



## Cost-effectiveness and cost-benefit analysis of governance and anti-corruption activities

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# Contents

|                                                                                                                             |           |
|-----------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Abstract.....</b>                                                                                                        | <b>iv</b> |
| <b>Acknowledgements.....</b>                                                                                                | <b>iv</b> |
| <b>1. Use of cost-analysis approaches to inform policy in developing countries:<br/>Possibilities and limitations .....</b> | <b>1</b>  |
| 1.1. Expanding opportunities to use cost analysis in governance and anti-corruption.....                                    | 2         |
| 1.2. A brief explanation of cost-analysis approaches: Differences between CEA and CBA.....                                  | 3         |
| <b>2. A framework for the use of cost-analysis approaches<br/>to appraise and evaluate anti-corruption activities .....</b> | <b>7</b>  |
| 2.1. Measuring benefits .....                                                                                               | 8         |
| 2.1.1. Direct valuation and measurement .....                                                                               | 9         |
| 2.1.2. Indirect valuation.....                                                                                              | 10        |
| 2.2. Measuring costs .....                                                                                                  | 14        |
| 2.3. Comparisons and ratios: Beware the limitations of the analysis .....                                                   | 16        |
| 2.4. Supporting the decision on which interventions are suitable and which are not .....                                    | 18        |
| 2.5. Summary.....                                                                                                           | 22        |
| <b>3. Integrating cost-effectiveness analysis methods with impact evaluation designs .....</b>                              | <b>23</b> |
| <b>4. Conclusion.....</b>                                                                                                   | <b>27</b> |
| <b>References .....</b>                                                                                                     | <b>29</b> |

## Abstract

Cost-effectiveness and cost-benefit analysis methods are currently underutilised in evaluations of governance and anti-corruption reforms in developing countries. This limits opportunities to inform policy and may lead to suboptimal reform choices and programme designs. In general, complicated interventions such as national anti-corruption strategies or anti-corruption agencies do not lend themselves easily to cost-analysis approaches, often due to the challenge of measuring the impact in terms of reduced corruption. However, cost-effectiveness analysis – and in some cases cost-benefit analysis – of sector programmes with inbuilt anti-corruption measures is a useful tool for guiding decision makers as they choose between alternative integrity measures and assess the return on investment. Cost-benefit analysis hinges on an ability to translate outcomes into a monetary value, something most feasible with public finance-related interventions. Where outcomes cannot be monetised, there are still opportunities for cost-effectiveness analysis. Two impact evaluation designs are presented that make use of cost-effectiveness analysis to overcome corruption measurement challenges. Using such designs, the value of anti-corruption activities can be evaluated even without measuring corruption.

## Acknowledgements

The idea for this paper came when I first met Harald Mathisen (Norad) at the Cambridge International Symposium on Economic Crime. It would take four and a half years to transform the idea into this document. Throughout this period, I realised that although there was merit in producing a paper that focus on removing technical challenges, there was an equally relevant need to address policy issues to promote more and better use of cost analysis studies in the field of governance and anti-corruption.

Early on, I was fortunate to learn from conversations with Iqbal Dhaliwal, Conner Brannen and Juan Cristobal Marshall from J-PAL's Governance Initiative, who had just published a paper on cost-effectiveness analysis focussing on the education sector. CMI colleagues Ottar Mæstad and Arne Wiig graciously lent me their time and provided important formative inputs. Conversations with U4 colleagues and Francesca Recanatini from the World Bank helped fine-tune the messages to the relevant audiences.

I would especially like to thank the reviewers of this paper, Michael Bamberger, Conner Brannen, Ben Broeckx, Odd-Helge Fjeldstad, Elizabeth Hart, and Rick Messick, who provided excellent advice. Any remaining weaknesses in the paper is my own responsibility.

# 1. Use of cost-analysis approaches to inform policy in developing countries: Possibilities and limitations

Cost-effectiveness analysis (CEA) and cost-benefit analysis (CBA), which take into account the cost as well as the impact of programmes being evaluated, are methods that have long provided useful policy guidance in many sectors. They can inform choices between alternative strategies for reaching a policy goal (appraisal) or provide a basis for judgement on which interventions have worked best relative to costs (evaluation). Methodologies for undertaking such cost analysis are well established in areas like construction, transport, health, and education (Levin and McEwan 2001).<sup>1</sup> So far, however, no systematic attempt has been made to tailor these methodologies for use with governance and anti-corruption activities or to consider the applicability of CEAs versus CBAs for different interventions.

One reason may be that the donor community has been preoccupied with proving the impact of their interventions. This has been useful, but unfortunately *attention to the cost side of the equation has lagged*. Policymakers have invested in expensive reforms because they showed results in the past, without the information to consider whether cheaper alternatives might achieve the same outcomes. Conversely, cynics have sometimes been able to dismiss reforms and initiatives of proven impact on the grounds that they are too costly. Neither costs nor benefits alone tell the complete story. The focus should be on the cost-effectiveness of interventions, and the inclusion of a cost analysis is essential when one is considering value for money. Measurement of results remains essential to both methods, differing in whether the results are measured in monetary terms (CBA) or with other indicators (CEA).

Today, policymakers have limited guidance on when and how it is cost-effective to invest in corruption risk management. We need to improve the global body of evidence on transparency, accountability, integrity, and anti-corruption (Olken and Pande 2013; Johnsen, Taxell, and Zaum 2012; McGee and Gaventa 2010; Kolstad, Fritz, and O'Neil 2008). The current evidence gap is partly due to the difficulty of comparing highly diverse programmes that are implemented in different contexts and in different time periods. But this is a universal challenge for all sectors. A more salient reason is that evaluation methods in the field of governance and anti-corruption are underdeveloped and underutilised compared to those in most other sectors (Hanna et al. 2011, 6; Johnsen and Søreide 2013). The challenge of measuring corruption also plays a part, but less than traditional wisdom dictates.

Neither CBA nor CEA is a panacea that can fully resolve the present evidence gaps and measurement challenges. All appraisal and evaluation methods have limitations, and there are particular pitfalls for the unwary when using CEA or CBA methods. This paper presents both the possibilities and limitations of these methods with a view to promoting their use in appropriate areas and deterring their use in inappropriate areas. It is intended for evaluators, governance and sector specialists, and project managers

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<sup>1</sup> Cost-analysis approaches have, as part of their development, been subject to relevant critique regarding their use and misuse by regulatory authorities. See, for example, Baram (1979), Nussbaum (2000), Frank (2000), and Adler and Posner (2006).

who want to integrate cost analysis in appraisals and evaluations to account for benefits of individual anti-corruption measures or packages of measures. Policy makers can use the paper to promote the use of these methods and to decide where they are feasible and appropriate. They may also benefit from advice on how to use the results of cost-analysis studies in decision making.

The rest of the paper is structured as follows. The remainder of section 1 distinguishes between the two main cost-analysis approaches considered here and notes developments that have increased the potential for their application in the anti-corruption field. Section 2 discusses when and how benefits and costs can be reliably measured and identifies the possibilities and limitations for the application of CEAs and CBAs in the field of governance and anti-corruption. Section 3 illustrates how CEA methods can be used within a larger impact evaluation design to compare cost-effectiveness of governance and anti-corruption interventions in sector programmes. A summary of the main points of the paper is presented in section 4.

## 1.1. Expanding opportunities to use cost analysis in governance and anti-corruption

There are unexploited possibilities for the use of cost-effectiveness analysis and cost-benefit analysis in the field of governance and anti-corruption. Three recent developments have increased both the value and applicability of these specialised evaluation methods.

First, there is *more focus on mainstreaming, less on direct anti-corruption interventions*. The mainstreaming agenda, which integrates anti-corruption objectives and methods into sector programmes such as health and education, has gained prominence in recent years (Campos and Bhargava 2007). This has opened up opportunities for evaluation designs using CEA in particular, as the benefits of indirect anti-corruption interventions integrated in sector programmes are easier to identify and isolate. CBAs and CEAs are already done, for example, in health programmes, but not with a focus on the costs and benefits of integrity initiatives.

Second, *a more granular understanding of corruption and anti-corruption is emerging*. There is greater appreciation of the need to break down the overall concept of an “anti-corruption intervention” into distinct components.<sup>2</sup> Rather than thinking about costs and benefits of anti-corruption as experienced by whole countries, measured via aggregate indicators such as Transparency International’s Corruption Perceptions Index, it is more useful and precise to measure the benefits of specific interventions (at the project, programme, or sector level) through outcome-level indicators that may or may not be translated into a monetary value.

Third, *better indicators and measurement tools are becoming available*. New, more experience-based corruption measurement tools have added useful complementary data sources for assessments of anti-

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<sup>2</sup> For an example, see Johnson, Taxell, and Zaum (2012, 2).



corruption effects to older forms of expert-rating or perception-based measures.<sup>3</sup> Better indicators and data improve the foundation for measurements of benefits.

These three developments increase the feasibility of applying CEAs and CBAs to evaluate anti-corruption interventions. Areas such as crime prevention and education have already gone through similar development: as data availability and quality improved and techniques for measuring outcomes were refined, use of CBAs and CEAs became more frequent in those fields (Cohen 2000; Levin 2001).

## 1.2. A brief explanation of cost-analysis approaches: Differences between CEA and CBA

There are various cost-analysis approaches, but this paper focuses on the two principal ones: cost-effectiveness analysis and cost-benefit analysis. While these methods are closely related, they serve different purposes and are conducted in different ways:

- *Cost-effectiveness analysis* compares the costs of alternative ways of producing the same or similar outputs.
- *Cost-benefit analysis* quantifies in monetary terms as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value (HM Treasury 2003, 4).

