'intangible' and distributional consequences of investments and regulations.

Economists typically will be among the few advocates for 'economic efficiency' in such public deliberations (Schultze, 1996). Without the input of high-quality BCAs generated by a national

[12] A problem with this multi-objective approach from the perspective of the state is that such multi-objective evaluations of public investments are not prepared as part of a national system. Typically, multi-objective evaluations of interventions are conducted as 'one-off' analyses and cannot easily be compared to each other to facilitate budgetary decisions.

[13] For example, in an oligopoly, the small number of firms may be able to overcome the collective action problem to lobby for import quotas, whereas the consumers who bear the costs usually cannot overcome the collective action problem of organizing for lobbying. A BCA would take greater account of their interests than would the political system.

[14] One advantage of a national BCA system that supports public discourse may be to bring economists' and judges' views of what constitutes a 'cost' and a 'benefit' in closer alignment.

BCA system for public discussion, economists' voices can easily be drowned out by participants with many different objectives and perspectives.

For estimates of the benefits and costs of proposed projects and regulations to be useful inputs to deliberative conflict resolution mechanisms, it will be necessary to improve the financial literacy of many members of the public. Research has shown that in both LMICs and high-income countries, financial literacy is very low. Most people cannot answer simple questions about compound interest, the effect of inflation on purchasing power and the benefits of diversification (Lusardi & Mitchell, 2014). Without such basic financial knowledge, it will be difficult for the public to interpret the results of BCAs, much less understand the advantages offered by a national BCA system. Some economists will have little patience for such public discussion of their BCAs.

However, public participation mechanisms need not result in 'conflict resolution' to have social value. The process of discussing and airing conflicts over public investments may have indirect positive social effects even if compromises are not reached between opposing parties. Such conflicts may result in the social interactions that help hold democracy together (Hirschman, 1994). From this social cohesion perspective, a national BCA system that provides critical information to such public participation mechanisms makes an important contribution to society in addition to efficient capital allocation and conflict resolution.[15]

2.3 | Benefit–cost analysts' perspectives on the objectives of 'efficient capital allocation' versus 'information to support democratic discourse'

BC analysts have debated their role in the political process and the relative importance of these two objectives of 'capital allocation' and 'information to support democratic discourse' (Sugden, 2008). Sugden and Williams (1978) argued in favour of a 'decision-maker' approach. From their perspective, the appropriate role of the BC analyst is to work closely with a policymaker to assist them in making better decisions. This might involve depicting the trade-offs between multiple objectives, including the economic efficiency (BC) objective. For example, a BC analyst could show policymakers the implications for such trade-offs of using a specific parameter value in a BCA. This decision-making approach is easily adapted to the case where the BC analyst works with multiple parties in a public deliberation process. In supporting a participatory process, a BC analyst again provides information about trade-offs between multiple objectives of importance to the parties (including economic efficiency) and shows how different parameter values and assumptions affect these trade-offs.

In contrast, E. J. Mishan (1981, 1982) argued for a more technocratic or 'hands off' approach. From this second perspective, the role of the BC analyst was to provide the political process with a sound (positive) economic analysis of a public investment or regulation.[16] What policymakers ultimately did with this information was up to them. More concretely, the task of the BC analyst was to provide estimates of the economic rates of return (or BC ratio, net present value) of the public investment or regulation. If the state decided that, given this information, it wanted

[15] A national BCA system may also promote social cohesion by reducing corruption. A common form of corruption is to inflate the costs of public investments and for government officials to receive kickbacks based on the difference between actual and invoiced costs (Davis 2004). A national BCA system focuses attention on a project's cost estimates, often comparing a project's costs with international benchmarks. Government officials may be more reluctant to participate in such schemes to inflate costs if they know that cost estimates will be scrutinized by both BC analysts and the public.

[16] This second approach leaves open the question of whether there is a consensus among economists as to what constitutes a 'sound economic analysis' of a public investment or regulation.

to pursue another course of action, that was none of the economist's business. These other objectives of the state were outside of the economist's area of expertise. Schultze (1996) argued for a hybrid approach of these two positions, that is, that economists should be active participants in the policy process and serve as 'advocates for economic efficiency'.

This debate about the appropriate role of the BC analyst in advising policymakers implicitly assumed that BCAs were not being conducted as part of a consciously designed national BCA system. Sugden and Williams' 'decision-making approach' clearly assumed that the analyst would engage with and take direction from policymakers, but this could still be a one-time interaction. Similarly, Mishan's more technocratic approach assumed that the economist was likely a one-off advisor or consultant on a specific project.

There is a large literature on the quality of 'standalone', 'one-off' BCAs and their use in the political process (Hammes et al., 2021; Hanke & Walker, 1974; Kuik et al., 1992; Leff, 1985; Mouter et al., 2013; Mouter, 2017a, 2017b; Nyborg, 1998; Sager, 2016). The main findings from this literature are that the results of BCAs are not highly valued or used by decision-makers. There are two main reasons. The first is that policymakers have other objectives than economic efficiency. The second is that the quality of BCAs is often poor.

The literature suggests that there are multiple reasons for the poor quality of 'one-off' BCAs. These include a lack of qualified analysts to conduct BCA, analysts' overly optimistic estimates of benefits and underestimates of costs (Cantarelli et al., 2010; Flyvbjerg et al., 2003, 2005), and analysts' strategic misrepresentation of results (Flyvbjerg, 2005; Flyvbjerg et al., 2002, Flyvbjerg, 2008; Flyvbjerg & Bester, 2021). Decision-makers are also often sceptical of analysts' nonmarket valuation methods and their ability to provide reasonable monetary estimates of environmental, social and health outcomes. These two reasons are not mutually exclusive; that is, decision-makers may put more weight on objectives other than economic efficiency and also doubt the accuracy of analysts' estimates of benefits and costs.

If the use of standalone BCAs for public sector decision-making has been so challenging, why establish a national BCA system? One answer is that BC analyses conducted for a well-designed national BCA system may be able to overcome some of the problems associated with standalone BCAs.[17] A national BCA system may improve the quality of BCAs by forcing the use of similar methods and analytical assumptions. Analysts working for the government institution responsible for the national BCA system are obviously not one-off advisors. Their purpose is clearly to improve government decision-making, and their analyses need to be responsive to policymakers and the public's needs for information. In this sense their role is closer to the Sugden and Williams' 'decision-maker' approach. On the other hand, the government institution responsible for the national BCA system also must be concerned about maintaining the integrity of BCAs, Mishan's overarching concern when he advocated for clearly maintaining the professional standards of economists.

A second answer is that a national BCA system may serve an educational purpose. A national BCA system may encourage more policymakers and citizens to study the theory and methods of BCA and thus become better able to utilize the information provided. A third possible answer is the generative AI may be able to overcome some of the problems associated with poor-quality BCAs.

[17] There are a few evaluations of the quality of RIAs conducted under the national BCA system in the United States (Grubb et al., 1984; Hahn & Dudley, 2007; Robinson et al., 2016). The results of these studies mirror many of the concerns of authors who have examined the quality of standalone BCAs but are not as pessimistic about the attempt to use BCA in the policy process.

In the next section of this paper, I discuss 12 questions that need to be answered to design a national BCA system.

3 | TWELVE QUESTIONS FOR DESIGNERS OF A NATIONAL BCA SYSTEM

This section describes 12 key questions that designers of a national BCA system should answer to establish an effective national BCA system.

