

The effectiveness of anti-corruption policy

What has worked, what hasn't, and
what we don't know



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July 2011

The EPPI-Centre reference number for this report is 1909.

This report should be cited as: Hanna, R., Bishop, S., Nadel, S., Scheffler, G, Durlacher, K. (2011) The effectiveness of anti-corruption policy: what has worked, what hasn't, and what we don't know-a systematic review. Technical report. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
ISBN: 978-1-907345-14-2

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List of abbreviations

3ie	International Initiative for Impact Evaluation
ANM	Assistant nurse midwives
AusAID	Australian Agency for International Development
CCC	committees of concerned citizens (Bangladesh)
CIA	Central Intelligence Agency (US)
CID	Center for International Development, Harvard University, US
CPI	Corruption Perception Index
DFID	Department for International Development (UK)
DMV	Department of Motor Vehicles (Delhi, India)
EFA	Education for All
FCPA	Foreign Corrupt Practices Act (US)
GDP	Gross domestic product (GDP)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (Germany)
HKS	Harvard Kennedy School (US)
IBSS	International Bibliography of Social Sciences
ICT	Information communication and technology
IDEAS	Internet Documents in Economics Access Service, Department of Economics, University of Connecticut (US)
IFPRI	International Food Policy Research Institute
IPA	Innovations for Poverty Action
JOLIS	Joint Bank-Fund Library Network
JPAL	Abdul Latif Jameel Poverty Action Lab
KPK	Komisi Pemberantasan Korupsi (Corruption Eradication Commission of Indonesia)
MPRA	Munich Personal RePEc Archive (Germany)
MSI	USAID Management Systems International
NBER	National Bureau of Economic Research, Cambridge, Massachusetts (US)
NCJ	National Criminal Justice (Reference Series) (US)
NEP	NGO Education Partnership (Cambodia)
NGO	Non-governmental organisation
NORAD	Norwegian Agency for Development Cooperation
NPM	New public management
OECD	Organisation for Economic Co-operation and Development
OPEN	Online Procedures Enhancement for Civil Application

PAR	Public administration reform
PETS	Public expenditure tracking survey
PO	People's organisations
PPP	Purchasing power parity (WB)
PSI	pre-shipment inspection
RCT	Randomised control trial
SSCI	Social Sciences Citation Indexes
SSRN	Social Science Research Network
TI	Transparency International
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WB	World Bank

Structured abstract

Public sector corruption is a key barrier to effective service delivery and an impediment to economic growth and development. This report provides findings from a systematic review on the effectiveness of micro-level anti-corruption strategies implemented in developing countries. Our exclusion criteria were applied to nearly 6,300 papers and resulted in the inclusion of 14 studies in our synthesis of results. We employed the ‘narrative synthesis approach’ to synthesise data extracted from the included studies. The review focuses on the distinction between interventions that utilised monitoring and incentives mechanisms and interventions that changed the underlying rules of the system. We find convincing evidence that monitoring and incentive-based interventions (both financial and non-financial) have the potential to reduce corruption, at least in the short term. We also find more-limited evidence that decentralisation, a strategy that changes the rules, has the potential to reduce corruption in certain settings. Strategies that change the rules are thought to be more sustainable in the long term, but additional research is needed to better understand the long-term effects of this and monitoring and incentives interventions. The review concludes with several policy recommendations and highlights pertinent areas for further research.

Executive summary

Background

In many developing countries, public sector corruption is a key barrier to effective service delivery. Corruption can prevent the equitable allocation of goods and services to citizens by seeping into all aspects of life, from starting a new business to getting a passport or to seeing a doctor. It can take many forms, from bureaucrats asking citizens for bribes to perform basic services, to hospital employees stealing medicines that were meant to be distributed to the poor, to bureaucrats receiving salaries for jobs that they do not accomplish. On a macro level, many scholars believe that corruption impedes economic growth and development (Mauro 1995, Dreher and Herzfeld 2005).

In this review, we adopt the definition of corruption given by Banerjee et al. (2011) as ‘an incident where a bureaucrat (or an elected official) breaks a rule for private gain’. This definition includes the most common forms of corruption. For example, this would include a situation where a bureaucrat overtly asks a citizen for a monetary bribe in order to perform a basic, but often illegal, service, such as providing someone with a residency card to vote in a district in which he or she does not live. However, it could also include a bureaucrat intentionally delaying a service, such as a new business license, until the citizen pays a bribe.

Based on the underlying theoretical models, we classify policy prescriptions into two types of categories: (1) *monitoring and incentives programmes* and (2) *programmes that change the rules of the system*. In this review, we discuss the existing evidence on the benefits and costs of programmes that fall under both categories.

Monitoring and incentives programmes are typically based on the principal-agent model. In this model the ‘principal’, who can be seen as a top-level policy-maker or the [voting] population at large, wants to achieve a goal such as ensuring that individuals who receive a voter identification card live in the district named on the card. The policy-maker entrusts the ‘agent’, typically a bureaucrat or civil servant, to implement this goal. However, the agent may have his or her own agenda - such as earning additional income through bribes - and it is often difficult for the principal to know if the agent is achieving the principal’s goal or following his or her own agenda, given that the end goal can be difficult to observe.

Policy interventions that aim to solve this problem increase the monitoring of the agent’s behaviour and/or provide incentives for the agent to pursue the principal’s goal rather than his or her own. Typically, monitoring and incentives programmes attempt to reduce corruption by increasing the risks or costs associated with an agent’s decision to participate in corrupt behaviour. The anti-corruption strategy will therefore increase the probability of getting caught by increasing monitoring and increase the punishment applied to an agent caught engaging in corrupt activities. While monitoring and incentives programmes may be implemented on their own, monitoring is ineffective without a simultaneous incentives programme or when the incentive is not large enough.

The second category of interventions focuses on programmes that *change the underlying rules of the system* (see Banerjee et al. 2011 for a more-detailed theoretical discussion of the underlying model). As in the principal-agent model, the underlying model here also assumes that corruption will occur because the principal and the agent have a different agenda and that monitoring the agent will be difficult since the end goal is hard to observe. However, this model assumes

that interventions which aim to achieve the principal's goal through increased monitoring and incentives will be futile, either because the monitors themselves will be corrupted or because the bureaucrats will create new methods for obviating the rules (see, for example, Banerjee et al. 2007). Thus, rather than invest additional effort and resources into improving monitoring and adding extra incentives, these policy interventions aim to change either an aspect of the government system itself or the way the government delivers services so that the agent's own incentives are naturally better aligned with those of society and there are fewer opportunities or reasons to engage in corruption.

Objectives

In the process of providing a systematic review of the evidence on the effectiveness of anti-corruption policies, we aim to answer the following questions:

- What types of policy levers are available to reduce corruption?
- Which types of policies have been subjected to rigorous evaluation, and what have these evaluations found?
- Which types of policies have not been subjected to rigorous evaluations, and require further testing?
- What are the primary criteria that policy-makers should take into account when deciding on a particular policy?