Both methods assess the value for money of a project, programme, or policy (often called “interventions”). CBA has received the most attention, but CEA is an increasingly popular tool and in some cases is more intuitive. Both are used to appraise and/or evaluate the benefits of an intervention compared to its costs. The main difference is that whereas CEA compares costs to an overall effectiveness measure, such as numbers of ghost workers or absenteeism rates, CBA translates benefits into monetary terms (Boardman et al. 2006).

CEA is often used where benefits are difficult to monetise. It is a tool for selecting among alternative interventions that target the same outcome.<sup>4</sup> *For CEA, the main challenge is to find and compare alternative interventions pursuing the same units of effectiveness.*<sup>5</sup> A unit of effectiveness could be the

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<sup>3</sup> Kaufmann (1997) and Reinikka and Svensson (2001, 2003) provide good early overviews. Button et al. (2012), Sequeira (2012), and Olken and Pande (2013, 45–53) provide recent overviews of different corruption measurement methods. For more literature on survey designs and bias, see Clausen, Kraay, and Murrell (2011), Banerjee, Hanna, and Mullainathan (2009), and Olken and Pande (2012). For good discussions on the difference between perceptions-based and experience-based indicators, see Olken (2009), Heller (2009), Razafindrakoto and Roubaud (2010), and Heinrich and Hodess (2011).

<sup>4</sup> In the case of multiple objectives, one could use weighted cost-effectiveness analysis, which gives weights to objectives to measure their priority (European Commission 2013, 29; Levin 2001, 19–22).

<sup>5</sup> A unit of effectiveness is a measure of any quantifiable outcome central to the programme’s objectives. The cost-effectiveness ratio is calculated by dividing total costs by the units of effectiveness (Cellini and Kee 2010, 493–94).

number of ghost workers, the number of victims of corruption, the perceived level of integrity of an individual department, the percentage of citizens aware of an anti-corruption initiative, and so forth. A CBA establishes one financial value estimate for an intervention that can be compared across sectors and contexts, and across alternative interventions. *For CBA, the main challenge is how to monetise benefits.* Both methods are mainly valuable as comparative exercises, but whereas the results of a CBA can stand alone as an absolute judgement of the return on investment, CEAs can only judge an intervention relative to others. The main characteristics of and differences between CEA and CBA are described in table 1.

**Table 1.**

**Characteristics of and differences between cost-effectiveness and cost-benefit analyses**

| Type of analysis       | COST EFFECTIVENESS                                                                                                                                                                              | COST BENEFIT                                                                                                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analytical question(s) | Which alternative yields a given level of effectiveness for the lowest cost – or the highest level of effectiveness for a given cost?                                                           | Which alternative yields a given level of benefits for the lowest cost – or the highest level of benefits for a given cost?<br><br>Are the benefits of a single alternative larger than its costs? |
| Cost measure           | Monetary value of resources                                                                                                                                                                     | Monetary value of resources                                                                                                                                                                        |
| Benefit measure        | Units of effectiveness                                                                                                                                                                          | Monetary value of benefits                                                                                                                                                                         |
| Strengths              | Easy to incorporate standard evaluations of effectiveness<br><br>Useful for alternatives with a single or small number of objectives                                                            | Can be used to judge absolute worth of a project (in contrast to CEA)<br><br>Can compare results across sectors                                                                                    |
| Weaknesses             | Difficult to interpret results when there are multiple measures of effectiveness<br><br>Cannot judge absolute worth of a single alternative: only useful for comparing two or more alternatives | Often difficult to place monetary value on all relevant benefits                                                                                                                                   |

*Source:* Levin and McEwan 2001, 27–28.

CEA does not include people's individual preferences, which a CBA can measure by using, for example, surveys on people's willingness to pay for a good (e.g., clean air or honest government) or their willingness to accept payment of a certain amount to put up with something negative (e.g., pollution or corruption). Moreover, CEA traditionally focuses on one outcome, whereas CBA can aggregate the benefits of a variety of outcomes, including indirect benefits, as long as they can all be translated into

monetary terms.<sup>6</sup> For CEA, only programmes with similar objectives can be compared, and a common measure of effectiveness must be used to assess them. Although CEA can be a more intuitive and straightforward tool for evaluating the cost-effectiveness of a number of alternative anti-corruption activities within the same sector and context, CBA methods allow policymakers to appraise the value for money of anti-corruption activities both within the sector and as compared to other sectors, as well as to incorporate the preferences of individuals in the valuation.

Both types of cost analysis can be done as ex ante appraisals or as ex post evaluations. Ex ante studies are useful as tools at the policy formulation stage. They aim to predict the value of an initiative before implementation, and thus they rely more on assumptions than ex post studies, which aim to assess the actual cost-effectiveness or cost-benefit profile of a reform or programme that has already been implemented. Box 1 provides an example of an ex post CBA. A particular problem for governance and anti-corruption interventions is that the body of ex post cost-analysis studies is not large enough to inform corruption risk management and ex ante studies. Most efforts and resources go into ex ante cost analysis in the early stages of the project cycle, whereas rigorous ex post programme evaluations are rarely done.

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<sup>6</sup> Unlike CEA, which is based on the marginal differences between interventions, CBA analyses the total costs versus the total benefits to show the overall net benefits. CBA is also better able to integrate individual and cultural preferences by measuring people's willingness to pay for benefits. This could reveal that while some interventions might be very cost-effective, the community would likely oppose them for various reasons. This is important information for the project design.

**Box 1. Ex post CBA of auditing village roads in Indonesia**

A study of over 600 Indonesian village road projects found that increasing government audits from 4 percent to 100 percent of projects reduced “missing expenditures,” as measured by discrepancies between official project costs and an independent engineer’s estimate of costs, by 8 percentage points. By contrast, increasing grassroots participation in monitoring had little average impact. Therefore, the CBA was done just for audits.

Costs were calculated as follows:

- Monetary cost of the audits = actual cost paid by the project per audit, including auditors’ salaries
- Associated deadweight loss = increased taxes required to pay the monetary cost of the audits
- Time cost = monetary value of the additional time villagers spent at village meetings as a result of the audits, valued at average local wage rates

Costs relating to the change in distribution of economic rents were also included. These depend heavily on assumptions about the degree of redistribution from a village head to villagers.

Benefits were calculated as follows:

- Net present value of reduced missing road expenditures = increase in the lifespan of the road
- Wages received by workers = increase in wage expenditure

Overall, the net social benefits from the audits were approximately US\$250 per village, which implies that the benefits were more than 150 percent of the cost of the audits. This is a conservative estimate using equal-weighted net benefits, that is, calculations based on the assumption that the marginal utility of income is constant across individuals. If calculations assume that some benefits and costs were not equally distributed, using distribution-weighted net benefits, then net benefits are US\$500.

A simpler way to calculate costs and benefits, one that relies on fewer assumptions and better approximates the way government agencies make decisions, would be simply to compare the reduction in corruption to the cost of the audits. This implicitly assumes that the social value of transfers to corrupt village officials (the rents) is zero. The reduction in corruption due to the audits, US\$468 per village, is compared to the cost of the audits, \$335 per village (\$366 if we include villagers’ time costs). With this simpler methodology, the audits once again appear cost-effective.

The costs of audits were set very high in this study, as 100 percent of projects were audited. Lowering the intensity of the audits would most likely increase the cost-benefit ratio.

The dollar figures for the CBA of the audit treatment are presented in the table below.

| Costs and benefits per village                       | Equal-weighted net benefits (US\$) | Distribution-weighted net benefits (US\$) |
|------------------------------------------------------|------------------------------------|-------------------------------------------|
| <b>Cost of audits</b>                                |                                    |                                           |
| Monetary cost                                        | -335                               | -278                                      |
| Associated deadweight loss                           | -134                               | -111                                      |
| Time cost                                            | -31                                | -31                                       |
| <b>Subtotal</b>                                      | <b>-500</b>                        | <b>-419</b>                               |
| <b>Change in rents received by corrupt officials</b> |                                    |                                           |
| From theft of materials                              | -367                               | -224                                      |
| From theft of wages                                  | -102                               | -62                                       |
| <b>Subtotal</b>                                      | <b>-468</b>                        | <b>-286</b>                               |
| <b>Change in benefits from projects</b>              |                                    |                                           |
| Net present value of road expenditures               | 1,165                              | 1,165                                     |
| Wages received by workers                            | 86                                 | 86                                        |
| Other expenditures                                   | -37                                | -37                                       |
| <b>Subtotal</b>                                      | <b>1,213</b>                       | <b>1,238</b>                              |
| <b>Total net benefits</b>                            | <b>245</b>                         | <b>508</b>                                |

Source: Olken 2007, 240–43.

## 2. A framework for the use of cost-analysis approaches to appraise and evaluate anti-corruption activities

Decision makers want to know what works. Advisors trawl knowledge repositories for success stories and try to replicate those reforms that showed most impact. Although it is useful to know which types of interventions have resulted in the greatest impacts, the absence of cost information means that decisions are still based on inadequate information. For example, public expenditure tracking surveys (PETS) can be effective in reducing leakage of public funds, a proxy indicator for corruption (Reinikka and Svensson 2001, 2003; Gauthier 2006). This is useful information, but unless comparisons that include costs are made, informed value-for-money considerations are impossible. PETS are expensive compared to other methods, such as social audits. CBAs and CEAs can illuminate which alternative is the most effective relative to costs in a given context.