3.1 | What is the legal foundation of the system?

There are two main ways that a national BCA system can be established: (1) by executive action or (2) by legislation. For example, in the United States, in 1981, President Ronald Reagan established a national system for the use of BCA for the evaluation of major federal regulations by an executive order (E.O. 12291). This executive action charged the Office of Management and Budget, a federal agency reporting to the President, with the implementation of this new national BCA system. Subsequent US presidents have continued this practice by issuing their own executive orders that have made modest modifications to E.O. 12291. The US national BCA system thus rests on the administrative authority granted the President in the US Constitution. The legislative branch played no role in establishing the requirement that the benefits of major federal regulations should exceed their costs.

In contrast, Chile's National Public Investment System (SNI) was established by the passage of national legislation (Fontaine, 1997; Gómez-Lobo, 2012). Article 19bis (passed on 29 December 1988) of Decree Law 18,768 established the requirements for ex ante evaluation of proposed public investments. The Ministry of Finance sends a budget for public investments to the Chilean Congress. Congress approves an aggregate investment amount without a formal consideration of the projects that will eventually be funded. The legal restriction is that the executive cannot use these budget resources for an investment unless it passes a BCA threshold. This legislation essentially required that the projects in this budget have passed a BC test (or, in some sectors, a cost-effectiveness test). Projects proposed by government agencies that do not meet a specified BC threshold are excluded. Article 19bis assigned the Ministry of Finance with the responsibility to issue guidance for how the BC appraisal was to be done and to resolve any disputes that might arise.

Both the executive and legislative approaches have pros and cons. The advantage of the executive approach is that it can be implemented quickly under the executive's direction. It may also better constrain legislative decisions to fund projects supported only by special interest groups. Its main disadvantage is that a new executive can quickly remove the BCA requirement. If a national BCA system is established by the legislative approach, it may have broader public support and be perceived as more legitimate, enhancing its resilience and durability. Establishing a national BCA system by legislation may also mean that the results of BCA receive more weight by the judiciary in any legal disputes. However, it may take time to reach consensus on legislation establishing a BCA requirement, and the compromises made in reaching consensus may reduce the effectiveness of the national BCA system.

3.2 | What public decisions are evaluated?

In theory one might wish to require that all public decisions be analysed to determine whether the benefits properly defined exceed the costs. However, there are three important constraints on the reach of any BCA mandate.

The first is a human resource constraint. How many high-quality BCAs can the available professional staff conduct in a timely manner? Limits on the human resources available for doing BCA will likely be a central focus for many LMICs considering the establishment of a national BCA system. The number of skilled BC analysts can be increased, but any national BCA system will confront constraints on human capital, budget and time. Government managers will thus need to carefully consider how best to allocate available human resources to maximize the returns from analysis.

There are several ways that this can be done. BCA can be limited to or focused on one type of public decision. For example, in the United States and Canada, most attention is given to the analysis of regulations, not public investments. In Chile and the European Union, the focus is on public investments, not regulations. Another approach to limit the reach of a BCA mandate is to only evaluate public decisions with large consequences. The United States sets a threshold of $200 million for the 'impacts' of a regulation. An RIA is only required for regulations above this threshold.[18] The Chilean National System sets a threshold of approximately $350,000 for the capital expenditure for a public investment. The European Union uses a threshold of 50 million euros (Florio et al., 2018).

An alternative way to limit the reach of the BCA mandate would be to set a maximum number of projects to be evaluated per year by the available staff. The specific projects to be evaluated could be selected by the size of the project (e.g., the largest projects); by the importance attached to the project by government; by sector (e.g., the maximum number could be allocated across sectors so that each sector has a few projects analysed); or even by lottery (so all projects have some probability of being analysed). Some combination of these selection criteria could also be used (e.g., a limited number of BCAs could be conducted in each sector, and within a sector the projects to be analysed could be selected by lottery).

A second type of constraint on the reach of a BCA mandate is political. There are circumstances where political considerations will override an economic efficiency objective. There are two conceptually different ways that political considerations can be addressed within a national BCA system. One approach is for the results of the BCA to be 'advisory' to the executive or budgetary authority. In this case, a public investment or regulation can still be implemented if the project or regulation fails a BC test, but the BCA mandate provides the executive with a more complete set of information on which to make their decision; that is, Sugden and Williams' 'decision-making approach'.

Another approach to incorporate political considerations is to identify specific sectors that are 'off limits'. An obvious example is military investments where the primary objective is national security, not economic efficiency. In such cases, the national BCA system could require that cost-effectiveness analysis (CEA) be conducted instead.[19]

[18] The term 'regulatory impact analysis' is commonly used to describe a BCA of a proposed regulation.

[19] Political considerations can also determine which government regulations are the focus of BCA. Hahn (1990) examined the question of 'what gets regulated'? He argued that a regulator will choose to impose standards when the economic costs on the parties are low and the political costs to the government are low. The regulator will avoid imposing regulations

A third type of constraint on the reach of a BCA mandate is methodological. Either the legislative or executive authorities may decide that the challenges of measuring the economic benefits of investments or regulations in some sectors are too great or unresolved and that such public decisions should be exempted from any BCA mandate. Examples might include biodiversity preservation or some types of public health interventions.[20] In some cases, CEA might be required in lieu of BCA.

These three types of constraints are not mutually exclusive. For example, some sectors may be off limits, and the results for other sectors can be advisory.

A disadvantage of all of these types of constraints is that both good and bad projects will be excluded from analysis. This will limit the ability of government officials to develop a comprehensive ranking of projects for possible investment. However, a ranking of a subset of projects is better than no ranking at all. 'The best should not be the enemy of the good' during the initial stages of establishing a national BCA system.

3.3 | What agency is assigned responsibility for the national BCA system?

Once the decision has been made to establish a national BCA system, the government needs to decide what institution should be responsible for its management and implementation. An obvious candidate is the Ministry of Finance or Planning, where the results of the BCAs can be easily incorporated into budgetary decisions. This has been the strategy followed by the United States, where the designated institution was the Office of Management and Budget.[21] There are, however, other possibilities. Chile assigned the Ministry of Social Development and the Family to administer the system.

Responsibility could be placed in an organizational unit reporting to the legislature (Weimer, 2005). When the legislature has responsibility for passing a government budget, this option might provide an appealing way for legislators to examine the executive's proposed budget. However, there is an important disadvantage of having the institution assigned responsibility for the national BCA system reporting to the legislature. In many countries, legislators are less interested in the economic profitability of investments than the executive branch of government. Legislators are typically good at cutting deals that benefit their local constituents, not at creating deals to maximize national economic returns subject to political constraints.

Another possibility could be a new, independent agency within the executive branch. This option might provide BCA analysts more independence and make them less susceptible to political pressure from the executive branch to approve proposed investments or regulations. This approach also has the advantage that it creates two executive units that will potentially promote the economic efficiency objective. For example, it would allow the independent agency and the Ministry of Finance to 'team up' to resist funding a line agency's proposal for an investment with a low rate of return but strong political support.

when the costs of both are high. But the regulator is more likely to avoid imposing regulations with high political costs than regulations with high economic costs.

[20] As another example, in the 1990s, the World Bank effectively stopped conducting BCAs of rural water projects. The benefits were deemed too difficult to measure.