Methods

We used the 'textual narrative synthesis' method, outlined by Barnett-Page and Thomas (2009). This method is used to divide the studies into relatively homogenous groups, report study characteristics within each group and articulate broader similarities and differences among the groups. Accordingly, we organised the included studies into categories based on their methodological approach, the type of treatment they evaluated, the sector in which the programme was implemented, and several other factors. We then compared the relative effectiveness of each corruption-reduction intervention, while keeping in mind its level of quality and applicability to other contexts. As members of the review team read through and analysed each study, we recorded both the positive and negative outcomes reported by the authors. We considered numeric, categorical and narrative (free-text) data within each included study to determine our results. When the study employed an econometric evaluation we recorded the results from their best specified model.

Details of the included studies

Of the 14 papers included in the review, six are randomised control trials (RCTs), three are quasi-experimental studies, and five are observational studies. The majority was published in peer-reviewed journals and the rest are working papers. All except for two have been released within the last five years. The studies were conducted across Africa, Asia and Latin America, including Argentina, Brazil, India, Indonesia, Madagascar, the Philippines and Uganda. Most of the studies evaluated monitoring and incentives strategies, although a small number focused on strategies, such as decentralization, that change the rules.

Conclusions

Under the category of monitoring and incentives, the programmes included in our analysis found varying levels of success. In order to work well, monitoring

programmes have two important requirements: first, they must be implemented and monitored by a party desiring to lower corruption, and second, they must be combined with some incentive programme. Incentives can be financial or non-financial. For example, incentives can take the form of a wage-reduction punishment for individuals discovered to be corrupt or a strong media campaign that publishes corruption levels of elected officials - putting punishment into the hands of the population that votes or receives public services. It is important to note that programmes that relied on the use of media were largely implemented in regions where there were reliable media already available. Access to newspapers, radios and televisions is not always available or reliable. Therefore, the use of local media may be difficult to exploit in some areas of the developing world, but where infrastructure already exists the strategy could be highly cost-effective.

Among programmes that seek to change the rules of the system we investigated decentralisation and open procurement auctions. Decentralisation is a promising intervention, especially when pre-implementation includes building infrastructure and the capacity of local government workers, possibly with the support of a locally trusted and knowledgeable NGO (non-governmental organisation). Additionally, success appears more probable when the programme is coupled with an increase in community participation and interest in addressing local public service issues because it increases the implementer's accountability to the population. Furthermore, the initial level of community cohesiveness and inclusion of citizens from all socio-economic classes may greatly influence the level of success in reducing corruption and not merely shifting corruption from central government officials to local elites (Bjorkman and Svensson 2009, Chavis 2010, Olken 2007).

When attempting to reduce the capture of public funds and resources, several strategies appeared to be effective across six studies in various sectors and settings: decentralisation, institutional monitoring with non-financial incentives, community monitoring with non-financial incentives, and open procurement auctions. Studies that measured programme success as a reduction of absenteeism found success in a community monitoring and decentralisation scheme, but mixed results based on evidence from two institutional monitoring and financial incentives strategies.

Policy and practice recommendations

- *Monitoring and incentives should be combined.* A programme that utilises this combination can prevent corruption by increasing the probability of being caught engaging in corrupt activities, and increasing the punishment for being corrupt (or, similarly, increasing the reward for not being corrupt). Monitoring on its own is ineffective, because the individual must face a punishment for being corrupt. Similarly, increasing the incentive to stay honest has no effect when the probability of getting caught is too small.
- *The monitoring and incentives scheme must align with all involved parties' incentives and locally specific market structures.* When nurse managers permitted nurse absences to bypass a monitoring mechanism intending to punish absenteeism, the programme became toothless (Banerjee et al. 2007). Similarly, if auditors are corruptible themselves, monitoring will be ineffective.
- *Community-level monitoring can be successful, but only when the community can punish corruption.* Giving community members an opportunity to report corruption has no effect on corruption when the

corruptible officials do not face punishment if found corrupt (Banerjee et al. 2007, Olken 2007). However, when the community has the power to punish corrupt individuals, for example by holding elections that are likely to unseat a corrupt individual, then these programmes may succeed (Brollo 2009, Ferraz and Finan 2008). We emphasise, however, that community-level monitoring has had mixed results, and appears to be an intervention whose success is highly variable and dependent on the conditions surrounding the incentives and the probability of getting caught, and a community's capacity. Therefore, community-based monitoring programmes should be carefully designed.

- *Media can be a useful incentive for enforcing corruption reduction.* When bureaucrats or elected officials are held responsible for corruption, it is possible to use the threat of unseating those found corrupt or publicising their corrupt behaviour as an incentive (Brollo 2009, Ferraz and Finan 2008, Francken 2009, Reinikka and Svensson 2003). In this case, media such as newspapers, television or radio are useful and often necessary methods of publicising corruption to the electorate, to empower the community to punish corrupt bureaucrats and elected officials. Further implementation considerations include having an established and trusted media outlet in the community and using media that can best reach the community based on its education level.
- *Decentralisation may be particularly successful where there is local capacity and high levels of participation.* Decentralisation can reduce corruption by bringing the accountability for programme implementation to elected officials who are elected exclusively by the population they serve, and who risk losing their elected position if a programme is highly corrupt. Because decentralisation shifts programme implementation responsibilities to a different set of individuals it is important that the new managing department has the capacity to run the programme in question. For this reason, decentralisation strategies had the greatest success when combined with high levels of community participation and when pre-implementation included building capacity of local government workers and infrastructure (Bjorkman and Svensson 2009, Chavis 2010). Thus, it is important to be aware that decentralisation may be an expensive policy when implemented in communities that lack participation and have limited local capacity. However, more research is needed to understand long-running effects of decentralisation.
- *Decentralisation is only successful when decision-makers and service providers are held accountable by programme recipients.* When accountability is upheld through elections, then voters must be aware of corruption levels. Some successful decentralisation programmes combine decentralisation with community monitoring programmes, to ensure that the voters and service recipients know true corruption levels (Bjorkman and Svensson 2009, Chavis 2010).
- *NGOs can be useful tools in implementing programmes that change the rules or alter monitoring and incentives schemes.* In several cases examined, anti-corruption strategies appeared to be more effective when a locally trusted NGO was able to provide training, supervision and support implementation (Banerjee et al. 2007, Bjorkman and Svensson 2009, Chavis 2010, Duflo et al. 2010, Francken 2009, Olken 2007, Reinikka and Svensson 2003).

In summary, the most successful corruption-reduction strategies create a situation in which the potentially corruptible elected or career government official chooses not to engage in corruption because the cost of corruption outweighs its benefits. This can be brought about by increasing both the probability of being caught and the punishment if caught. It can also be brought about by placing the corruptible decision in the hands of someone who faces a naturally higher cost of being corrupt.