Readers may find it puzzling that this paper does not provide more examples of relevant CBAs and CEAs. A thorough mapping was conducted, but very few studies were found. A framework for appraisal and evaluation is presented in this paper, and hopefully this will inspire more empirical applications in the future.

This paper builds on the existing literature on how to conduct CBAs and CEAs but adds specific insights on how these methods can be made to work well for governance and anti-corruption interventions. A useful general framework for cost-analysis approaches is provided by Cellini and Kee (2010, 495) and involves the following steps:

1. **Set the framework for the analysis**  
Should it be a CBA or a CEA? A prospective (ex ante), current (in medias res), or retrospective (ex post) analysis? What is the status quo or baseline?
2. **Decide whose costs and benefits should be recognised**  
Identify stakeholders and geographic scope.
3. **Identify and categorise costs and benefits**  
Distinguish between direct and indirect costs and benefits, and between real benefits/costs and transfers.
4. **Project costs and benefits over the life of the programme, if applicable**  
Reflect on the time frame for the study and how costs and benefits may change over time.
5. **Calculate costs**  
Identify all relevant costs (see ingredients model in box 2, below).
6. **Quantify benefits in terms of units of effectiveness (for CEA) or monetise benefits (for CBA)**  
Count the most important benefits, and place a dollar value on them if you want to do CBA.
7. **Discount costs and benefits to obtain present values**  
Recognise the time value of money by discounting costs and benefits in the future with the social discount rate.

**8. Compute a cost-effectiveness ratio (for CEA) or a net present value, cost-benefit ratio, or internal rate of return (for CBA)**

For CEA, divide the present value costs by the units of effectiveness, to find, for example, “dollars per reduced ghost worker.” For CBA, the net present value should always be reported.

**9. Perform sensitivity analysis**

Test alternative assumptions and scenarios and determine their impact on the analysis.

**10. Make a recommendation where appropriate**

Do not hide the messiness of the analysis behind ratios and net benefits; instead, open the black box and explicitly mention costs and benefits that defy quantification or are considered outside the scope of the exercise.

Most of the points require an advanced understanding of evaluation, but they present no special challenges for governance and anti-corruption reforms. For example, methods to account for uncertainty, such as sensitivity analysis (step 9), are well developed and standardised (Boardman et al. 2006; Jain, Grabner and Onukwugha 2011). The focus below will be on areas where there is a need for special guidance on how to apply CEAs or CBAs in the field of governance and anti-corruption. This is especially relevant to step 6, on quantifying benefits. However, step 5 on costs also deserves attention. In addition, decision makers need to know whether CEAs or CBAs are the most suitable cost-analysis approaches for different interventions aimed at curbing corruption.

The remainder of section 2 addresses several crucial issues: how to credibly measure the benefits of different integrity interventions; how to systematically measure costs; how to avoid misuse and misinterpretations of cost-analysis studies, focusing on their comparative potential; and how to interpret ratios. The section ends by presenting a framework for evaluation of governance and anti-corruption interventions when using cost-analysis approaches to help decision makers apply CEAs and CBAs optimally.

## 2.1. Measuring benefits

This section provides guidance on the identification and measurement of benefits – monetary or non-monetary – generated by governance and anti-corruption interventions. One often hears the argument that the reason why there are so few good evaluations of anti-corruption interventions is that corruption is difficult to measure. This is only true for certain types of corruption, such as patronage, and for broad, country-level measurements. In fact, our ability to accurately measure bribery, fraud, and leakage of funds between institutions has improved substantially over the past decade.<sup>7</sup>

Corruption is a facilitative crime. One seeks to influence someone to gain something. A person may give a bribe to obtain a license, alter a court ruling, or change government policy for personal gain, for example.

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<sup>7</sup> For examples, see Johnson and Søreide (2013), Olken and Pande (2013, 45–53), Sequeira (2012), Button et al. (2012), Clausen, Kraay, and Murrell (2011), and Banerjee, Hanna, and Mullainathan (2009).

Some acts of graft involve an immediate monetary transaction (an official embezzles public funds) and indirect consequences (less money for hospitals). Other types of corruption, such as rent seeking and patronage, involve no immediate monetary transactions but have indirect consequences due to distortion of public policy and services.

As shown below, different measurement and valuation methods are required for different types of corruption. Cost analysis becomes less feasible when the consequences of corruption are more indirect and when multiple types of corruption are targeted by the intervention under study. CBAs in the governance and anti-corruption field will often need to use both direct and indirect valuation methods. CEAs do not have a standard analytical framework for incorporating indirect costs, but decision makers are nevertheless advised to take indirect costs into account. Therefore, a key point of this paper is that cost-analysis approaches are tools to support decision making but should not be the sole basis for decisions in themselves.

### 2.1.1. Direct valuation and measurement

The challenge of measuring (some types of) corruption does not necessarily translate into poor evaluability. Moving from an abstract, country-level measure of corruption to specific outcomes of an initiative makes it easier to identify good indicators. The first step is to identify the relevant outcomes produced by specific interventions and then to formulate good indicators. Olken's (2007) study from Indonesia discussed in box 1 does this, for example, by focusing on missing expenditures in road construction. Other useful indicators could be the number of ghost workers, the percentage of funds allocated by a Ministry of Finance that never reach the intended health facility, the number of public complaints, the number of victims of corruption, the number of bribes reported paid by passport applicants, the perceived levels of integrity of individual departments, teacher absenteeism rates, the number of informal payments to health care professionals, bribes paid by firms to customs officials, and so on.

Luckily, tools already exist to collect the data for these indicators. Fraud and financial leakage can be measured by audits and public expenditure tracking surveys (Button et al. 2012; Gauthier 2006; Reinikka and Svensson 2001, 2003). Data on reported bribe payments and perceptions of integrity in institutions can be found in most international and regional indexes, such as the Global Corruption Barometer, Afrobarometer, and victimisation surveys by national authorities and the United Nations Office on Drugs and Crime (UNODC). The Business Environment and Enterprise Performance Surveys (BEEPS) have detailed data on firm-level bribe payments and other corruption indicators. Surveys such as citizen report cards can be tailored to include most of the above indicators (Bamberger 2005; Johnsen and Søreide 2013, 24). Ghost workers are counted by measuring discrepancies between payroll data and other registrations of staff. Measurement of absenteeism rates usually requires direct observation and monitoring of officials.

As mentioned, for CBA the main challenge is how to translate the benefits of a governance and anti-corruption initiative into monetary terms that can then be measured. This is possible for some interventions, including PETS, various types of audits and procurement controls, and measures to limit

bribery (Gauthier 2006; Di Tella and Schargrodsky 2003). Examples of indicators that can show benefits in financial values include:

- Leakage or waste detected by a PETS, that is, the discrepancy between financial allocations from the central level (typically the Ministry of Finance) and what has actually been spent in a frontline service facility, measured as the estimated financial value of the losses.
- Missing expenditures, measured as the market value of materials that are unaccounted for when comparing promised versus actual specifications of a construction, as detected by a physical audit.
- Informal payments or bribes, measured as the financial value of payments to, for example, health care professionals.

The financial value of assets recovered following a successful investigation or audit is another example of an easily quantifiable, monetary measure of benefits. When the US Department of Health and Human Services (HHS) can document that their investigations into health scams bring in eight times as much revenue as the cost of the investigations, it is hard to dispute the cost-benefit of such activities (Economist 2014). Furthermore, the net benefits may increase as investments (costs) for fraud control are increased. It is only possible to know whether net benefits can increase if serious efforts are made to measure the scale of fraud and to compare different approaches to fraud control (Sparrow 1996).

So far, the anti-corruption community has focused most of its energy on the costs of corruption. Such costs (e.g., loss of state revenue, less foreign direct investment, restricted access to social services, etc.) do of course constitute a direct welfare loss. If one can calculate costs of a corruption risk then it is also possible to calculate benefits of mitigating that risk. Existing knowledge of corruption costs can be used to inform appraisals. For example, Fisman (2001) used market inference to estimate the value of political connections to Indonesian president Suharto, thereby putting a price tag on the costs of patronage and cronyism. An appraisal of a tamper-proof public procurement programme could assume that these costs can be turned into benefits.

When one does not need to translate benefits into a monetary value, measurement becomes easier. Unlike CBAs, CEAs do not have to translate direct benefits into monetary terms. Comparisons can be made as long as there is a comparable unit of effectiveness that can be quantified.

## 2.1.2. Indirect valuation

Advanced valuation methods can credibly value even intangible benefits such as time, outdoor recreation, or a scenic view. There are two basic approaches: measuring people's stated (self-reported) preferences, or drawing inferences from observing changes in their behaviour. It should be explored how well these approaches can measure the benefits of corruption control. Rather than measuring direct prices, such methods measure "shadow" prices. Shadow prices account for the social opportunity costs of a good or action. This allows a wider net to be cast when delineating and measuring benefits, one that more accurately reflects the value to society (Florio 2014, chaps. 1 and 3).