[21] Similarly in Canada, the Treasury Board is assigned responsibility for managing the BCA system. However, the line departments are responsible for the actual appraisals.

3.4 | Who should conduct the ex ante BCAs?

Once a government has decided to establish a national BCA system and has determined the implementing agency, the next question is who should do the ex ante BC analyses. Analysts will have to be trained in the theory and methods of BCA and how it is to be used in the new national BCA system. Where should these teams of analysts be 'housed'? There are three main options.

First, BC analysts may be employed by the public agencies responsible for preparing the projects. With this approach, BCA is most closely tied to the project design process. This has the advantage that if it appears that the project or regulation will fail a BC test, the project can be redesigned (or abandoned) before it is put forward for funding or adoption. The detailed information about the project is also best known to the agency proposing a project or regulation.

However, the agency proposing the project or regulation has a difficult conflict of interest. Internal proponents will want 'their' own BC analyst to put a good face on their project or regulation. It is challenging to ensure the independence of an internal BC analyst. Typically, professionals within an agency will not want the task of preparing a BCA because an unbiased BCA may show that a project fails a BC test. Such a result may jeopardize an internal BC analyst's relationship with colleagues and supervisors who favour the project. Hammes (2021) argues that the longer an analyst is employed by an agency, the less willing they are to conduct a BCA. Agencies thus have strong internal pressure to outsource the actual responsibility for preparing BCAs to external consultants.[22]

This first approach was originally used by the World Bank when BCA was still an important part of its process for justifying its loans. World Bank economists were responsible for conducting these BCAs. Gradually the responsibility for conducting BCA was shifted to economists in the countries receiving the World Bank loans because World Bank economists preferred not to assume the professional risk associated with this work. To the extent that some BCAs continue to be done by the World Bank, there is a tendency for them to be conducted by internal or external consultants, not permanent staff.

The second approach is to establish a unit for BC analysts separate from the line agency that is proposing an investment or regulation. This BCA unit may be in the Ministry of Finance, where it is close to the budgetary process. The main advantage of this second approach is that to some extent it avoids the conflict of interest associated with having the analysis conducted by the agency proposing the project. It is also more likely to develop a professional 'esprit de corps' among staff with the specific responsibility to help improve the entire public investment portfolio, in contrast to an agency whose mission is, for example, to protect the environment or improve the nation's housing.

However, this second approach suffers from three major problems. First, analysts in a separate unit are unlikely to have the sector expertise of those in line agencies and thus do not have the technical background to conduct high-quality BCAs. Second, there may simply be too much work for a centralized unit. Third, the BCA needs to begin early in the process when the line agency is first designing the project.

The third approach is a combination of these two. Line agencies can prepare the investment or regulation and internally carry out the BCA. This BCA is then reviewed by some type of central office staffed with BC analysts to ensure its quality. This third 'hybrid' approach was adopted

[22] However, this does require that the agency share internal data with external consultants, which in some cases it may be reluctant to do.

in the United States' BCA system.[23] The agency proposing a regulation must submit a 'Regulatory Impact Analysis' to the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget with the Executive Office of the President. OIRA has an internal team of economists to review these RIAs. It is common practice for an agency such as the US Environmental Protection Agency or the US Coast Guard to contract with a private consulting firm to actually prepare the RIA to be submitted to OIRA. This practice of outsourcing has two advantages for the agency. The agency does not need to worry about building in-house expertise in BCA. Moreover, the agency can more easily disavow the work of an outside consultant than the work of one of its own staff members. However, hiring an outside consultant does not eliminate the potential conflict of interest problem. Any outside consultant will know that the agency proposing a project or regulation would like to have a positive BCA.

The third approach was also adopted by the Chilean SNI. The responsibility for the national BCA system rests with the Ministry of Social Development and the Family, which works with the Ministry of Finance on the design and implementation of the SNI, establishing a further layer of administrative independence from line agencies requesting funding for their investments. The line agencies seeking funding for an investment must prepare a BCA or a CEA, depending on the type of project. This BCA or CEA, along with associated project documentation, is submitted to the Ministry of Social Development and the Family, where an investment analyst reviews the quality of the analysis, ensures that it complies with the Ministry's procedures and makes a final determination of the project's rate of return.

An advantage of this third approach is that it is better able to exploit economies of scale in conducting BCAs of investments and regulations proposed by multiple government agencies. A central agency in this hybrid approach can estimate and update shadow prices for all line agencies, eliminating the need for each agency to undertake this task (see Section 3.6).

3.5 | When should ex ante BCAs be conducted?

Ex ante BCAs are often conducted too late in the project development cycle. Economists need to be brought into the project cycle in the design stage. In practice, this will usually require that BCA be part of an iterative process in which project components that detract from its economic profitability are weeded out or modified at an early stage. In many respects, economists' insights into benefits and costs are most valuable at the initial feasibility assessment stage when changes are still easy to incorporate. As project design develops, powerful interest groups may arise, and political support may solidify around a specific design. If BCA is done too late in the project cycle, projects may 'take on a life of their own' before economic aspects of the project have been considered. An ex ante BCA is still required of the final project proposal. But this BCA is more likely to be positive if BCA considerations are incorporated at the design stage.

3.6 | What guidance should be provided to BC analysts?

For the objective of efficient capital allocation, analysts need to compare the economic attractiveness of different investments and regulations so the public resources can be allocated to those

[23] This is also the system adopted in Uganda, where the Ministry of Finance, Planning, and Economic Development manages the national BCA system, and the line departments are responsible for the preparation of the BCAs. A staff member of the Ministry of Finance, Planning, and Economic Development is usually assigned the responsibility to monitor the BCAs of a line department.

activities with the highest returns. If BCA is not applied consistently, this comparison will not be possible. Thus, the government agency that is assigned responsibility for managing the national BCA system will need to issue guidance to those analysts responsible for conducting the studies to ensure this methodological consistency (Fontaine, 1997; Rajaram et al., 2010; Abelson, 2020). Methodological consistency is also important for the second objective of promoting democratic discourse. Participants in participatory processes may need to be reassured that the BC results they are reviewing are based on the assumptions and parameter values used in other BCAs.

This guidance document will differ from a BCA textbook in three main respects. First, its purpose is prescriptive. Unlike a BCA textbook that may describe different conceptual approaches to measuring benefits and costs, the government guidance document tells analysts what to do. Analysts may still be left with some discretion on how to address controversial issues, but the purpose of the guidance is to remove the need for analysts' discretion to the extent practicable.

Second, the guidance document should specify many of the parameter values that BC analysts will need to use in their calculations. Such parameters may include the social rate of discount, the social cost of carbon, the value of a statistical life (VSL), the marginal value of public funds, the value of time savings and the shadow value of labour. The guidance may also require BC analysts to use standard projections of economic growth, population and climate to estimate the dynamic baseline, that is, the counterfactual without the intervention (Whittington, 2025). The guidance document also may prescribe a standard approach to sensitivity analysis for such parameter values and projections.