Research recommendations

This review makes clear that one glaring obstacle to the implementation of evidence-based anti-corruption reforms is the lack of reliable research. The body of micro-level empirical studies on anti-corruption interventions is extremely small at this point. Thus, it is imperative that more such research is conducted, and that this examines each anti-corruption strategy in a variety of different settings.

However, it is important that these future efforts are properly focused. Based on the anti-corruption literature reviewed for this report, we offer recommendations below for guiding future research:

- i *Test multiple strategies simultaneously.* Many of the papers discussed here evaluate the costs and benefits of a specific corruption-reduction programme. However, very few studies examine the relative cost-effectiveness of several programmes. We recommend that future studies implement more than one intervention at the same time, but across different populations, as with Olken (2007), to facilitate the evaluation of the relative benefits of different corruption-reduction strategies.
- ii *Incorporate costs and cost-benefit calculations into analysis.* Such information is vital for policy-makers trying to decide which anti-corruption strategy to implement, and is remarkably absent from the anti-corruption literature. Many evaluations of corruption-reduction strategies examine only the reduction in corruption, without considering the cost of implementing that strategy. To understand the overall and relative success of a corruption-reduction strategy it is important to know its cost-effectiveness.
- iii *Increase efforts to explore anti-corruption strategies that change the rules.* Preliminary analysis suggests high potential for strategies to decrease corruption by eliminating the opportunities for engaging in corrupt activities through a change in process (Banerjee et al. 2007, 2009). Programmes that change the rules of the system can reduce the opportunities for engaging in corrupt behaviour and can be better at aligning the incentives of all stakeholders. Yet such strategies are also the least explored. There are opportunities for two types of research: both theoretical and empirical research should examine methods of changing the rules in order to reduce opportunities for corruption. Empirical methods should analyse the effectiveness of existing rule-changing strategies, such as those that involve decentralisation and the replacement of corruptible elected or career government workers with automated programmes. With regard to the latter in particular, Davis (2004) and Chawla (2004) provide promising evidence that technology can be an effective anti-corruption strategy, but it would be extremely helpful to see more analysis on this topic. A shift in the percentage of women represented in government and bureaucratic positions does not appear to be a viable strategy to reduce corruption. However, further testing could validate this finding based primarily on hypothetical situations.

1. Background

1.1 Aims and rationale for review

In many developing countries, public sector corruption is a key barrier to effective service delivery. Corruption can prevent the equitable allocation of goods and services to its citizens by seeping into all aspects of life, from starting a new business to getting a passport or seeing a doctor. It can take many forms, from bureaucrats asking citizens for bribes to perform basic services, to hospital employees stealing medicines that were meant to be distributed to the poor, to bureaucrats receiving salaries for jobs that they carry out inadequately or do not complete.

On a macro level, many scholars believe that corruption impedes economic growth and development. Mauro (1995) provides the earliest empirical evidence for this, and other recent studies support this finding. For example, Dreher and Herzfeld (2005) estimate that an increase in corruption by about one point, as measured by the perceptions based International Country Risk Guide index, reduces gross domestic product (GDP) growth by 0.13 percentage points and GDP per capita by US\$425. Furthermore, Transparency International (TI) points out that corruption may damage not only a country's economy, but also its political systems and institutions, civil society, and natural environment. As such, most development agencies have incorporated anti-corruption policies into their core strategies, with the World Bank (WB) alone supporting over 600 anti-corruption programmes since 1996.

However, understanding how to eliminate (or even just reduce) corruption is a challenging task on many levels. First, due to the hidden and illegal nature of corruption, it is extremely difficult to measure its extent and how it affects, for example, political institutions or service delivery. No one wants to talk about it or admit that they participate in it for reasons that range from embarrassment to fear of punishment. This is problematic because if we cannot measure corruption or study its features then it is difficult to determine how to actually combat corruption or to ensure that the implemented strategies are actually reducing it. Second, many individuals personally benefit from corruption, often with a substantial amount of money involved. Therefore, it is always possible that the potential financial gains at stake will cause individuals to find ways to undermine any effect that a given policy intervention might otherwise have on reducing corruption. Finally, interventions that work in one setting may not necessarily apply to another. The success or failure of a given anti-corruption strategy may depend in large part on the specific context in which the strategy is implemented.

Due to these difficulties, there is a relatively small base of reliable research on effective methods of reducing corruption. However, in recent years, the academic literature has demonstrated a fair amount of progress in developing methods for measuring the incidence of corruption, describing the channels through which corruption operates, and beginning to test potential policy interventions to combat corruption. In this review, we analyse existing evidence on the effectiveness of micro-level anti-corruption strategies - focusing on high-quality quantitative evidence - in order to synthesise the key lessons and discuss how these findings can translate into policy. We also discuss gaps in our understanding of policy interventions, and provide guidelines for how researchers and practitioners can address these gaps.

1.2 Definitional and conceptual issues

1.2.1 What is corruption?

There are many different but overlapping definitions of corruption, from unethical behaviour to political misconduct to bribe-taking to the sale of government property for personal gain (see, for example, Shleifer and Vishny, 1993 and Svensson, 2005). To avoid misunderstanding, we provide here a clear definition of corruption that we use throughout the review. Specifically, we adopt the definition of corruption given by Banerjee et al. (2011) as ‘an incident where a bureaucrat (or an elected official) breaks a rule for private gain’. We use the term ‘bureaucrat’ in this review to encompass all public employees or officials: not only government administrative staff, but also public school teachers, government hospital nurses, etc. The term “official” refers to bureaucrats and individuals in elected positions, while the term “elected official” specifies those that have been elected into office.

This definition includes the most common forms of corruption. For example, it would include a situation where a bureaucrat overtly asks a citizen for a monetary bribe in order to perform a basic, but often illegal, service, such as providing someone with a residency card to vote in a district in which he or she does not live. However, it could also include a bureaucrat intentionally delaying a service they are supposed to provide, such as a new business license, until the citizen pays a bribe. Finally, as Banerjee et al. (2011) discuss, corruption ‘[encompasses] more nuanced forms of bureaucratic corruption. For example, it would include nepotism, such as if a bureaucrat provided a government contract to a firm owned by his or her nephew rather than to a firm that ought to win a competitive, open procurement process. This definition would also include the bureaucrat who “steals time”: he or she may, for example, not show up to work, but still collect his or her paycheck’.

1.2.2 Types of micro-level policy prescriptions

Based on the underlying theoretical models of addressing corruption, we classify policy prescriptions into two categories: (1) *monitoring and incentives programmes* and (2) *programmes that change the rules of the system*. In this review, we discuss the existing evidence on the benefits and costs of programmes that fall under both categories.