Corruption is expected to matter for social welfare, and shadow prices reflect changes in social welfare. Valuation methods based on individuals' preferences, either as stated or as revealed through observed behaviour, could therefore be adapted to compare the expected aggregate benefits of anti-corruption reforms. *Instead of focusing on the costs of corruption, a CBA-inspired analysis would examine how individuals value a reduction in corruption compared to other development outcomes, relative to the costs.* Anti-corruption interventions have traditionally been promoted mainly on moral grounds, or on the basis of the aggregate costs of corruption to a country. A framework that focuses on the overall *benefits* of anti-corruption, based on people's preferences, would allow more fair comparisons of value for money between sectors.<sup>8</sup>

Valuation would have to be done carefully. People in the most corrupt countries experience corruption as a normal everyday phenomenon and may therefore have difficulty placing a monetary price on reduced corruption, as they would not know what to expect for their payment. Moreover, low corruption is quite an abstract public good, so surveys should formulate questions relating to concrete systems and processes. Even using the most direct willingness-to-pay method called contingent valuation – using structured survey questionnaires – would entail methodological challenges. Given the nature of corruption, one could ask either about people's willingness to pay for clean government or about their willingness to accept a payment to put up with corruption. This is similar to the difference between asking people how they value clean air versus asking them what they see as a fitting compensation for accepting some pollution.

Measuring the stated preferences of individuals requires a well-crafted survey. Surveys would ask what people maximally are willing to pay to be rid of corruption in a sector, institution, or process (see Boardman et al. 2006 for an overview of different methods and possible bias). Estimating benefits through contingent valuation would normally follow five steps:

1. Preparation of a questionnaire
2. Selection of a sample of respondents from a population
3. Submission of the questionnaire
4. Econometric processing of the data to estimate the respondents' willingness to pay
5. Inference of results to the entire population (Florio 2014, 127)

Respondents could be asked open-ended questions such as “What is the maximum amount of money you would be willing to pay to not experience corruption in this process/institution/sector?” Another approach is that the interviewer sets the price and asks respondents to state whether they would be willing to pay this or not. In a more sophisticated approach, respondents are asked whether they would be willing to pay a specified amount in exchange for not having to experience corruption; if the answer is yes then the

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<sup>8</sup> Of course, such an analysis would not need to be limited just to measuring willingness to pay or willingness to accept. Knock-on effects of less corruption, such as more foreign direct investment, an increase in tax revenue, and so on, should also be measured. However, one often faces a substantial attribution problem with such broad governance indicators, even though they are more readily quantifiable.

interviewer repeats the question with a higher price until the respondent is no longer willing to pay. (Florio 2014, 127) Contingent valuation is by no means a perfect tool. It is not easy for people to put a price tag on corruption control, as discussed above. However, if contingent valuation is done for other development outcomes it would be relevant also to ask people how they value a reduction in corruption, and compare the answers.<sup>9</sup>

Another stated-preference technique called *choice modelling* or *choice experiments* asks people to choose or rank different combinations of options where price is included.<sup>10</sup> Antoniou and Matsoukis (2007) provide an example from the transport sector. They asked people to choose between ten scenarios, using a 7-point rating scale with different combinations of transport modes (only car trips, only bus trips, mix of car and bus), travel costs (from 6 to 10 euros) and travel times (between 60 and 120 minutes). Through their choices, people revealed their willingness to pay. In that study, the average value that people put to time was 5.99 euros per hour. Similar scenarios could be posed to people with respect to anti-corruption efforts.

Simply asking people to rate or choose from a scalar list will generally provide little useful information. People want all the benefits and none of the costs, so a choice experiment forces trade-offs between options. People may choose very expensive reform scenarios at a high price (which could be presented in financial figures or as the number of, say, hospitals that would have to be closed per year), or they may be content to eliminate petty forms of corruption in frontline service delivery at a lower cost. We don't know unless we ask.

Willingness-to-pay surveys are widely used in taxation. For example, they find that people's willingness to pay taxes is reduced when there is widespread corruption (Fjeldstad 2001; Ali, Fjeldstad, and Sjørusen 2014). There are few existing examples outside the area of taxes. The 2009 Global Corruption Barometer asked respondents about their willingness to pay a premium for clean corporate behaviour, and half of the respondents answered positively (Transparency International 2009, 16).

The alternative to surveys based on stated preferences is to produce estimates from observed behaviour, called revealed preferences. For example, the value of better schools can be estimated by differences in home prices. Families are willing to pay more for homes in areas with good schools, so home prices reflect the quality of the schools (Black 1998). Recently, the explosion of data collected on human behaviour has led to increasing use of data mining to reveal people's preferences and their behaviours in general.

One can also value the benefits of anti-corruption activities by inferring from observed behaviour, and this has been done for a long time – just not in a way that can feed directly into CBA. Corruption changes behaviour, and these changes can be measured just as well as the effects of school quality on home prices

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<sup>9</sup> Contingent valuation has been applied extensively to the valuation of environmental quality and to a variety of public programmes, for example in the water sector, in developing countries (Alberini and Cooper 2000).

<sup>10</sup> For more information, see Pearce, Atkinson, and Mourato (2006).

or the value of time. Firms may reduce investments in corrupt countries or sectors.<sup>11</sup> People may avoid or underutilise services, such as health care and water, when they are forced to make “unofficial” payments, and such payments may constitute a barrier for poor people in particular. Such opportunity costs could be assessed and fed into CBAs by observing differences in service utilisation in facilities or locations where corruption is rife compared to locations where there is little corruption. Information can be collected by means of surveys or by mining existing data from the facilities themselves or the data of service users, if available.<sup>12</sup> The reduction in welfare costs from less corruption would count as the benefits of the anti-corruption intervention. The benefits would be best assessed by triangulating revealed preferences, calculated using market or shadow prices for the specific health or water services, and stated preferences, indicating the users’ willingness to pay for less corruption when asked.

Law enforcement is a special area where some criminology literature exists on both direct and indirect benefits.<sup>13</sup> The direct monetary benefit of a successful investigation may be recovered assets, but the preventive benefits of investigations, in terms of future deterrence, can be expected to matter more than asset recovery. Most research on sanctions and optimal law enforcement builds on Becker’s (1968) seminal paper on crime and law enforcement, which states that the probability and the severity of punishment deter crime. However, there is no scholarly consensus on what constitutes optimal law enforcement (Garoupa 1997). Recent research shows that the severity of a punishment does not have much effect on the probability of crime, while increasing the certainty of punishment does have a deterrent effect (Wright 2010).<sup>14</sup> In short, future deterrence as an indirect benefit is difficult to estimate with precision. Past studies can provide evidence that there is an effect, but the evaluator is still faced with a challenge when asked to estimate the size of the effect for a specific intervention. The same applies to interventions that seek to “corruption-proof” organisations or raise awareness of the costs of corruption. The best approach is to acknowledge that there is not a large body of evidence to build on, and to make conservative estimates using advanced valuation methods.

In short, valuation methods could be adapted to put a monetary value on anti-corruption benefits. However, in the short run it is easier and perhaps more reliable to use a CEA approach. Here, there is no need to translate and subsequently measure benefits in monetary terms. CEA compares costs of different interventions to one overall effectiveness measure. This unit of effectiveness can relate to corruption: for example, the number of victims of corruption. But, importantly, the unit of effectiveness does not have to

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<sup>11</sup> There is much literature on how corruption reduces foreign direct investment. A forthcoming overview paper by Rocha Menocal et al. will assess the existing body of evidence on corruption.

<sup>12</sup> The “I Paid a Bribe” website is an example of how corrupt behaviour, and changes in corrupt behaviour, can be tracked by self-reporting or crowdsourcing. For more information on how such tools can be used not just for advocacy but also for evaluation purposes, see Johnsen and Søreide (2013, 28–29).

<sup>13</sup> The field of criminology is advanced compared to anti-corruption when it comes to cost-analysis approaches. See Dossetor (2011), Aas (2002), Cohen (2000), Farrell, Bowers, and Johnson (2005), McDougall et al. (2003), and Dhiri and Brand (1999).

<sup>14</sup> The criminology literature has focussed on the deterrent effects of, for example, time in prison, gun laws, and fines. See Wright (2010), Shavell (1992), and Drago, Galbiati, and Vertova (2009).

focus on corruption in order to assess the cost-effectiveness of different anti-corruption interventions (an example is provided in section 3).

## 2.2. Measuring costs

Unlike measurement of benefits, the identification and measurement of costs does not pose unique challenges for the governance and anti-corruption field. However, there is still a need to put thought and effort into quantifying costs, as the final cost-effect ratio is sensitive to imprecision in both cost and benefit measurement. Sometimes “the uncertainty in cost-effectiveness analysis may stem more from the cost side than from the impact side” (Dhaliwal et al. 2012, 18). Good studies, and comparisons, require reliable estimates of both benefits and costs. Nevertheless, both aid practitioners and academics typically fail to prioritise cost measurement. Academics often have little incentive to include cost considerations in their work, as most social science journals do not require cost analysis. Donors and governments record overall, direct costs. However, a precise analysis of costs would involve more work to set up a uniform methodology and then gather cost data on specific items.

A basic distinction between direct and indirect costs is useful.<sup>15</sup> Donors often know the direct costs of their own programmes and distinguish between administrative, labour, and hardware costs. Indirect costs are rarely estimated. These include host government expenditure (salaries, buildings, logistics) and administrative costs (as for implementation of regulations and laws to ensure compliance). For CEAs and CBAs, the cost of a specific intervention should be defined as “the value of all the resources that it utilizes had they been assigned to their most valuable alternative use” (Levin and McEwan 2001, 44). *Costs are measured directly, but also indirectly as missed opportunities.* This means that standard budgets are inadequate for cost analysis as they rarely include indirect costs or explain how costs are distributed across beneficiaries and over time. The ingredients model is a useful means to identify all relevant costs (box 2). Basic costs (electricity, buildings, salaries) that would exist even in the absence of the programme are not included in CBAs or CEAs. Only costs specific to the programme are included.