Third, the government agency that is assigned responsibility for managing the national BCA system may detail the software that analysts should use to conduct their calculations and how the software and analysis should be documented and available to others (e.g., the public) for review and cross-checking. Ideally the guidance documents should provide examples of actual appraisals with complete spreadsheet models that can serve as a template for similar projects in a sector.[24] The agency may also require that the results of the BCA be presented in a specific format or table. Such concerns for documentation and transparency are beyond the scope of BCA textbooks but are especially important for the objective of providing information to support democratic discourse.[25]

For existing national BCA systems, the preparation of such guidance has proved to be a large, complicated undertaking. The European Union's guidance document went through five versions between 1994 and 2014 and grew in length from 28 to 358 pages (Florio et al., 2018). The Chilean national system has both a general guidance document and many additional documents dealing with specialized topics (Gómez-Lobo, 2012). The OIRA of the US Office of Management and Budget recently spent over a year preparing revisions to Circular A4. This guidance document is 93 pages (United States Office of Management & Budget, 2023). OIRA invited public input on its draft Circular A4 and received hundreds of comments. The UK's Green Book (HM Treasury, 2022) is 148 pages long, but there are many supplemental documents providing additional guidance.

The main reason that the preparation of such guidance is complicated is that there are important debates within the field of BCA as to how some issues should be handled within both individual BCAs and as part of a national BCA system (e.g., discounting, distributional analysis,

[24] The John Deutsch International Executive Programs Discussion Paper Series, Queens University, Canada, offers practical guidance for conducting BCAs of investments in specific sectors (see Arhinful et al., 2025; Foroogh & Miklyaev 2025; Maigida & Miklyaev 2025; Nanyonjo & Miklyaev, 2025, for examples of sector guidance for investment appraisal in Mozambique).

[25] For guidance on the design of tables in BCA, see Schwabish (2020).

uncertainty and general equilibrium effects). These controversies within the field necessitate a greater role for sensitivity analyses as standard practice for BCAs conducted within a national BCA system.

The process of developing guidance documents can itself serve an additional function in an organization. The design, appraisal and implementation of large public investments require interdisciplinary teams. The task of developing a BCA guidance document and then applying the agreed-upon methodology can foster cross-disciplinary discussion and a deeper understanding of the benefits and costs of an investment or regulation by all members of a team. International organizations like the World Bank and the European Union employ staff from many different countries and from different disciplines. BCA offers a common language for an organization's internal staff to discuss project design and outcomes.[26]

Fortunately, LMICs considering the establishment of a national BCA system do not have to prepare guidance document(s) from scratch. There are now numerous high-quality guidance documents available from other countries that can be used as a starting point for creating a new country-specific guidance document and for revising this guidance over time. Moreover, many of the individuals who have worked on these existing guidance documents likely will be willing to share their experiences and provide comments on new guidance documents.

3.7 | Should both a benefit–cost analysis and a financial analysis be conducted?

The core task of a national BC system is to conduct BCAs of proposed public investments and regulations. This requires the use of shadow prices to measure the social value of both project inputs and outputs, the estimation of the magnitude of positive and negative externalities and the inclusion of all groups affected by the intervention.[27] The question is whether the BCAs should be supplemented by a financial analysis of the investment using market prices. The disadvantage of doing both a BCA and a financial analysis is that this requires additional work. It may necessitate that an economist conduct the BCA and that a finance professional with more business-oriented skills conduct the financial analysis. Another potential disadvantage is that guidance must be provided for conducting both BCA and financial analysis, and this will require more work.

However, there are three important advantages of doing both a BCA and a financial analysis of a proposed investment or regulation. First, the comparison of the results of a BCA and a financial

[26] For example, Florio et al. (2018) argue that the development of the EU's guidance document represented 'a true European intellectual project and shows the value added of adopting a common project evaluation framework in regional policy in an otherwise highly fragmented panorama'.

[27] Financial analysts use market prices to determine the value of the inputs and outputs of an investment project. In contrast, BC analysts use 'shadow prices', which are per-unit estimates of the social value of the project's inputs and outputs. In some situations, shadow prices will be close to market prices, and the results of a BCA and a financial analysis will be similar. However, there are three main reasons that market prices and shadow prices can differ. First, financial analysis using market prices assumes that the market price measures the value of the input or output to an individual. In contrast, BCA attempts to account for the fact that the input or output may be worth more to an individual than the market price (measured as the individual's 'consumer surplus' or compensating or equivalent variation). Second, depending on the regulatory regime, market prices may not account for positive and negative externalities that the project imposes on others. Estimates of shadow prices should incorporate externalities. Third, financial analysis uses market prices to estimate the consequences of the project from the perspective of the private investor(s). BCA uses shadow prices to estimate the consequences of the project on all affected parties (groups of people). See Boardman et al. (2018) for a detailed discussion of shadow prices.

TABLE 2 Four outcomes of a benefit–cost analysis (BCA) and financial analysis of a project.

	Project fails BC test	Project passes BCA
Project fails financial test	Case 1	Case 2
Project passes financial test	Case 3	Case 4

analysis reveals important information about the intervention (Florio et al., 2018). As shown in Table 2, there are four possible outcomes. In Case 1, the project fails both a BCA and a financial analysis. This outcome definitively shows that there is no reason to pursue this project from the efficient capital allocation perspective.

In Case 2, the project passes a BCA, test but fails a financial analysis. This outcome suggests the project will increase social well-being, but it will not be attractive to private investors. Public funding will thus be required and is justified.

In Case 3, the project fails a BCA but passes a financial analysis. This is an important conclusion, suggesting that private investors may purse this project even though it is not in the public interest.[28] This result should focus the state's attention on the specific aspects of the project that cause it to fail the BCA. The project may need to be redesigned to correct these problems, or additional regulations may be needed to reduce negative externalities associated with the project.

In Case 4, the project passes both a BCA and a financial analysis. Public funding would be justified but may not be necessary because the project is attractive to private investors based on the discounted cash flow analysis using market prices.

The European Union requires both a BCA and a financial analysis of investments proposed by member states. The EU's objective is to identify Case 2 investments, that is, those that are attractive in terms of increasing social well-being but would not be undertaken by private investors. In the past, the World Bank also required both a BCA and a financial analysis of investments, but this requirement is now less stringently applied.

A second advantage of doing both a BCA and a financial analysis relates to the pedological value of having these companion studies as inputs to public participation processes. Many participants engaged in a public discourse about a proposed investment or regulation will not be familiar with the difference between a BCA and a financial analysis. Having both analyses will potentially provide the basis for a much richer, more nuanced public discussion, especially if the two analyses differ (Case 2 or 3). Having both a BCA and a financial analysis will also better illustrate the distributional outcomes of the project, which should be a key purpose of public participation processes.

A third reason to conduct both a BCA and financial analysis is because an investment may be partially funded through cash flow that depends on private demand for the project's goods or services. For example, a road or bridge project may be partially funded by revenues from tolls. These prices will affect the demand projections used in the BCA. Thus, a financial analysis may be a prerequisite to the preparation of demand projections required for the BCA.

3.8 | Should ex post BCAs be conducted?

A national BCA system can prepare ex post BCAs to assess the quality and accuracy of ex ante BCAs (Rajaram et al., 2010).[29] The comparison of expected and realized benefits and costs can

[28] Of course, private firms will undertake projects that fail a BC test if the costs are heavily subsidized by the state.

[29] However, Articolo et al. (2025) report that in countries in the European Union, ex post BCAs are rarely done.

yield valuable insights that can improve the preparation of future ex ante BCAs. However, this comparison is not straightforward because any differences may be due to either inadequacies in the original ex ante BCA or to changes that could not have been reasonably foreseen ex ante.