Monitoring and incentives programmes are typically based on the principal-agent model. In this model the ‘principal’, who can be seen as a top-level policy-maker or the [voting] population at large, wants to achieve a goal such as ensuring that individuals who receive a voter identification card live in the district where they register. The policy-maker entrusts the ‘agent’, typically a bureaucrat, to achieve this goal. However, the agent may have their own agenda – such as earning additional salary through bribes – and it is often difficult for the principal to know if the agent is achieving the principal’s goal or following the agent’s own agenda, given that the end goal can be difficult to observe.

The principal can punish the agent, either by dismissing them from their position or docking their salary (or withholding a bonus), if the principal finds that the agent has engaged in corruption. However, in order to discover corruption, the principal must monitor the agent. The principal will only monitor the agent and impose a punishment for engaging in corrupt activities if the cost of monitoring and rewarding uncorrupt officials is less than the benefit of reducing corruption. Meanwhile, the agent will typically only engage in corruption if the risks,

comprising the probability of being caught and the associated punishment, are less than the benefits, comprising the additional salary or reduction in work.

Policy interventions that aim to solve this problem increase the monitoring of the agent's behaviour and/or provide incentives for the agent to pursue the principal's goal rather than the agent's own. Typically, monitoring and incentives programmes attempt to reduce corruption by increasing the risks or costs associated with an agent's decision to participate in corrupt behaviour. The anti-corruption strategy will therefore increase the probability of getting caught by increasing monitoring and/or the punishment applied to an agent caught engaging in corrupt activities. However, monitoring does not work without a simultaneous incentives programme, and is ineffective if the incentive is not large enough.

The second category of interventions focuses on programmes that *change the underlying rules of the system* (see Banerjee et al. 2011 for a more-detailed theoretical discussion of the underlying model). As in the principal-agent model, the underlying model here also assumes that corruption will occur because the principal and the agent have a different agenda and that monitoring the agent will be difficult since the end goal is hard to observe. However, this second model assumes that interventions which aim to achieve the principal's goal through increased monitoring and incentives will be futile, either because the monitors themselves will be corrupted or because the bureaucrats will create new methods for obviating the rules (see, for example, Banerjee et al. 2007). Thus, rather than invest additional effort and resources into improving monitoring and adding extra incentives, these policy interventions aim to change either an aspect of the government system itself or the way the government delivers services so that the agent's own incentives are naturally better aligned with those of society and there are fewer opportunities or reasons to engage in corruption.

Unlike monitoring and incentives interventions, programmes that change the rules may take on various meanings depending on the exact context of corruption. One rule-changing intervention is decentralisation, in which the responsibility for the implementation of a given policy passes from a higher level of government to a lower one. For example, a decentralisation intervention may shift power from the central government to state or city government officials. In theory, since local officials (especially elected ones) are held more directly accountable to the populations they serve, they may have a stronger incentive to reduce corruption than higher levels of government do. In other words, by decentralising the responsibility for governing, we may align government officials' incentives more closely with those of society.

Other rule-changing interventions have only recently begun to be studied. They include the use of technology to bypass various lengthy bureaucratic procedures, thereby reducing the opportunity for bribe-taking (Davis, 2004 and Chawla, 2004), and making changes to hiring or selection processes in order to obtain less-corrupt workers. The latter category includes programmes that increase the number of female employees, in line with the theory that women are inherently less corrupt than men (Alatas et al. 2008, Alhassan-Alolo, 2008, Vijayalakshmi, 2008).

Programmes that change the rules of the system appear to be less common than monitoring and incentives programmes and therefore have fewer high-quality evaluations. Nevertheless, the advantage that rule-changing programmes have over strict monitoring/incentives programmes is that they bypass the risk that the monitors themselves may become corrupt or that the bureaucrats will find ways to skirt the newly instituted monitoring and incentives procedures. By attempting to align the bureaucrats' own incentives with those of society, rule-changing programmes have the potential to be more sustainable in the long term.

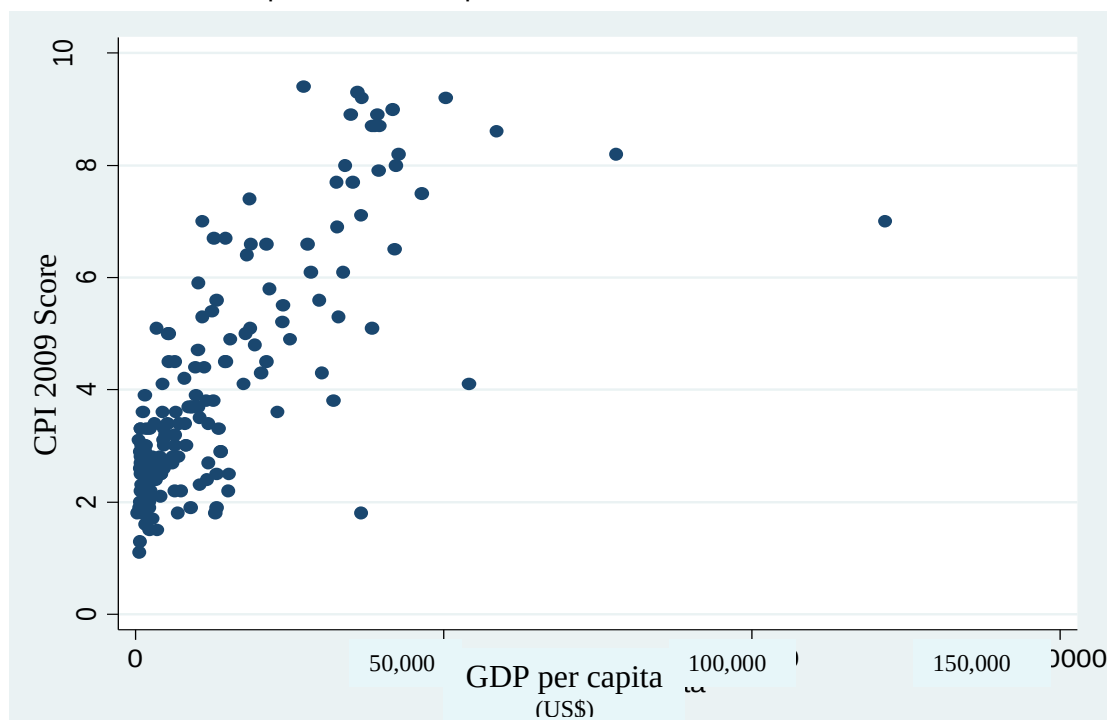
1.3 Policy and practice background

1.3.1 Two key facts about corruption data that drive current policy and practice

- i. *Corruption is more prevalent in relatively poor countries.* This relationship is made apparent by looking at the strong negative relationship between countries' level of corruption and their per-capita GDP. For example, using Transparency International's (TI) 2009 Corruption Perception Index (CPI) and data from the *CIA World Factbook*, we illustrate the relationship between corruption and national income levels. Corruption is measured on a scale from 0 to 10, where 0 is the highest level of corruption and 10 is the lowest. As Figure 1.1 clearly shows, poor countries tend to have corruption scores closer to zero, signalling relatively high levels of corruption. Corruption levels then decrease (raising the corruption score) as per-capita GDP increases.