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<sup>15</sup> Governance and anti-corruption reforms should ideally always consider the indirect costs of their implementation, regardless of whether evaluation is planned. Countries of the Organisation for Economic Co-operation and Development use different versions of regulatory impact analysis, to varying degrees (OECD 1997). An estimate of indirect costs would ideally be done at the policy proposal stage to understand, for example, the administrative burden that an initiative would entail. Such indirect costs would be relevant for both government and non-governmental organisations.

**Box 2. The ingredients model**

A useful way to calculate costs is to use the *ingredients model*. The basic approach is to identify all the ingredients, or resources, that are required for an intervention to produce the desired outcomes and then place a value on them. A typical breakdown would include: (a) personnel, (b) facilities, (c) equipment and materials, (d) other programme inputs, and (e) required client/user/beneficiary inputs.

One begins by going through the programme document and budget, where most expenditure statements would be found. However, other documentary evidence, such as internal memos or past evaluations, may still provide a few missing cost ingredients. Interviews and direct observation can be used to verify costs. Most relevant for governance and anti-corruption programmes is probably that volunteers' time costs are not included in standard budgets, but should be taken into account for cost-analysis approaches. Unpaid work still has opportunity costs, as it consumes labour that could be used elsewhere.

When estimating the value of costs, evaluators normally rely on either market prices or shadow prices. If market prices can be found, those can often be used. Where no competitive markets exist, estimates must be made. These are called shadow prices. For cost valuation it is also useful to distinguish between total costs (the opportunity costs to society as a whole) and the specific costs to (a) governments, (b) donors, (c) other organisations, and (d) beneficiaries.

Finally, cost estimates should be time-bound. Costs should be adjusted for inflation and discounted for their time value. Most budgets adjust for inflation, but few appreciate that costs occurring in the future are less burdensome than immediate costs.

*Source: Levin and McEwan 2001, 46–57.*

The Abdul Latif Jameel Poverty Action Lab (J-PAL) has taken a noteworthy initiative to promote standardisation of cost measures for cost-effectiveness analysis, focusing on the education sector (Dhaliwal et al. 2012). Building on that, Evans and Popova (2014, 7–11) show why a uniform, systematic approach to cost measurement matters, as costs are highly sensitive to context:

- Unsurprisingly, costs vary widely across geographic contexts. One cannot assume that the cost of a community monitoring programme is similar in all countries, or even all regions of the same country. If credible data on such variation in costs are not obtained, then the comparisons of cost-effectiveness across geographic contexts can be misleading.
- Programme complexity also influences costing sensitivity. The distinction between simple, complicated, and complex interventions is presented in section 2.4. In essence, simple programmes have fewer cost ingredients and the estimates will therefore be more reliable. Complex interventions will have many ingredients and costing comparisons will be more difficult.
- The scale of the programme matters. Both benefits and costs are sensitive to scale. One therefore cannot uncritically extrapolate costs from a pilot programme to a programme at scale. Costs will not necessarily rise proportionately with scale.

Even if cost estimates are adapted to local contexts, “policy makers need detailed, comparable reporting on costs, gathered at the same time that expenditures are made in order to avoid recall bias” (Evans and Popova 2014, 13).

The measurement of costs for governance and anti-corruption interventions can be either easy or problematic, depending on whether the objective is to evaluate (a) process tools to improve governance

and mainstream integrity, or (b) stand-alone integrity and anti-corruption measures. Process tools to improve governance and mainstream integrity in a general sense are problematic when it comes to cost measurement. For example, an Integrated Financial Management Information System (IFMIS) is used mainly to promote effectiveness of the public financial management system, but it may also promote integrity. As corruption reduction is only a secondary objective of the IFMIS, it would be wrong to base a CEA or CBA on the total cost of this intervention, but it is also impossible to isolate those costs that directly relate to anti-corruption. Cost measurements are difficult for such process tools that have integrity improvements as a secondary objective, as cost-analysis approaches are concerned with the marginal change in both costs and benefits due to the intervention.

Other process tools, such as the introduction of biometric systems, can be done at the facility level. This makes it possible to compare costs (and benefits) to facilities with and without such process tools. Unfortunately, our inability to isolate specific anti-corruption costs of centralised, integrated process tools is a clear challenge to the application of cost-analysis approaches.<sup>16</sup> Costs are best isolated at the decentralised facility level for process tools.

Stand-alone integrity and anti-corruption measures – such as community monitoring, procurement checks, spot checks, and various types of audits – have good potential for isolating their specific costs, as they have independent budget lines and/or goals related to integrity improvement. This makes it easier to isolate specific, relevant costs.

## 2.3. Comparisons and ratios: Beware the limitations of the analysis

CEAs and CBAs are tools to support decision making, but they are often imperfect when considered on their own. There are several important questions to ask when interpreting a cost-analysis study: how far does its comparative potential extend, how does it address context, is it applied at the appropriate level of analysis, do ratios give a false impression, and are important individual worries taken into account?

CBAs can present the comparison of costs versus benefits in several ways, the three main ones being the benefit-cost ratio, net benefits, and the internal rate of return.<sup>17</sup> A strong CBA can be used to make comparisons across projects, sectors, and countries. CEAs have a more limited comparative potential. However, if the evaluator carefully plans CEAs and applies a uniform methodology for estimating costs and benefits across multiple programmes in different contexts, useful comparisons can be made, enabling the evaluator to “summarize a complex program in terms of an illustrative ratio of effects to costs, and

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<sup>16</sup> Attempts to overcome this challenge would have to transparently weigh and cost the different components of an intervention.

<sup>17</sup> The benefit-cost ratio is similar to the cost-effectiveness ratio, so this measure can be misleading when comparing projects of different scales, as described below. Net benefits is the best overall indicator, but it is very sensitive to the discount rate being used. Internal rate of return does not require a discount rate but has problems with different project scales, and it can sometimes be necessary to calculate more than one rate of return if costs and benefits are unevenly dispersed throughout the project cycle (Levin and McEwan 2001, 180–81).

[...] compare multiple programs evaluated in different contexts and in different years” (Dhaliwal et al. 2012, 6). Overall, a solid body of cost-analysis studies can help identify which interventions perform better or worse in different contexts and whether that relates to a sector-specific issue or not.

CBAs and CEAs cannot ignore context. Comparisons of interventions in different contexts should carefully consider the importance of external variables (European Commission 2013, 33). What works in Indonesia might not work in Uganda. What works in agriculture may not work in health. Moreover, these methods will not tell us whether poor performance is due to theory, design, or implementation failure (Weiss 1997; Stame 2010). Differences in implementation can play a role in the performance of a programme, and they are difficult to capture using an evaluation framework based only on CEA or CBA techniques (Andrews 2013; Pritchett, Woolcock, and Andrews 2010).<sup>18</sup>

The appropriate levels of analysis for CEAs and CBAs are the programme level and, sometimes, sector level. The methods are not designed for country-level analysis. Comparing costs and benefits of fighting corruption has been a popular theme in anti-corruption literature. Joseph Nye’s (1967) seminal article, “Corruption and Political Development: A Cost-Benefit Analysis,” outlines possible benefits and costs of corruption in an effort to settle the debate between “moralists” and “revisionists.” Such generalising, country-level comparisons should be avoided. Given that the value of some anti-corruption interventions cannot be monetised, CBA comparisons at the country level would be biased in favour of interventions that can easily be translated into monetary benefits. CEA compares interventions pursuing the same objective, which is relevant at the programme and sector levels, within and sometimes across countries, but it cannot be used to evaluate whole-country strategies. *Just as cost-analysis approaches in the field of education and health are not used to assess the overall effectiveness, worth, or utility of education or health services for a society as a whole, these methods also should not be used to conduct country-level assessments of anti-corruption efforts.* Sector- and country-level assessments can be inspired by the basic intuitive approach of cost-analysis approaches, but it should be recognised that overstressing the methodologies will lead to flawed analysis and bad policy advice.

CEA comparisons are often done using ratios. It is up to the evaluator to define the units of effectiveness. Therefore, using ratios might skew perceptions, as it can be difficult to determine a value of each incremental unit of effectiveness gained if the scales of the interventions differ substantially. It is, for example, difficult to compare ratios between a large, expensive PETS and a small pilot project on community monitoring. This also applies to cost-benefit ratios. So, *ratios should not be used for choosing between alternative interventions on the margin.* For comparisons between interventions of different size, ratios may need to be omitted. An intervention with a low cost and a limited effect may result in a better ratio than a policy with a more significant cost and a more significant effect, even though the total and net effect of the second intervention may be greater. This matters, for example, for pilot projects, and for the issue of project scalability. The dynamics of a project change when it moves from pilot status to full scale.

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<sup>18</sup> A useful evaluation approach to implementation assessment is “realist evaluation” (Pawson and Tilley 1997; Pawson 2007, 2013). See, for example, chapter 5 on “Megan’s Law” in Pawson (2007), discussing the effectiveness of a specific crime prevention strategy relating to sex offences.

A narrow focus on ratios will invalidate the broader benefits of cost-analysis approaches (Cellini and Kee 2010, 521).