The conduct of ex post BCA is thus much more of a research task than the preparation of ex ante BCAs (Greenstone, 2009).[30] This has two implications. First, the managers of the national BCA team need to plan carefully at the initiation of project implementation for the data collection needed to rigorously conduct the ex post evaluation. Second, the ex ante and ex post BCAs need to be conducted by different teams of analysts. This is not only because the analysts who prepared the ex ante BCA cannot be expected to be unbiased about the quality of their own work, but also because different skills are required.

Even though ex post analyses can be valuable for understanding project success and failure, organizations do not typically place a high value on ex post analysis and evaluation. Organizational units responsible for ex post evaluations tend to employ 'backwater' groups of analysts without the same prestige as analysts engaged with assessing and approving new investments. It may thus be desirable to outsource this task to a research university or think tank that has the research skills and incentive to produce high-quality ex post evaluations.

Ex ante and ex post BCAs represent two somewhat stylized end points on a continuum regarding when it is desirable to carry out BCAs. In practice, analysis is often an iterative process both before an investment is initiated (or a regulation is adopted) and after implementation begins. In itinere BCA can yield valuable insights for project modification or adaptation, thus offering the potential to improve economic efficiency and accountability during the implementation phase (before formal project completion). In the United States, it is not uncommon for a regulatory agency to issue an interim rule while the final rulemaking process continues. BCA analysis is useful to assess both interim and final regulatory rules (Whittington, 2025).

3.9 | How can the quality of BCAs be ensured?

Evidence shows that analysts often systematically underestimate project costs (Cantarelli et al., 2010; Flyvbjerg et al., 2002) and overestimate benefits (Flyvbjerg et al., 2005).[31] Analysis of BCAs conducted to support decision-making in the State of Washington (USA) has shown that project supporters overestimate benefits by approximately 100% (Lee & Aos, 2011; Walker et al., 2017). Because ex ante BCAs attempt to estimate future streams of benefits and costs that are inevitably uncertain, it is easy for both optimism bias and strategic misrepresentation to creep into these forecasts of future conditions (Flyvbjerg, 2008). Strategic misrepresentation can be challenging to uncover, particularly if the BC analyst attempts to conceal their biases in the dynamic baseline, that is, the 'without project' counterfactual (Whittington, 2025).

Because the dual problems of optimism bias and strategic misrepresentation are so pervasive and pernicious, a key question in the design of a national BCA system is how to ensure the analysis is as unbiased and accurate as possible. Articolo et al. (2025) report that few EU countries have centralized procedures to improve the quality of BCAs conducted. An important advantage of a national BCA system is that these problems can be addressed at a systematic level, rather than on

[30] Renda (2016) describes 'an absence of a culture of evaluation inside many national [EU] governments'.

[31] Flyvbjerg et al.'s results may suffer from the winner's curse problem; that is, even if there are symmetric errors in benefit and cost estimates, those projects that overestimate benefits and underestimate costs are more likely to be adopted. This is not necessarily a problem of optimism bias or strategic misrepresentation.

an ad hoc, case-by-case basis. In other words, the institution responsible for managing a national BCA system needs to design and implement a comprehensive approach to minimize these threats to the quality of all BCAs that takes advantage of the economies of scale in tackling these problems of optimism bias and strategic misrepresentation at a system-wide level.

This comprehensive, systemic approach to quality control of BCAs should satisfy two different quality standards. First, to the extent practicable, the quality of the BCAs needs to meet the disciplinary standards of the community of scholars working in the fields of public economics and BCA. This first standard can be considered 'internal quality control' by the technical community of economists best positioned to recognize 'good work' in the field of BCA. BC analysts preparing BCAs for a national BCA system need not explore state-of-the-art issues or work on the frontiers of theory and methods (although occasionally this may be required). However, university scholars and experienced practitioners in the BCA field need to judge that the BCA work of government officials and their consultants is generally sound (unbiased and not overly optimistic) and that the national BCA system is producing competent applications of accepted theory and methods. Professionals conducting BCAs need to be held responsible for the quality of their work. A national BCA system cannot easily weather sustained criticism from the community of BCA scholars.

Second, the quality of BCAs needs to be assessed from the perspective of their intelligibility and relevance for decision-making, not simply their adherence to internal quality standards set by professional economists whose jargon is often undecipherable to the public (MacRae & Whittington, 1997). BCAs produced by a national BCA system should be understandable and perceived as useful by policymakers and government officials ('external quality control'). 'Good work' entails a focus on the key issues public decision-makers care about, as well as clear writing, transparent assumptions and calculations, and the presentation of results in high-quality tables and figures.

These two perspectives on the quality of BCAs may at times pull in different directions, with economists advocating for the incorporation of more sophisticated methods that are not actually needed by policymakers for the decisions at hand. The practical benefits of a national BCA system will often be to ensure that most investment projects are 'basically sound' and that 'white elephants' are identified and called out. As noted above, BC ratios and internal rates of return are always subject to substantial uncertainty because future streams of benefits and costs are never known precisely. Many academic economists are detached from the use of BCA results for practical policy advice and may not appreciate the degree of precision policymakers require for estimates of benefits and costs. Reconciling these two perspectives on the quality of BCAs is the responsibility of the agency charged with the implementation of the national BCA system.

There are four main ways to enhance these dimensions of quality control. First, both the organizational unit responsible for conducting the BCAs and the institution responsible for their review (if they are different) need sufficient budgetary resources to employ skilled, professional analysts, and these analysts need sufficient time to do their work. Second, the quality of BCAs needs to be peer reviewed by the professional community of economists and the users of the BCAs. This also requires budgetary resources. Third, in most situations, quality control will be strengthened by transparency and public review (HM Treasury, 2022). Transparency can be enhanced by (1) requiring that a BCA include technical appendices that allow an external analyst to replicate analysis and (2) reducing the costs to the public of accessing the analysis (Weimer & Vining, 2001). Especially for large, controversial public decisions, the government agency assigned responsibility for managing the national BCA system should provide opportunities for the public to review and comment on draft BCAs before the analyses are finalized.

Fourth, an important quality-control issue for designers of a national BCA system is delinking the preparation of BCAs from the government's annual budgetary process. The quality of

BCAs will be enhanced if they are conducted in advance of annual budgetary decisions. Analysts need time to prepare well-executed BCAs. The Ministry of Finance should have a set of carefully appraised investments that have been approved for financing. If BCAs are carried out as part of an annual budget cycle, they likely will be rushed and subjected to undesirable political pressures. This separation of BCA from the annual budget cycle is likely one of the reasons for the success of the Chilean national BCA system.

3.10 | How is public support established and secured?

The challenge of building and maintaining broad public support for a national BCA system deserves careful thought by the system's designers. In the long run, public support for a national BCA system will depend on the perception that BCAs are objective and 'reasonably' accurate so that over time the benefits of the system flow to the public. However, threats to the integrity of the BCA system can come from various directions and can be hard to thwart.

Sometimes key members of the executive or legislative branch may take a position on a public investment or proposed regulation before the BCA is completed, possibly to influence the analyst. Private parties affected by a public decision may try to lobby analysts. Government officials may argue for the selective application of BCA guidance to influence the results. All of the possible remedies generally used to reduce corruption (e.g., disclosure of conflicts of interest) are relevant. Transparency, public review and review by academic experts (see Section 3.11) are important measures to reduce inappropriate attempts to bias a BCA and to ensure continuing public support.