Moreover, Svensson (2005) observes that all countries in the top 10 percent of the worst rankings for corruption, according to four measures of corruption with broad regional coverage (Control of Corruption Index, CPI, International Country Risk Guide, and International Crime Victim Surveys) are developing or transitioning countries, and that, with few exceptions, these countries have low income levels.

Figure 1.1 The relationship between corruption and income



Note: The graph depicts the relationship between corruption using the Corruption Perception Index (CPI) measured by Transparency International (TI) and US\$ GDP per capita (purchasing power parity – PPP) figures collected from the *CIA World Factbook*.

- ii. *Corruption often results in the misallocation of services.* Recent academic studies have shown exactly how corruption can distort the provision of public goods. For example: Bertrand et al. (2007) demonstrate that corruption at the New Delhi DMV (Department of Motor Vehicles) resulted in extremely poor drivers obtaining their driver's licenses for a fee at a faster rate than good drivers who followed the application process; and Barron and Olken (2009) find

that corruption at truck weigh stations in Indonesia resulted in damage to Indonesian roadways, which was ultimately funded by taxpayers.

Due to these two facts, corruption eradication has emerged as a key focus of development policy in the past two decades. International organisations, governments, and local NGOs (non-governmental organisations) have all focused on improving accountability in the provision of government services.

1.3.2 International and regional level anti-corruption policies and practices

Since the middle of the 1990s, the international community has become increasingly committed to decreasing corruption. In particular, the United Nations (UN) and the Organisation for Economic Co-operation and Development (OECD) voluntarily entered into commitments to reduce corruption by public sector officials. In December 1996, the UN established an International Code of Conduct for Public Officials¹. While non-binding, the code established a set of corruption goals toward which countries should strive. Additionally, in 1999 the OECD held a convention focused on corruption, specifically between private sector companies that do business internationally and the public sector officials who work with them (OECD, 2005). All OECD member countries were required to ratify the legislation created from this anti-bribery convention and comply with peer reviews that are made publicly available.²

The WB has also played a leading role in making anti-corruption reforms a greater priority for the international community. In 2005, the WB set an important precedent by shifting from solely overseeing corruption within its institution to using corruption eradication as a carrot for countries that desired additional funding. The following year, the then WB President, Paul Wolfowitz, outlined three newly developed WB policies for eliminating corruption: expanding anti-corruption work at the country level, minimising risks of corruption in WB-funded projects, and increasing cooperation with other anti-corruption organisations (Wolfowitz, 2006).

The WB does research on the corruption levels of different countries. The *Governance Matters* series, now in its eighth iteration, includes ‘control of corruption’³ as one of its six governance indicators. The report analyses trends of countries and regions over time and, perhaps most importantly, it offers a measure of each country’s level of corruption, which it then takes into account when considering loans or other programmes. One criticism of the report, however, is that the scores are relative in that countries are ranked, and not given objective scores. Thus, an overall improvement in corruption globally could cause some countries to drop in their ranking, giving rise to the misperception that they have become more corrupt. Another criticism is that some of the scores are based on perception, which can be clouded by the expectations of the individual being asked.

The WB also publishes the annual *Doing Business* reports, which include measurements of delays and red tape in establishing businesses in countries, in addition to other factors such as regulation and labour rigidities. This information is especially useful for international companies considering where to open offices. Scores can presumably shame or pressure countries into resolving corruption

¹ For more information see: Argadoña (2007).

² To view peer reviews and see more information about the convention, visit the OECD website: www.oecd.org/findDocument/0,3770,en_2649_34859_1_1_1_1_1,00.html

³ Control of corruption is defined as ‘using public power for private gain’ - the same as the definition used in this report. Kaufmann et al. (2009).

problems that deter revenue-bringing companies from entering into business in a given country.

In addition to the WB, the OECD and the UN, there are a number of international and regional organisations that are dedicated to fighting corruption or have launched anti-corruption initiatives in recent years. TI and the U4 Anti-Corruption Resource Centre are two influential international organisations that are solely dedicated to combating corruption. On a regional level, the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, and the Inter-American Development Bank have all employed similar anti-corruption procedures and standards as the WB, albeit to varying degrees.

Despite their good intentions, the role of international aid organisations in corruption eradication has been hotly debated for several reasons. First, Easterly (2006) argues that the international community has been unsuccessful in its attempt to funnel money away from corrupt governments. Second, other researchers find that the presence of international aid actually increases corruption by giving local officials new opportunities to swindle money (Svensson 2000). Both of these points are supported by Alberto Alesina and Beatrice Weder (Alesina and Weder, 2002) in their examination of whether corrupt governments receive less foreign aid. They find that overall, multilateral organisations do not discriminate based on the level of corruption in a government. Scandinavian countries and Australia are less likely to support corrupt governments, but the US is slightly more likely to support corrupt governments (and much less likely to support undemocratic governments). The authors also tentatively conclude that an increase in aid also increases corruption.

A third reason why the role of international organisations in general (not only aid organisations, but also multilateral groups such as the OECD) in corruption is disputed is that it is difficult for them to have a direct impact on corruption. Often the most that they can do is to withhold support from corrupt governments, provide technical support to those countries wishing to implement corruption-reduction reforms, or develop corruption-reduction treaties to which countries can commit, but which are then policed within the community itself. Thus, although international and regional organisations have paid increasing attention to corruption in recent years, they face formidable challenges.

1.3.3 National level anti-corruption policies and practices

In recent years, development agencies within the governments of richer nations have incorporated corruption-reduction programmes into their work and even supported projects aimed solely at reducing corruption. To name a few, the Australian Government (Australian Agency for International Development; AusAID) works primarily with South-East Asian countries and the Pacific islands, while the UK (Department for International Development; DFID), US (United States Agency for International Development; USAID), Norway (Norwegian Agency for Development Cooperation; NORAD) and Germany (Deutsche Gesellschaft für Technische Zusammenarbeit; GTZ) work with nations throughout the developing world. Beyond these organisations, other not-for-profit organisations, foundations and research institutions have played a hand in funding or conducting research that allows practitioners and governments to understand better the issues specific to their country and how to advance their anti-corruption work.

Many national governments have created specific *government agencies to combat corruption*. These agencies are designed to be independent watchdogs within the government. For example, Indonesia instituted the Komisi Pemberantasan Korupsi

(KPK, the Corruption Eradication Commission of Indonesia) in 2002, with the aim of investigating and prosecuting corruption within the country. The Commission has prosecuted over 80 cases since its inception (Rayda, 2010). Even countries with lower institutional capacity, such as Sierra Leone, have created their own anti-corruption agencies. In April 2010, the Minister of Fisheries and Marine Resources of Sierra Leone was indicted for graft and abuse of office (Fofana, 2010). Although prosecutions have taken place, one criticism of these programmes is that they are implemented largely to create the appearance that the country has reduced corruption in order to please the international donor community. As a result, they sometimes have little actual effect (Easterly, 2006).