A final point relating to why CEAs and CBAs are tools to support decision making and not decision-making tools in themselves concerns the fact that reforms often produce winners and losers. Cost-analysis studies will yield an aggregate judgement on pros and cons from a societal perspective, but individual perspectives should be taken into account by the broader analytical framework. This matters for appraisals of governance and anti-corruption reforms, as losers can turn into spoilers and sabotage the initiative. If that happens, the reform may not be implementable.

## 2.4. Supporting the decision on which interventions are suitable and which are not

Some donors, such as the UK Department for International Development (DFID), expect CBAs or CEAs to be conducted for all investment decisions as part of their business cases. But it does not always make sense to conduct a cost-analysis study. More guidance is needed as to when such analysis is feasible and relevant. *The possibilities and limitations of cost-analysis approaches depend on how well one can isolate, measure, and compare costs and benefits, and that in turn depends on the characteristics of the policy or programme.* This section presents a basic framework to clarify which anti-corruption activities do and do not lend themselves to CEAs and/or CBAs.

The feasibility of applying cost-analysis approaches to anti-corruption activities mainly depends on two factors. First is the *complexity of the intervention*, as this determines the level of evaluability (Rogers 2008). Here, the difference between simple, complicated, and complex interventions is informative (table 2). A related, but not perfectly aligned, distinction is between direct and indirect anti-corruption interventions. A second factor is *how benefits can be measured*, either by monetising benefits or by identifying a single, common unit of effectiveness. Section 2.2 addressed this issue, so the discussion will not be repeated here.

Complexity has many dimensions, including (a) the clarity and number of goals of an intervention, (b) whether causality is linear or non-linear, and (c) the number of activities/components that the intervention requires. Most governance interventions are complicated, and sometimes complex, in their totality, but one can often identify individual activities or subcomponents that have a relatively simple logic. For example, a large, multi-component public financial management programme would be complicated, but the specific intervention of auditing to reduce waste and leakage is comparatively simple. Table 2 provides illustrative examples of simple, complicated, and complex activities.

Cost-analysis approaches generally lend themselves best to simple interventions, but there are also examples of robust studies of complicated programmes. In deciding whether to do a cost-analysis study and in choosing between a CEA or CBA, it is useful to distinguish between two main modes of anti-corruption programming: direct and indirect anti-corruption interventions (box 3). Direct anti-corruption activities involve explicit support to, for example, anti-corruption agencies and commissions, national



anti-corruption strategies, or targeted legislation to reduce corruption. Indirect anti-corruption projects have the reduction of corruption as only an implicit or secondary goal (Jennett 2006). Indirect approaches often use a so-called mainstreaming strategy, seeking to implement indirect anti-corruption interventions in all sectors and at all levels of development cooperation (Chêne 2010, 2).

**Table 2. Levels of complexity: Simple, complicated, and complex problems**

| SIMPLE<br>Following a recipe                                                     | COMPLICATED<br>Sending a rocket to the moon                             | COMPLEX<br>Raising a child                                                         |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| The recipe is essential                                                          | Formulae are critical and necessary                                     | Formulae have a limited application                                                |
| Recipes are tested to assure easy replication                                    | Sending one rocket increases assurance that the next will be OK         | Raising one child provides experience but no assurance of success with the next    |
| No particular expertise is required but cooking expertise increases success rate | High levels of expertise in variety of fields are necessary for success | Expertise can contribute but is neither necessary nor sufficient to assure success |
| Recipes produce standardised products                                            | Rockets are similar in critical ways                                    | Every child is unique and must be understood as an individual                      |
| The best recipes give good results every time                                    | There is a high degree of certainty of outcome                          | Uncertainty of outcome remains                                                     |

*Source:* Adapted from Glouberman and Zimmerman 2002, 2.

In practice, many projects combine characteristics of both direct and indirect interventions. For example, an awareness-raising campaign or a training programme on ethics may explicitly target corruption, but they would be regarded as indirect approaches in this paper as they promote change indirectly and slowly, by changing individual behaviour and shared norms and culture.

Direct anti-corruption interventions are often complicated interventions targeting multiple, diverse objectives, so triangulation of multiple indicators will often be necessary to assess overall performance. Given the multiple objectives, CBA would be the appropriate tool, but the difficulty of monetising benefits limits the feasibility of CBA for a large number of interventions. CEA could potentially be done on subcomponents of large, complicated programmes. Overall, it is difficult to apply cost-analysis approaches to complicated and complex programmes in their totality, but opportunities arise when looking at individual programme subcomponents that may be simpler. For example, an anti-corruption authority as a whole is complicated to evaluate, but if one isolates specific work streams then it becomes more feasible to evaluate the costs versus benefits of, for example, the agency's work on law enforcement, corruption prevention, or public awareness raising.

### Box 3. Examples of direct and indirect anti-corruption interventions

#### Examples of direct anti-corruption interventions

- National anti-corruption strategies
- Anti-corruption authorities
- National legislation on corruption

#### Examples of indirect anti-corruption interventions

- Support for public financial management, audit, revenue authorities, and procurement processes at central and local levels
- Efforts to mainstream integrity measures into delivery of services in social sectors such as health, education, water and sanitation, etc.
- Activities to promote transparency and access to information
- Training programmes on ethics and good conduct
- Raising awareness of the problem among civil servants and the broader population

Indirect anti-corruption interventions can focus on, and thus can be evaluated on the basis of, a single, quantifiable outcome: the unit of effectiveness. This opens up possibilities for CEA. In general, the likelihood that a CEA will produce solid evidence is higher for simpler interventions. The benefit of indirect anti-corruption interventions is that their effects are easier to identify and isolate. Moreover, CEAs are already done in, for example, health programmes, but not with a focus on cost and benefit elements relating to anti-corruption interventions. This is a missed opportunity.

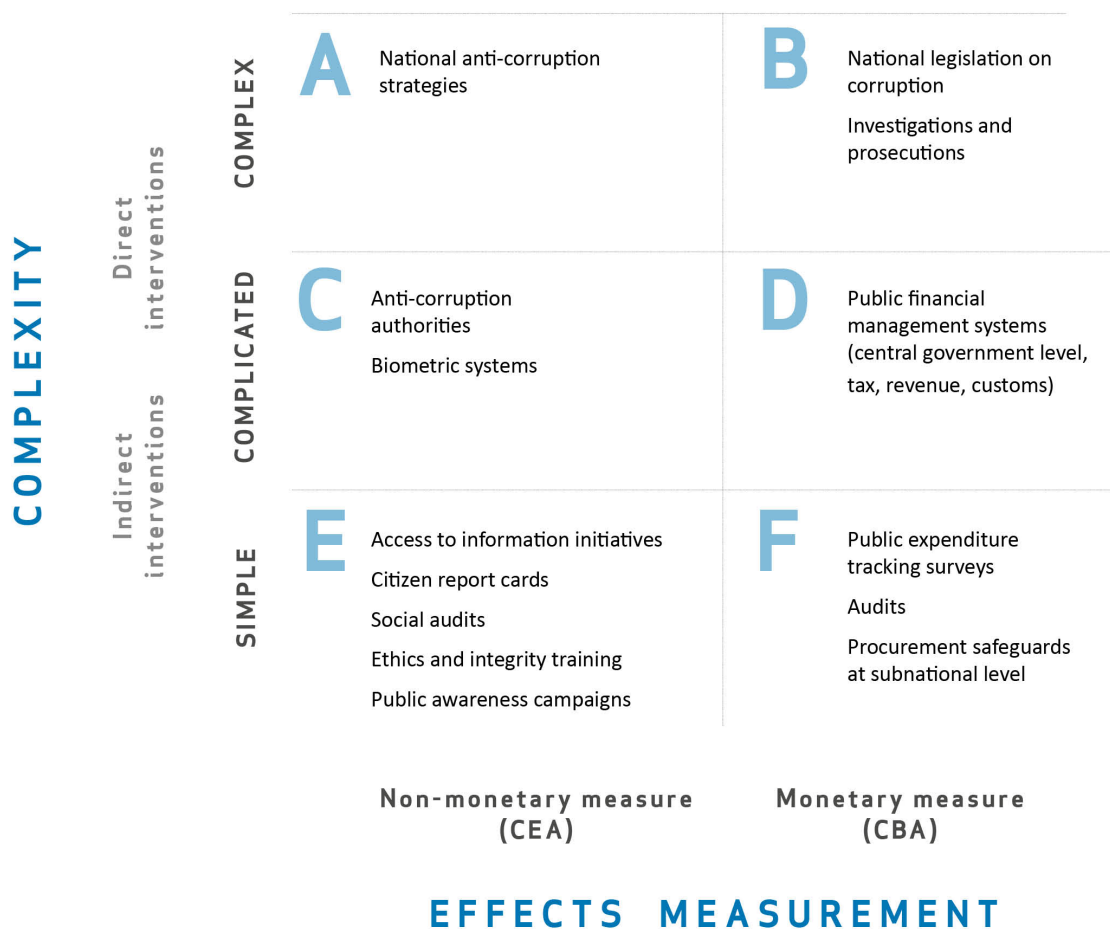
Because indirect anti-corruption interventions generally are less complex they are also more evaluable. Interventions that focus on frontline service delivery can more easily be evaluated for the costs and benefits of anti-corruption initiatives as compared to interventions that aim to improve central government processes or country-level performance. Where a monetary value can be assigned to the effects of simpler interventions, the CEA can be translated into a CBA.