Experience to date suggests that maintaining support for a national BCA system can be difficult. For example, in the United States in 2025, the Trump Administration rescinded many environmental and public health regulations without conducting RIAs. OMB's BCA system for the evaluation of major federal regulations should have required that RIAs be prepared for such deregulation actions. Public reaction to deregulation actions without BCA has been virtually nonexistent, suggesting little public awareness and support for the federal government's BCA system. In the international arena, the World Bank was initially a strong proponent for the use of BCA (Jenkins, 1997), but its gradual abandonment has received little external commentary (see Leff, 1985; Little & Mirrlees, 1991 for exceptions).

Some of the options for improving the quality of BCAs may also build public support, for example, opportunities for public comments and discussion, transparency and documentation of analysis. The public relations and media offices for government institutions may publicize efforts to improve government efficiency. More broadly, the adoption and extension of financial markets and financial literacy training may help members of the public better appreciate what the government is trying to accomplish with the establishment of a national BCA system.

3.11 | What is the relationship between the national BCA system and universities?

A national BCA system needs an active, ongoing relationship with local universities. An important design question for government officials and university administrators is how to structure and maintain this relationship. Local universities are a conduit for future employees of a national BCA system. Government thus needs to ensure that high-quality BC courses are taught at local universities and that students are encouraged to take them. There are numerous possible ways

this can be done. These include offering scholarships to students specializing in BCA, prizes for the best thesis or project in the field of BCA, and government internships for students. Government officials can offer to work with university faculty to develop case studies of local investment projects for classroom use and to give guest lectures in university courses.

But local universities can do more than just provide future staff for a national BCA system. Government agencies responsible for BCA need ways to keep up to date on the theory and methods of BCA, as well as new empirical research findings relevant to their work. Local faculty can offer mid-career government officials opportunities for advanced training and thus a pathway to career advancement. Local universities can also provide short-term, executive training programs, perhaps partnering with international BCA scholars, on new developments in the BCA field. Executive training courses for government analysts will be most effective when university faculty have actual experience conducting BCAs for government investments and regulations. It is thus in the government's interest to engage faculty as consultants who assist with project appraisals, as well as teachers in executive training programs. For their part, universities can offer adjunct professorships to senior government officials to assist with teaching about the practice and real-world challenges of conducting BCA and using the results in national government decision-making.

Faculty at local universities will themselves benefit from these linkages with the national BCA system. They can serve as consultants for both external reviews and as members of teams responsible for conducting BCAs. Faculty at local universities may benefit from serving as facilitators for relationships between the national government and international BCA scholars. Universities increase their reputation when they place their students in good jobs. Fostering these kinds of symbiotic relationships between government and local universities should be a mission of both government officials responsible for a national BCA system and university administrators.

There is, however, a downside to relying too much on universities. There may be an insufficient number of university faculty who are willing to specialize in the theory and methods of BCA. Moreover, university faculty may not be able to provide the institutional memory of the national BCA system necessary to effectively offer this external guidance. An alternative could be an independent expert panel to provide quality control functions such as ex post analysis of BCAs, the review of guidance documents and the design of BCA training programs. This expert panel could include university faculty but would not be dependent on university administration to carry out its work. In the United States, EPA has used Scientific Advisory Panels for a similar purpose. In LMICs members of such an expert panel would need to be well remunerated for it to function effectively.

3.12 | Dealing with transboundary consequences

Some public investments and regulations have consequences (positive and negative) that extend beyond a nation's borders. For example, dams on international rivers affect other riparian states.[32]

[32] Even dams built by downstream riparians may affect upstream riparians by precluding investment options. For example, writing in 1961 to Mohammad Ayub Khan (then President of Pakistan), Jawaharlal Nehru, the Prime Minister of India, said … 'One more matter to which I must also refer, is the distinction you still seem to make between the rights of the upper and lower riparians in paragraph 7 of your letter, which implies that the lower riparian can proceed unilaterally with projects, while the upper riparian should not be free to do so. If this was to be so, it would enable the lower riparian to create, unilaterally, historic rights in its favor and go on inflating them at its discretion thereby completely blocking all development and uses of the upper riparian. We cannot, obviously, accept this point of view, especially when three fourths of the length of the Ganges lies in Indian territory, which gives India the priority in this river'.

Air pollution regulations in one country may result in improved (or degraded) air quality in a neighbouring country.[33] One country's efforts to reduce CO_2 emissions benefit people globally. How should such transboundary effects be incorporated in the BCAs conducted as part of a national BCA system?

The fundamental question at issue is who has 'standing' in the BCA, that is, whose benefits and costs should count in the analysis (Whittington & MacRae, 1986). Policymakers' primary interest typically will be to understand how public investments and regulations will affect the citizens of their country, but effects on foreigners will also be relevant, but for somewhat different reasons. For large countries and for countries with few international boundaries, whether foreigners have standing may seem like a minor issue. However, for many smaller countries, especially in the Global South, transboundary effects are both common and important. Moreover, for both large and small countries, public investments and regulations may have trade and migration implications, which will be a concern to policymakers.[34]

It is also possible that multiple countries in a region are considering similar types of investments (e.g., hydropower developments on a shared river). Analysts in neighbouring countries could work together to jointly develop a set of coordinated investment alternatives. BCA could show that the net benefits of regional investment plans would be greater than the sum of individual country projects.

Transboundary effects are especially relevant for international relations, and thus a country's foreign ministry has a strong interest in understanding how possible public investments and regulations affect neighbouring countries. A knowledge of transboundary effects may help the Foreign Ministry craft benefit-sharing deals with neighbours, as well as anticipate reactions from countries that are adversely affected by transboundary consequences (Etichia et al., 2024).[35]

This question about how to incorporate transboundary effects may seem like a technical issue that can be addressed after a national BCA system is established. However, there are two reasons why it may be desirable to deal with it during the initial design stage. First, a national BCA system needs a formal mechanism to alert senior policymakers when a public investment or regulation under consideration by a specific line agency is likely to have significant transboundary consequences. The Foreign Ministry should be engaged early on in thinking about such projects and not be blindsided late in the process. Similarly, analysts should alert the Foreign Ministry when a project in another country will affect them. Working with the Foreign Ministry, BCA analysts may be able to propose modifications to a project in a neighbouring country (or alternative investments) that would lead to better overall outcomes for both countries. Second, analysts should be made aware of transboundary issues and given guidance on how to handle these. As with other analytic assumptions that are common across many BCAs, it should not be left to individual analysts to decide whether foreigners have standing.

[33] Land clearing and burning activities in Indonesia, especially for palm oil plantations, have led to serious air pollution (haze) in Singapore. Indonesian efforts to control burning 'hotspots' would reduce air pollution not only in Indonesia but also in Singapore.

[34] The US Environmental Protection Agency reflected on such transboundary issues in its discussions of the social cost of carbon. See: https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf

[35] In its Circular No. A-4 (9 November 2023), the United States Office of Management and Budget advises BC analysts, 'Relevant effects also include the effects of a regulation on US strategic interests, including the potential for inducing strategic reciprocity or other policy changes from actors abroad, or effects on US government assets located abroad. Such effects are particularly likely to occur when your regulation bears on a global commons or a global public good'. (p. 8).