Another approach to corruption reduction is *decentralisation*. One example is the Philippines. After the end of the Marcos dictatorship the Filipino Government devolved decision-making power to local community organisations through its Policy Agenda for People-Powered Development project in the early 1990s. The Local Government Code, a central tenet of the programme, transferred responsibility for basic services and facilities as well as regulatory power to local governments. NGOs and people's organisations (POs) were encouraged to participate in regular local hearings and referenda (Food and Agriculture Organization 2001).

Decentralisation programmes are often implemented in partnership with NGOs and international organisations. For example, Education for All (EFA), the international organisation dedicated to meeting the Millennium Development Goal of universal primary education, has encouraged decentralisation in school management and teacher training. In its country strategy for Cambodia, EFA developed school parents' committees to manage operational budgets and delegated more authority in teacher management and the development of teacher-training materials for local teacher training centres. In partnership with the Ministry of Education, the NGO Education Partnership (NEP), an association of 50 organisations, was founded to support EFA's work at the local level. Members of NEP participated in dialogues about the programme and helped to fund and implement it (Kingdom of Cambodia Ministry of Education, Youth and Sport 2002).

Similarly, in 2000, with the advisory support of UNDP (United Nations Development Programme), Bangladesh undertook its Local Government Development Fund Project in which low-level governmental bodies are included in the budgetary decision-making, and public services are graded using scorecards. Another example is Macedonia, where USAID worked with Macedonian communities in 2000 on the Community Self Help Initiative to implement programmes focusing on issues such as the provision of educational services and public lighting.

To fight corruption, many governments have *passed laws designed to increase transparency in government services*. In 2003, the Government of Brazil started randomly auditing individual mayoralities' finances and publishing the results. Similarly, in countries like the Philippines, USAID has worked with governments to develop ombudsman and special prosecutor offices where individuals could safely register complaints of corruption among government officials and be confident that they would be considered. In the first year of the Philippines programme, in 2005, conviction rates of suspected corrupted officials jumped from 7 percent to 33 percent (USAID 2010). Lastly, nations have adopted procedures to ensure that abuses within the anti-corruption agency itself are reported and publically investigated.

Paying bureaucrats higher salaries is yet another approach adopted at the national level to reduce corruption. The idea behind this approach is that if bureaucrats are paid more, then they will have more to lose if their corruption is discovered (i.e.

corruption has a higher opportunity cost). Singapore attributes its corruption-free public sector to the success of this strategy (Mookherjee and Png, 1995). Programmes in Kenya, Uganda and Tanzania in 2002-03 were also successful in eliminating ghost employees, employees that do not exist, and increasing the salaries of remaining employees, who actually exist. Peruvian President Alan Garcia, in his current term in office, has battled with teachers' unions over his proposal to increase teacher salaries in exchange for their taking qualification tests on a regular basis (Salazar, 2007). Former Peruvian President Fujimori implemented a dramatic tax reform that increased the monthly salaries within the Peruvian tax collection agency from US\$50 to US\$890, and offered early retirement to individuals who declined to be subject to strict anti-corruption oversight. It was documented that tax revenues increased from 5 percent to 14 percent of GDP in two years (Durand and Thorp, 1998).

A final national level approach to corruption reduction is to remove the opportunity for corruption through *privatising corrupt government services*, such as water delivery, electricity or health care. The belief is that for-profit companies want to maximise profits, so they will eradicate inefficiencies such as rent-seeking activities or intentional delays in product delivery. However, critics argue that the privatisation process can be quite corrupt and may result in tremendous costs to the government without any improvement in service delivery.⁴

Overall, it is evident that corruption eradication is a key component of development strategy at both the international and national levels. Although millions of dollars are spent annually to reduce corruption, there is actually limited knowledge on which policies and programmes have been most successful, and therefore which are the best strategies for countries to adopt. This review aims both to provide a summary of the existing micro-level empirical evidence on anti-corruption strategies and to discuss the types of evaluations necessary to learn more about effective anti-corruption strategies.

1.4 Research background

Several general reviews of the academic corruption literature are particularly useful as a background for our review. Svensson (2005) focuses on eight key questions on corruption, highlighting key facts about what we know and do not know. Among his findings are that the level of corruption in a country is determined not only by GDP per-capita and human capital, but also by the degree of market and political competition in the country. He discusses the fact that wage incentives can reduce bribery, but only when a well-functioning enforcement apparatus exists. Finally, he observes that 'there is as yet no convincing empirical evidence that competition among officials actually reduces corruption' (Svensson, 2005). These proposals are consistent with the findings we present here.

Banerjee et al. (2011) outline the history of the methodologies that have been used for measuring corruption, including the use of qualitative data and case studies to describe specific channels of corruption, the use of perception-based studies to produce cross-country and cross-time datasets, and more recently, the implementation of audits and refined survey and data collection techniques to glean more-accurate and meaningful measurements. They also discuss open questions for future research, such as the effect that competition has on corruption, and the ways that corrupt bureaucrats have adapted to new anti-corruption policies or institutions.

⁴ For an overview on the relationship between privatisation and corruption eradication, see Tanzi (1998).

In addition, there are numerous cross-country, macro-level studies that have discussed the effectiveness of various strategies to reduce corruption or certain characteristics of countries that are associated with lower levels of corruption (Fan et al. 2009; Herzfeld and Weiss, 2003; Van Rijckeghem and Weder, 2001). However, studies of this nature often provide correlations rather than robust causal relationships, given the great differences that occur across regions and countries. In this review, we attempt to resolve this problem by including only those anti-corruption evaluations that are conducted at a micro level, so we can minimise confounding factors that mask the findings of macro-level cross-country studies.

1.5 Objectives

The aforementioned research papers and policy implementations have motivated our systematic review, which is based on the recent body of primary research that measures the effectiveness of micro-level interventions designed to decrease corruption in developing countries. These studies fall into two intervention categories: monitoring and incentives programmes and changing the rules of the system. In this review, we explore the results of both types of interventions by examining each programme's theory of change, implementation on-the-ground, cost-effectiveness, and contextual factors (e.g. social characteristics) that might have influenced reported impacts.

Beyond contextualising study findings by their geographic characteristics, we consider the sector where corruption occurs (e.g. government administration, schools), the type of corruption (e.g. bribes, stealing public resources), the point at which corruption takes place (e.g. during transfer between higher-level and lower-level government officials), influential players (e.g. substantial contributions or support from influential leaders or programme co-ordinators), the population being studied, and several other social, economic and political factors. We have incorporated these contextual factors with the notion that understanding the circumstances in which a particular strategy is successful or unsuccessful will improve our policy recommendations and better inform our research recommendations.