Figure 1 shows a framework to guide decision making on the use of CEA or CBA for different types of anti-corruption interventions. The parameters of complexity and measurement mentioned above result in six conceptual areas, labelled A through F in the matrix. Examples are provided for each area. Area E is the one with most potential. The cost-effectiveness of simple interventions with non-monetary outcome measures can be credibly measured, using existing knowledge of evaluation methods. The recommendation for area C is to break down the complicated interventions into their constituent parts so they move towards E. Area F

contains examples of relatively simple tools whose benefits can be measured in monetary terms, allowing for CBA. These can be part of more complicated public financial management reforms (area D). Complex interventions in their totality are not suited for CEA (area A) or CBA (area B).

Overall, simple interventions are the most suited to cost-analysis approaches. Direct anti-corruption interventions, such as national anti-corruption strategies, anti-corruption authorities, or national legislation on corruption, are complicated or complex activities, which makes it difficult to assess both costs and benefits. Many indirect anti-corruption interventions lend themselves to CEA or, less often, to CBA. Projects that aim to mainstream anti-corruption into service delivery programmes are often less complex and can identify a comparable unit of effectiveness (which may or may not be related to corruption; see section 3), making CEA feasible. Benefits of interventions related to public financial management can often be monetised, which makes CBA possible.

Figure 1. A framework for use of cost-analysis approaches on anti-corruption activities



## 2.5. Summary

The development of increasingly sophisticated ways to measure corruption combined with a better understanding of the differences between anti-corruption interventions means that it is possible to have a coherent framework for evaluation when one wants to analyse costs versus benefits of governance and anti-corruption interventions. CEAs are useful for simple interventions where outcomes can be clearly defined. These are most often indirect anti-corruption interventions. Benefits can at times also be translated and subsequently measured in monetary terms. CBAs are an option for more complicated or complex anti-corruption interventions (often so-called direct interventions), but they often rely on the use of advanced valuation methods to show both costs and benefits of anti-corruption interventions in monetary terms. Both methods require more systematic and regular collection of cost data than is the norm today for aid projects.

The greatest unexploited possibilities lie with CEA, comparing alternative interventions or the same intervention in different contexts. In any case, comparison groups are needed. Sector programmes focusing on service delivery would lend themselves particularly well to analysis of the cost-effectiveness of integrity initiatives. CEAs will primarily show cost-effectiveness of alternative interventions pursuing the same outcome in the same context. Generalisations and comparisons should be drawn with care, as is true for all evaluation designs and methods.

Rather than thinking about costs versus benefits of anti-corruption policies and programmes as experienced by whole countries, measured via aggregate indicators such as the Corruption Perceptions Index, it is more useful to apply cost-analysis approaches at the project, programme, or sector level and measure the benefits of specific interventions by means of outcome-level indicators (lower teacher absenteeism, fewer ghost workers, less leakage in financial disbursements between central and local levels of government, more assets recovered from criminal investigations, etc.).

### 3. Integrating cost-effectiveness analysis methods with impact evaluation designs

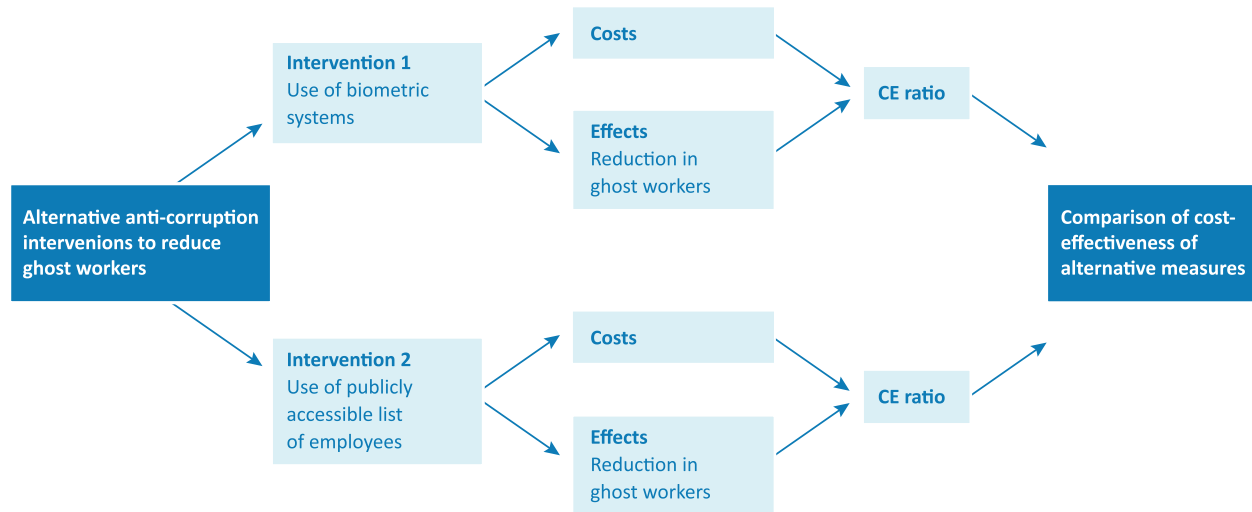
This section provides guidance for future design of governance and anti-corruption interventions to allow greater use of CEA – a method that is comparatively underused and undervalued. Integrating cost-analysis methods within a larger impact evaluation design would be a powerful blend. For CEA, comparison groups are necessary. Piloting, sequencing, and randomisation can be additional useful strategies to isolate the impact of anti-corruption activities on the relevant development outcomes. Adding a systematic analysis of costs increases the policy relevance of such evaluation designs.

Two types of evaluation designs are presented below. The first type, shown in figure 2, addresses the question of which anti-corruption interventions are the most cost-effective for a given outcome in the same context by comparing alternative interventions or combinations of interventions. We can call this type *one-or-the-other*. The second type, shown in figure 3, investigates the extent to which anti-corruption activities are valuable in sector programmes by comparing whether facilities or localities covered by an anti-corruption package achieve better results than those not covered. This type, called *with-or-without*, does not rely on direct measurement of corruption to document the cost-effectiveness of different interventions in the same context. In other words, it can show the value added of anti-corruption activities for sector programmes purely by measuring sector-specific development outcomes (such as higher literacy rates, fewer child deaths, or more access to water and sanitation). Both types of evaluation require a strong programme theory, good indicators, baselines, systematic data collection, and establishment of comparison groups. There are no quick fixes for learning what works and why.

Figure 2 provides an example of an evaluation design for assessing two alternative strategies to reduce ghost workers in local government. The high-tech, high-cost strategy involves using biometric systems to monitor employee behaviour, while the low-tech, low-cost strategy calls for publishing government data on who is a public employee and then relying on citizens to monitor and control. The use of biometric systems is based on a formal, technological monitoring approach, whereas the publishing of public records assumes that change can be achieved through government transparency followed up by social accountability.

Both interventions can be expected to reduce ghost workers, but how many more ghost workers should be removed from the public payroll before the cost of the more expensive intervention is justifiable? To answer this question, cost analysis has to be done. A simple ratio of cost per removed-ghost-worker would be informative (ratios can also be avoided if the scales of the interventions differ substantially, as discussed in section 2.4). Higher cost should translate into a substantial number of additional ghost workers removed from the public payroll. From an immediate decision-making viewpoint, then, the preferred alternative should be the one that has the lowest cost for a given reduction in ghost workers, or the greatest reduction in ghost workers for a given cost. However, biometric systems may have other benefits, such as facilitating centralised, electronic information management. Such additional benefits are not identified in the CEA, but they should be clearly identified and recognised in the overall analysis.

**Figure 2. Type 1, “one-or-the-other”:  
Comparing cost-effectiveness (CE) of different anti-corruption interventions**



Sometimes it may be less interesting to compare one tool to another and more relevant to study the benefits of a combination of initiatives (such as a code of conduct, an assets register, staff training, and an advertised whistle-blowing hotline) that may be too small to produce significant effects individually but may be valuable when used together.

Figure 3 does not compare alternative interventions but rather compares the value of a package of anti-corruption activities in a health sector programme versus no anti-corruption activities.<sup>19</sup> A basic with-or-without design reduces many corruption measurement problems, as the main variable is the health outcome (although corruption outcomes can also be measured if possible). If the cost-effectiveness ratio is higher for facilities or localities that have an anti-corruption component, then the package of integrity measures has been a valuable investment.

The evaluation design would have to carefully control for externalities to ensure reliable results. Random selection of which facilities should be with and without the package would be a good way to reduce externalities (see Johnson and Søreide 2013, 10–25). The difference between the cost-effectiveness ratios would be a good measure of how valuable anti-corruption activities have been. This design goes beyond just assessing whether anti-corruption efforts have an effect by also considering whether the effects are worth the costs of the intervention itself.

<sup>19</sup> This evaluation design could also compare mixes of different packages against a comparison group without an anti-corruption package. For the sake of simplicity, this is not done in this paper.