Analysts need to be aware that transboundary consequences pose two special challenges for a national BCA system. First, analysts may not have access to the information on neighbouring countries that is needed to estimate benefits and costs that fall outside national borders. Second, foreign ministries may not want to reveal the consequences of national policies on neighbouring countries to these countries. Especially if there are ongoing negotiations, secrecy may be desirable. This is precisely the opposite of the objective of BCA to promote democratic discourse about the consequences of public investments and regulations within a country.

In most cases in which transboundary consequences are important, analysts should present two sets of BC calculations: one that only reports benefits and costs to citizens of the country, and one that reports benefits and costs to all people affected by the investment or regulation, regardless of where they live. For example, the United States Office of Management and Budget's Circular No. A-4 (9 November 2023) offers BC analysts the following advice: 'To better inform policymakers and the public of the effects of your regulation, it may be appropriate to also analyze effects on noncitizens residing abroad in a supplementary analysis when your primary analysis focuses on the effects on US citizens and residents'. (p. 8).

4 | STRATEGIES FOR ESTABLISHING A NATIONAL BENEFIT–COST ANALYSIS SYSTEM

A country that wishes to establish a new national BCA system usually will face three main obstacles: (1) lack of political support, (2) lack of support from policy scholars and (3) lack of resources, both human and financial. First, the lack of political support arises because a national BCA system may threaten vested interests and existing political power to make investment and regulatory decisions. A national BCA system also creates a new focus of information and analysis and thus creates uncertainty for existing political interests.

Second, any proposal for a national BCA system will not only face resistance from elements of the political establishment but also opposition from communities of scholars in disciplines opposed to its use. There is a huge literature spanning decades on the moral and ethical problems associated with BCA. Most of this criticism is focused on the normative use of BCA, that is, its utilitarian foundations, not on the empirical outcomes that would result from the adoption of a national BCA system. The ethical controversies about the use of BCA have not diminished after decades of debate. Advocates for a national BCA system should anticipate this opposition and recognize that many opponents of conducting BCA presumably would probably have less objection to the use of BCA for positive analysis and for the provision of information to promote democratic discourse.

Third, a national BCA system requires human and financial resources. Both of these may be limited, especially in some countries in the Global South.

Advocates for establishing a national BCA system will need a strategy to overcome all three obstacles. This strategy will often have two main dimensions: (1) time frame for scaling up the system ('go slow and see how things develop' vs. 'rapid adoption') and (2) the audience for the results of the system (input for technocratic decision-making vs. input for broad public discourse). Decisions regarding these two dimensions are important for overcoming all three obstacles. For example, it may be impossible to reach a consensus on adopting a comprehensive national BCA system such as that used in Chile, but there may be enough political and scholarly support for a national system that would produce a limited number of high-quality BCAs for input to democratic discourse. Alternatively, a window of opportunity may open to immediately establish a

TABLE 3 Strategic approaches for establishing a new national benefit–cost analysis (BCA) system.

	BCA results designed for government decision-making	BCA results designed as input for public discourse
Rapid adoption of master plan	Case A	Case B
'Go slow—learning by doing'	Case C	Case D

comprehensive BCA system, the results of which could be used to support both government budgetary decisions and broad public discourse.

Table 3 shows the four cases resulting from the combinations of these two different dimensions. In Case A the government fully commits to establishing a national BCA system. The primary audience for the results of the BCAs conducted is the state itself, that is, the government officials responsible for making the decisions regarding public investments and regulations. This approach has two main advantages. First, the benefits of the national BCA system in terms of selecting investments and regulations with high returns can be achieved quickly. Second, a full, comprehensive BCA system can be established when a window of political support opens up.

In Case B, the primary audience for the results of the BCAs conducted is the public. The state is less concerned with the actual outcome of a specific investment and more focused on the democratic legitimacy of the process and the full inclusion of different parties in decision-making. Here the time required for clear and transparent communication of the BCAs conducted and the processes used to listen and synthesize different viewpoints may take precedence over perceived technocratic issues. Still, in Case B the state is fully committed to the new BCA national system and moves quickly to establish the public participation processes.

In Case C, the state is focused on the development of a national BCA system that selects investments with high social returns but decides to proceed slowly. The advantages of this approach are that the government can deploy its limited human and financial resources to experiment and learn how best to design the system from practical experience (Greenstone, 2009).

In Case D, the state is focused on how best to use the results of the BCAs to promote public discourse and may select the initial projects (regulations) to analyse to learn how best to do this. Again, the advantage comes from experimentation and learning by doing. The first few BCAs may be used as inputs to experiment with different public participation processes.

There are no clear boundaries between these four cases. However, this simple typology illustrates that there are different visions for a new national BCA system, and advocates need to decide on the strategic direction in which to proceed.

This strategic direction will guide how the designers of a national BCA system will answer the 12 questions described above. The columns in Table 4 are the 4 strategic directions, and the rows are the 12 design decisions. The stars (*) in the cells indicate the relative importance of the design question for the strategic direction in a particular column. Three stars (***) indicate that the design question is especially important for the strategic direction associated with the column. Two stars (**) suggest moderate importance, and one star (*) suggests less importance.

The pattern of stars presented in Table 4 highlights three important considerations for designers of a national BCA system. First, if a 'go slow' strategic direction is adopted for either government decision-making (Case C) or public input (Case D), how some questions are answered is less important because designers can experiment and make adjustments. But this is not true for all design questions. For example, design question 1 (What is the legal foundation of the system?) is likely to be immediately important for all four strategic directions. Similarly, for Case D (input for public discourse; go slow), even though the 'go slow' approach allows for experimentation

TABLE 4 Design designs and strategic approaches.

No.	Design question	Case A: Government decision-making; rapid adoption	Case B: Input for public discourse; rapid adoption	Case C: Government decision-making; go slow	Case D: Input for public discourse; go slow
1	What is the legal foundation of the system?	***	***	***	***
2	What public decisions are evaluated?	***	***	**	***
3	What agency is assigned responsibility for the national BCA system?	***	*	**	*
4	Who should conduct the ex ante BCAs?	***	**	*	*
5	When should ex ante BCAs be conducted?	**	***	*	***
6	What guidance should be provided to BC analysts?	***	***	*	*
7	Should both a BCA and a financial analysis be conducted?	***	***	*	***
8	Should ex post BCAs be conducted?	***	***	*	*
9	How can the quality of BCAs be ensured?	***	***	***	***
10	How is public support established and secured?	***	***	**	**
11	What is the relationship between the national BCA system and universities?	**	*	*	*
12	Dealing with transboundary consequences	**	**	*	*

***Question is especially important for this strategic direction.
**Question is moderately important for this strategic direction.
*Question is less important for this strategic direction.

and adaptation, some design questions are especially important at the time of the establishment of the national BCA system because they are likely crucial for providing inputs for successful experimentation with conflict resolution mechanisms (e.g., Questions 2, 7 and 9).

Second, if a 'rapid adoption' strategic direction is adopted for either government decision-making (Case A) or public input (Case B), most of the 12 questions demand careful consideration at the start of the design process, but perhaps not all. For example, design question 11 (What is the relationship between the national BCA system and universities?) can be postponed somewhat. For Case B (rapid adoption, public input), design question 3 (What agency is assigned responsibility for the national BCA system?) and question 4 (Who should conduct the BCAs?) will have to be answered but are perhaps of less importance from the perspective of public participation.