Some important points need to be kept in mind while laying out our objectives: First, the causal impact of different anti-corruption programmes is not necessarily well known, in part due to the difficulty of accurately measuring the effectiveness of corruption policies. Nevertheless, this technical report only includes high-quality empirical micro-level studies that offer rigorous support for their theory of change and selected outcome variable(s) - as there is no single indicator used across studies to measure corruption reduction. Second, the experimental evidence on this topic, while growing, is still scarce. As such, in addition to providing a review of the current body of evidence, we aim to provide guidance to both academics and practitioners about the types of programmes that need more thorough testing and evaluation.

In the process of providing a systematic review of the evidence on the effectiveness of anti-corruption policies, we aim to answer the following questions:

- What types of policy levers are available to reduce corruption?
- Which types of policies have been subjected to rigorous evaluation, and what have these evaluations found?
- Which types of policies have not been subjected to rigorous evaluations, and require further testing?

- What are the primary criteria that policy-makers should take into account when deciding on a particular policy?

2. Methods used in the review

2.1 User involvement

2.1.1 Approach and rationale

This review aims to synthesise existing research for policy-makers and to provide a rigorous assessment of the evidence base. Thus, our target audience is high-level government staff, non-profit organisations that focus on increasing transparency and the functioning of government services, and international organisations and foundations that aim to fund the delivery of services. While we present the data in a way that is accessible to policy-makers, the review also discusses the important technical details of the identification strategies and statistical methods.⁵

In addition to providing this review to DFID, we plan to disseminate the systematic review to the international development community through the Harvard Kennedy School (HKS) and the Center for International Development (CID) at Harvard University, among others.

2.2 Identifying and describing studies

2.2.1 Defining relevant studies: inclusion and exclusion criteria

The studies included in this technical review provide high-quality quantitative evidence on the effectiveness of specific micro-level anti-corruption strategies in developing countries (see Appendix 2.1 for the full exclusion tool and a list of excluded wealthy countries). Based on this definition, studies that did not evaluate an anti-corruption strategy were excluded.

We further limited our inclusion criteria by language and when the study was conducted. Due to constraints of time and the language skills of the research team we only included studies written in or translated into English. Additionally, given the recent advances in corruption literature, changes in the types of governments in developing countries, and the increased emphasis on combating corruption by development organisations, we only include studies conducted after 1995. In general, this exclusion criterion did not have much impact on our findings because the study of anti-corruption strategies has only taken off in recent years.

Based on our definition of corruption as ‘an incident where a bureaucrat (or an elected official) breaks a rule for private gain’ (Banerjee et al. 2011) we have excluded studies that examine corruption in settings where all parties work in the private sector. However, as previously stated, we use the term ‘bureaucrat’ in this review to encompass all public employees; not only government administrative staff, but also public school teachers, government hospital nurses, etc. Therefore, we have included studies that examine corruption (specifically absenteeism) among hospital directors or teachers that work for public institutions.

Given our research focus, we have also excluded macro-level, theoretical, qualitative and purely descriptive research on anti-corruption strategies, as well as

⁵ An identification strategy is the analytical method used to determine the answer to a posed question. In a regression, for example, identification strategy refers to the variables employed in the regression model, how those variables were collected, and the extent to which those variables successfully reflect the characteristic outcomes being tested. Researchers attempt to create a strong identification strategy that controls for endogenous factors and can, thereby, provide causal interpretations of their research rather than simple correlations.

those that aim to prove the effects of corruption. Studies of this nature are valuable in providing a holistic picture of corruption in the developing world and were therefore used to inform our search criteria and motivate our research. However, these studies are excluded from our synthesis of findings to provide a more-focused review on micro-level initiatives that have been rigorously tested.

We decided to exclude macro-level studies because they often provide cross-country correlations rather than robust causal relationships between corruption and a specific strategy. In many other cases, macro-level studies attempted to evaluate a combination of anti-corruption strategies that were simultaneously implemented in a specific country with little to no ability to report which programme caused which effect. Therefore, macro-level studies are excluded based on their limited ability to pinpoint strategies that a single organisation, such as DFID, could effectively implement. However, we have incorporated some of their findings into specific areas of the report (such as the background section).

Theoretical studies informed our research and influenced the way we structured our review. However, given the separation between anti-corruption theory and practice, these papers are excluded from the review's synthesis of findings.

We ultimately decided to exclude qualitative studies from our review, although we do incorporate some of their findings into the 'Additional discussion' (Section 4.5) and 'Research recommendations' (Section 6.3).

Finally, we excluded the plethora of literature that describes anti-corruption strategies in developing countries but offers no empirical evaluations. Although these studies were helpful in identifying the diversity of efforts being employed to fight corruption, they lack a rigorous, or at times any, assessment of their programmes or policies.

With respect to quality, we focused on studies that employed at least one of the three types of research methodologies: (1) randomised control trials (RCTs), (2) quasi-experimental methods, and (3) observational or econometric studies using regression-based approaches. Included studies are clear in their research design, and ability to measure the effectiveness of micro-level anti-corruption strategies. In addition, these studies have selected outcome variables that clearly represent the change in corruption given their specific intervention. The use of RCTs to study corruption is a recent phenomenon that provides high-quality results. Therefore, a large proportion of our studies are RCTs that have been recently conducted, and we also mention ongoing studies that, at the time of writing this report, have no preliminary results (Appendix 3.2). The second type of methodologies employed by our included studies cover, for example, regression discontinuity design, instrumental variable methods, and difference-in-differences methods. The third category differs from the second, in that the analysis is based on observational data that do not have the advantage of randomly assigned participants. For both the second and third types of studies we have been careful in assessing their internal validity and have included only those that have a credible design, i.e. a clear identification strategy.

Qualitative studies are not included in the synthesis of findings because the nature of a qualitative study makes it difficult to support causal relationships - a key goal of our systematic review. However, we have included a few studies in our discussion section showcasing key corruption eradication reforms, such as procurement and automated systems, that have not yet been effectively studied using our included research methods. The few case studies included in our discussion section explicitly describe their data collection methods, derive data from unbiased individuals, describe the population studied, and have clear and

theoretically sound outcome indicators, as well as analysis and impact discussions. These few studies provide anecdotal evidence on otherwise unstudied interventions, support similar strategies to included papers, and indicate areas for future research, but are not intended to support our causal analysis of the included quantitative studies (Section 4.5, 'Additional discussion').

The specific questions we considered during the exclusion/inclusion process are defined in Appendix 2.1.

2.2.2 Identification of potential studies: search strategy

The review team conducted a literature search to obtain papers written in English that evaluate specific micro-level anti-corruption strategies in developing countries after 1995. Members of the research team conducted searches within various electronic databases, journals and websites. Our search log provides a list of all the sources that were searched, how and when they were searched (e.g. handsearched, browsing, etc.), and the specific search terms used for each source so that the process can be replicated (Appendices 2.2 and 2.3).