**Figure 3. Type 2, “with-or-without”:  
Comparing costs and effects of anti-corruption (AC) in sector programmes**

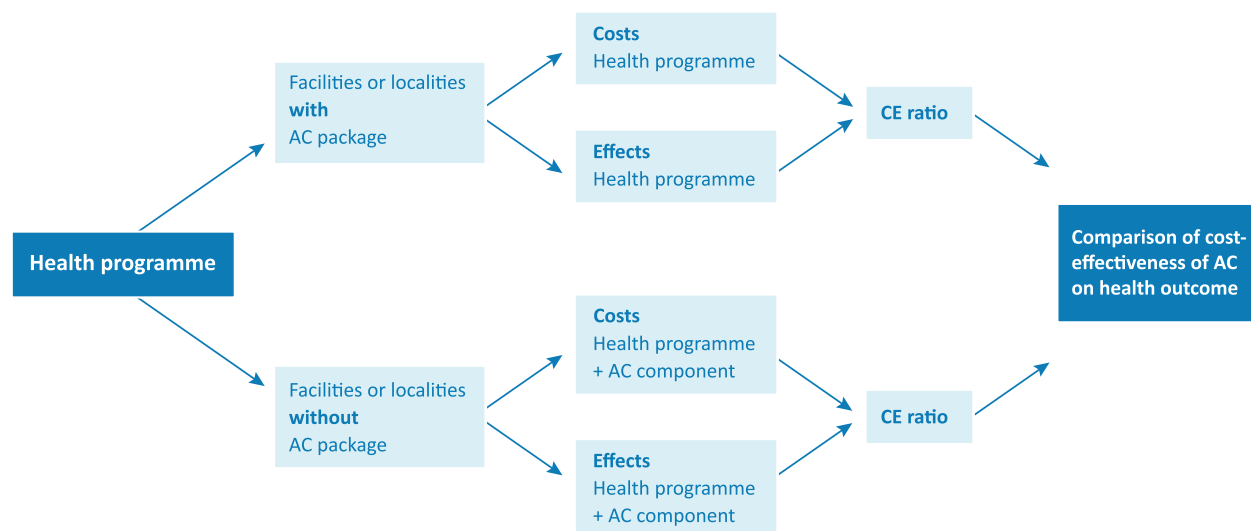


Table 3 gives some examples of how costs and outcomes could be defined for the health programme shown in figure 3.

**Table 3. Hypothetical, illustrative CEA framework for health programme**

| COSTS                                                                                                                                                                                                                                                                                                 | UNITS OF EFFECTIVENESS                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Direct costs: value of project, technical assistance, government expenses (salary, buildings, logistics)</p> <p>Indirect costs: Cost of change in behaviour prompted by new integrity measures (increased administration/work required for implementation of regulations and laws, compliance)</p> | <p>Health outcomes (difference between health facilities with anti-corruption activities and those without):</p> <ul style="list-style-type: none"> <li>• Overall effectiveness measure: e.g., quality-adjusted life years (QALY)</li> <li>• User ratings of health facilities</li> </ul> <p>Anti-corruption effects:</p> <ul style="list-style-type: none"> <li>• Frequency of informal payments</li> <li>• Number of ghost workers</li> </ul> |

By adding the cost side to the analysis, a CEA framework would be able to answer some very relevant questions on which specific anti-corruption interventions are cost-effective (or not), and when and why. We would expect this to be influenced by the impact of corruption and by the costs of the treatments. In contexts where corruption is a significant barrier to reaching development outcomes, how much should be invested in corruption risk mitigation? If we focus only on impacts of anti-corruption activities, we cannot answer such questions.

If a series of reliable CEAs for similar interventions in similar contexts were established, donors would be better equipped to compare the value for money of different kinds of anti-corruption interventions in different contexts. This would enable us to empirically test policy and strategy prescriptions. For example, the model developed by Jeffrey Huther, Anwar Shah, and Mark Schacter suggests that different anti-corruption interventions are required for different governance contexts (Huther and Shah 2000; Shah and Schacter 2004). This model, or variants thereof, underpins most anti-corruption programming today. Empirical testing of such policy recommendations would most likely lead to important recalibrations and, eventually, to more effective governance and anti-corruption programming.



## 4. Conclusion

Decision makers will frequently attempt to compare value for money across programmes as they decide how to spend limited resources in the best possible way. Such comparisons at times must be based on very limited and imperfect information. Using cost-effectiveness analysis and cost-benefit analysis in appraisals and evaluations is one way to make comparisons more informative and evidence-based. With careful planning, adequate resources, and transparency around the shortcomings of individual studies, cost-analysis approaches can be useful inputs to the decision-making process. Of course, decision makers should never rely solely on a single source of information, and so cost-analysis studies must always be complemented with other relevant information. For example, the feasibility of implementation of alternative reforms matters and should be taken into account in the final analysis. Nonetheless, knowing the cost-effectiveness or cost-benefit of different interventions is clearly useful information.

Methodologies for cost analysis have been developed and have long been used to inform policy in areas such as health, education, transport, construction, and social protection. There is no standard approach, but there is a large literature to draw from. This paper has provided a general framework for considering both the benefits and costs of a reform or programme aimed at curbing corruption, either as a primary goal or as an intermediate goal that contributes to other development objectives.

The first step is to establish clear and commonly shared measurement criteria and then to measure the benefits of reforms. A range of relevant anti-corruption outcomes can be credibly measured for the purposes of cost-effectiveness analysis, such as numbers of bribes reported, victims of corruption, or ghost workers, absenteeism rates, and so on. Some effectiveness measures can be expressed in monetary terms, which is a condition for cost-benefit analysis. These often relate to public financial management interventions. Examples include the value of assets recovered from criminal investigations, leakage of funds in a value chain, the financial value of bribes, and so on.

The next step is to measure costs. Although there are no unique challenges in terms of cost measurement in the governance and anti-corruption field, cost-analysis studies do in general need fine-grained cost data that go beyond standard budgets. As the field matures, a consensus may emerge regarding the best ways to measure benefits and costs of governance and anti-corruption reforms. Such standardisation will make comparisons more useful and reliable.

There are unexploited possibilities, but also limitations, for using cost-effectiveness or cost-benefit analysis for different anti-corruption interventions. For simpler interventions focusing on service delivery, the possibilities are good. But there are often substantial constraints on the applicability of these techniques to complicated interventions such as national anti-corruption strategies and anti-corruption authorities. Either all benefits of such interventions have to be monetised and measured in monetary terms, or intuitive weights have to be established for the different non-monetary benefits. That is difficult, although not impossible.

Cost-analysis approaches benefit from being part of a larger evaluation design. Two impact evaluation designs that integrate use of cost analysis were presented in this paper. The first design, called *one-or-the-*

*other*, provides guidance on how to choose between two or more alternative anti-corruption measures. The second design, called *with-or-without*, tests whether the inclusion of a package of integrity measures in sector programmes leads to better overall development results. If the evaluator is invited to shape the design of interventions and the basis for evaluation, then cost-effectiveness estimates can be obtained for many governance and anti-corruption activities. This second design bypasses common corruption measurement challenges by virtue of its comparative approach. We do not have to measure corruption to determine the cost-effectiveness of different integrity initiatives, only differences in the key development outcomes. If selected interventions, or a package of interventions, are implemented in selected facilities or localities, one can better isolate both costs and benefits.

An evaluation that incorporates cost analysis, by providing concrete, quantitative comparisons of cost-effectiveness and/or the cost-benefit profile of an initiative, can help decision makers:

- Justify use of scarce resources on planned interventions. Planners can appraise the expected value of governance and anti-corruption interventions vis-à-vis alternatives, and to a lesser extent compared to interventions in other sectors.
- Establish standards and criteria for failure. For example, the analysis gives a decision makers a reference tool for the hard decision of when to “pull the plug” on a project that does not live up to expectations.
- Minimise subjectivity and relativity in assessments.
- Monitor levels of effectiveness of a project over time and across projects.
- Build up the overall evidence base on “what works and why” in anti-corruption, and nuance the debate on whether, when, and to what extent anti-corruption activities offer good value for money.

Application of cost analysis in the governance and anti-corruption field is in its infancy. Availability of data and experience with methodologies are still limited. But the same was true for the health sector 50 years ago, and for the education sector 20 years ago. Investments should be made in adapting and refining more advanced valuation techniques, such as willingness to pay, for the purposes of cost-benefit analysis. Cost-effectiveness analysis uses a more basic, intuitive methodology, so the main challenge is to proactively plan for the inclusion of this method in designs and evaluations of relevant reforms and programmes. One evaluation at a time, we can expect to see a clearer picture emerge to indicate which approaches are the most effective in controlling corruption at the lowest cost.

While there is wide agreement that fighting corruption is the moral thing to do, the use of cost-effectiveness and cost-benefit analyses will show when and where fighting corruption is the smart thing to do – and how best to do it. Such evaluations will provide a language based on social welfare optimisation, an approach that could connect policy makers with grassroots organisations, donors with governments, and anti-corruption experts with sector specialists.

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Cost-effectiveness and cost-benefit analysis methods are currently underutilised in evaluations of governance and anti-corruption reforms in developing countries. This limits opportunities to inform policy and may lead to suboptimal reform choices and programme designs. In general, complicated interventions such as national anti-corruption strategies or anti-corruption agencies do not lend themselves easily to cost-analysis approaches, often due to the challenge of measuring the impact in terms of reduced corruption. However, cost-effectiveness analysis – and in some cases cost-benefit analysis – of sector programmes with inbuilt anti-corruption measures is a useful tool for guiding decision makers as they choose between alternative integrity measures and assess the return on investment. Cost-benefit analysis hinges on an ability to translate outcomes into a monetary value, something most feasible with public finance-related interventions. Where outcomes cannot be monetised, there are still opportunities for cost-effectiveness analysis. Two impact evaluation designs are presented that make use of cost-effectiveness analysis to overcome corruption measurement challenges. Using such designs, the value of anti-corruption activities can be evaluated even without measuring corruption.