The cell entries in Table 4 are simply subjective assessments that are best considered as a thought experiment for designers of a national BCA. How designers answer these 12 design questions will depend on the strategic direction they choose and the political and financial realities that they face. The timing and sequencing of answers to these 12 design questions will be context-specific.

5 | CONCLUDING REMARKS

Since the publication of Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), economists have been proponents of specialization. By concentrating their time and skills on what they are relatively best at, people can benefit from the gains from trade. What does the public think economists are good for? that is, what is their comparative advantage? First, the public wants economists' insights and skills on macroeconomic stabilization and monetary policy, inflation and unemployment. The public would like forecasts of where the economy is headed but are rightly sceptical about the accuracy of macroeconomic forecasts of economic activity.

Second on the public's list is probably the application of economists' skills to identify attractive public investments and regulations, that is, to assist government in selecting interventions for which the benefits exceed the costs.[36] Moreover, in times of fiscal stress, economists may be called on to help identify those public investments and regulations with the lowest rates of return that can be most easily cut from the budget. I believe that the establishment of a national BCA system is a critical component in meeting public expectations of the contributions economists can make to social well-being. Yet currently BCA has not been systematically integrated into most governments' decision-making processes (Articolo et al., 2025). One might expect that economists would be enthusiastic about using their skills to design and support a national BCA system to identify projects and regulations with high returns that increase social well-being and to provide information to promote democratic discourse. However, a casual perusal of recent papers published in the top economic journals suggests that BCA in general and the establishment of a national BCA system in particular are not currently research priorities of the economics profession.

Much of the knowledge required to design and support a successful national BCA system is non-rival. If Ethiopia were to establish a national BCA system for identifying investments with high returns, this would not reduce the opportunity for Vietnam to have one as well. Indeed, the more

[36] E. J. Mishan (1981, 1982) postulated that there exists a 'virtual constitution' in most societies in support of a benefit–cost criterion. Subsequently, Mishan (1988) changed his mind about this idea of a 'virtual constitution', but his original position continued to receive support.

LMICs that establish national BCA systems, the more experience and evidence will be created, and the better all of them can become. Of course, the financial costs of creating an institutional home for a national BCA system and employing staff must be incurred, but this is a small price to pay for the ability to invest in high-return public investments and provide valuable inputs for democratic discourse regarding the consequences of public investments and regulations.

The human resources and financial requirements of establishing and operating a national BCA system can appear formidable to government officials in LMICs. However, generative AI offers new opportunities to both (1) reduce the costs of designing and operating a national BCA system and (2) enhance the benefits of deploying a national BCA system. The use of generative AI by a national BCA system is an important area for future research.

Generative AI holds out the promise to assist in the design and operation of a national BCA system in three main ways. First, AI can assist managers and analysts with a myriad of specific, relatively routine tasks that are part of running a national BCA system. These include the following:

1. drafting memos to line agencies;
2. searching the literature for recent research on specific topics;
3. preparing reviews of draft BCAs from line agencies;
4. checking the calculations in BCA spreadsheets;
5. reviewing and drafting guidance documents for preparing BCAs; and
6. searching for new, updated information on key model parameters.

Generative AI should thus increase the productivity of both managers and analysts (Schneier & Sanders, 2025).

Second, generative AI may provide analysts with new insights into how to conduct a BCA. This may include new ideas about how to design research to estimate costs and benefits—or to estimate the counterfactual (Wu et al., 2025). Generative AI results may reveal approaches to use or combine available data sets in ways that an analyst had not considered. These insights are likely to be especially important for new, inexperienced BC analysts.

Third, generative AI raises the possibility that BCAs can be both improved and at least partially automated. In other words, in the future, a large language model may be able to produce a BCA of a public investment or regulation that is 'better' than one produced by a team of government analysts and their consultants. For example, generative AI may be able to make progress towards the inclusion of general equilibrium effects in the results of BCAs, an area of practice where progress has been slow (see Carbone & Smith, 2008 for an exception). This possibility that BCAs can be generated with limited human assistance is admittedly speculative at present but should not be casually dismissed. Chatbots can already design spreadsheets, tables and figures. They also currently can be used to conduct standardized sensitivity analyses. They can search the literature for parameter values commonly used by other BC analysts.

All three increasingly sophisticated ways of using generative AI in the design and operation of a national BCA system would depend on the development of a dedicated BCA chatbot that is trained with

1. BCA studies from existing national BCA systems and the scholarly literature;
2. guidance documents from existing national BCA systems; and
3. the scholarly literature on the theory and methods of BCA (e.g., papers published in the *Journal of Benefit Cost Analysis*).

A specialized BCA chatbot could be used to review and critique a new BCA.[37] Members of the public could use a specialized BCA chatbot to better understand the assumptions and calculations used in a new BCA or the significance of new findings reported in the scholarly literature.

The creation of a specialized, open-access BCA chatbot would be a public good in the sense that use by one country would not reduce the ability of another country to use it. If Egypt used a dedicated BCA chatbot, this would not reduce Colombia's opportunity to use it too. Indeed, the more it was used, the better trained it would become. It seems likely that a dedicated BCA chatbot could push the practice of BCA relatively quickly towards at least partially automated BCAs—with limited human guidance beyond an initial request and a final review of results. It is currently unclear who would fund a dedicated BCA chatbot and its appropriate institutional home. However, there are numerous possibilities, including the Society for Benefit Cost Analysis or other professional associations and independent research organizations.

For many LMICs, a limiting factor in being able to establish an effective national BCA system is likely to be the availability of government officials with the expertise and analytical skills required to conduct BCAs. Generative AI promises to relax this constraint. Also, a dedicated BCA could be trained to reduce 'optimism bias' and strategic misrepresentation of BCA results.

In addition to the use of generative AI, another important area for future research is the political processes required for the establishment of a national BCA system and approaches to overcome common obstacles, such as bureaucratic inertia, limited technical capacity and funding constraints.

In conclusion, to live up to its promise, a national BCA system must avoid three major pitfalls. The first is to maintain the saliency of the results of BCAs in the political process. If BCA becomes just an administrative hurdle in a bureaucratic protocol, its contribution to decision-making will be minimal. In a well-designed national BCA system to evaluate public investments and regulations, the decision to carry out a BCA is not ad hoc, and its results are harder to ignore.[38] The second is excessive bureaucratization of the process of evaluating public investments and regulations. This will lead to delays that diminish the usefulness of the results of BCAs. The third is the intentional manipulation of the estimates of benefits and costs to achieve desired results. Generative AI may assist managers of national BCA systems to minimize these risks. More broadly, generative AI promises to enhance a government's ability to run a successful national BCA system, but learning precisely how to do this is in its infancy.

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[37] Some journal editors are now using chatbots to provide a preliminary assessment of submitted manuscripts. A specialized BCA chatbot could be used in a similar fashion by government officials responsible for reviewing BCAs. Generative AI is also being used to generate fraudulent academic papers (see Resnik et al. 2025; Richardson et al. 2025).

[38] From this perspective, the establishment of a national BCA system can be viewed as a component of a strategy by applied economists to be 'advocates for economic efficiency'. The decision to establish a national BCA system is similar in some respects to J. Elster's (1979) reflections on Ulysses and the Sirens, but in this case the decision to establish a system binds the government and the public to look at the results of BCAs (not look away).

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