Overall, the studies used in this review were identified from major academic databases such as EBSCO Business Source Premier, EconLit and JSTOR. We also collected studies by performing handsearches of key academic journals to capture recently published articles that were not found in database searches. Additional unpublished academic studies, working papers and dissertations were collected through the use of such databases as IDEAS (Internet Documents in Economics Access Service), NBER (National Bureau of Economic Research), Index to Theses, and Proquest's Digital Dissertation. Our search strategy also included online databases with practitioner (as opposed to academic) publications, such as databases of the WB and regional development banks. Among these websites we conducted a mixture of website searching and browsing to collect relevant policy evaluations from international and regional organisations, national government development agencies, foundations, and non-profit organisations. Furthermore, we used our professional contacts and knowledge of the literature to ascertain relevant evaluations and ongoing research that has the potential to contribute to our understanding of anti-corruption strategies. Finally, in reading studies during the exclusion process we used an iterative search strategy that identified additional relevant studies that were not picked up in the search efforts described above.

In adherence with the procedures of a systematic review, our process was comprehensive. We attempted to find a wide range of literature and studies, both published and unpublished, from a broad array of sources. Multiple individuals with diverse educational backgrounds replicated a random selection of the coding to ensure consistency and the ability for others to replicate our methods. We provide a detailed search string for each source, so that our process is transparent.

All reference information related to the articles collected from the databases, journals, websites and contacts referred to above was uploaded or manually entered into EPPI-Reviewer, a bibliographic tracking software developed specifically for systematic reviews. The software allowed the team to keep track of the sources used, the articles uploaded from each source, articles' reference information, and the coding of studies throughout the review process.

2.2.3 Screening studies: applying inclusion and exclusion criteria

The inclusion and exclusion criteria described above were applied initially to the titles and abstracts of the collected papers (see Appendix 2.1 for the full exclusion coding tool). While our search strategy was specific, a wide range of unrelated studies were captured due to included terms that have multiple uses across fields of study, and databases that have a wide range of search capabilities. This initial phase of exclusion was conducted conservatively to eliminate only studies that were clearly irrelevant to our review based on examining their title and, if available, the abstract. If (i) a study clearly fulfilled our initial inclusion criteria, meaning that we were not able to exclude the paper based on the exclusion criteria (described in detail above, Section 2.2.1, and below, Appendix 2.1), or (ii) more information was needed to make a decision, then the paper was uploaded into EPPI-Reviewer. Therefore, if the title and abstract did not provide sufficient information, then the study was not excluded during this initial phase, rather the paper was uploaded for the next round of applying the exclusion criteria. If the study clearly did not fulfill our inclusion criteria, meaning that it was found to have a characteristic listed in our exclusion criteria, then the paper was not uploaded into EPPI-Reviewer and it was marked as excluded from the review. The excluded and included studies are listed separately in the EPPI-Reviewer database.

During the next phase, our team uploaded and reviewed the remaining studies originally coded as ‘included’ to determine if, upon further examination, the programme evaluations still met our inclusion criteria. At this point, abstracts for several papers were located and a multitude of studies were further excluded based purely on their abstracts – as in the previous step. The remaining papers were reviewed to determine if they would meet the inclusion criteria. This often occurred in several conservative steps. After an initial review of the paper, those that were clearly in violation of inclusion criteria were eliminated and those (i) that appeared to adhere to the inclusion criteria, or (ii) for which additional information was needed (i.e. a more-detailed review of the article, or discussion by the entire review team) were marked as ‘included’. These ‘included’ studies were reviewed in more detail during the coding process, provided below in Section 2.2.4. Studies determined at further examination to have characteristics outlined in the exclusion criteria were excluded. Beyond indicating the reason for their exclusion in the coding tool, an additional note was made to further clarify the reason for exclusion (see Appendix 3.2 for an exclusion description for studies that had full papers reviewed). The two groups of papers, ‘included’ and ‘excluded’, are separated in the database to avoid future confusion.

2.2.4 Characterising ‘included’ studies

After the exclusion process, the remaining ‘included’ studies were coded in order to simplify the synthesis of review findings. The papers were coded into six main categories of study characteristics: (i) researcher and reference details, (ii) programme details (objectives and aims), (iii) study methods and quality of methodology, (iv) participants, (v) study context, and (vi) outcomes (see Appendix 2.4 for the full characterising coding tool).

The first category, researcher and reference details (Appendix 2.4, Section B), provides a description of the organisations and institutions involved with the implementation of the programme and its evaluation. Beyond simple information gathering, knowing the type of publication and the individuals or organisations involved with the study gives us an idea of possible publishing or reporting biases. For example, if a certain organisation funds, implements and evaluates a

programme, then it may be in its favour to provide positive results. We collect this information to ensure that these possible biases are acknowledged and addressed.

The second characterisation category, programme details (Appendix 2.4, Section C), provides a description of the programme or anti-corruption strategy, and explains the logic or theory of change behind the implemented intervention. Descriptions of the causal mechanisms through which the programme was intended to reduce corruption and the roles of each actor or organisation involved in implementing the programme are helpful in understanding the difference between an ineffective programme and one that was poorly implemented. Furthermore, the programme details indicate the strategy's cost-effectiveness and whether any circumstances were particularly helpful or harmful to its implementation or success.

Next, it was important to examine the study methods and quality of their identification strategy (Appendix 2.4, Section D) in order to ascertain that the 'included' studies were consistent with our requirements. In this section of the characterisation process, we rigorously evaluated the methodology and identification strategy used to determine whether the intervention in question was successful. Special attention was also given to the identification of any possible biases that could cause a misinterpretation of results. Overall, the responses from this coding section were collected in the characterisation tool and helped inform the usefulness of the study's outcomes in drawing conclusions or policy recommendations.

Information collected on participant and study context (Appendix 2.4, Section E and F) allowed the reviewers to consider situations (e.g. social, economic, political, geographical) where the implemented strategies may not be effective or appropriate. Demographic information also indicates whether the programme actually served the intended population and is useful for assessing the generalisability or external validity of the results.

The final category, outcomes (Appendix 2.4, Section G), includes information on the findings and effectiveness of the intervention in question. However, the preceding questions are what give the outcomes context and allowed us to create a synthesis of findings that considers other factors that could contribute to a successful anti-corruption strategy.

2.2.5 Identifying and describing studies: quality assurance process

Our search process was comprehensive, transparent and unbiased in scope and implementation. During the inclusion and exclusion criteria step we piloted the tool after obtaining feedback from all team members. To ensure that reviewers' decisions to include or exclude a reference were reproducible, quality controls were put into place.

First, the coders independently applied the inclusion and exclusion criteria to the abstracts of 50 randomly selected studies and compared their results to make sure that they were all in agreement on the process of applying the criteria. Next the primary coder randomly allocated the remaining studies to herself and the two other coders. The coders then applied the inclusion and exclusion criteria to all the studies' abstracts. They excluded studies at the abstract level only if it was obvious that they fit the exclusion criteria.

After excluding papers based on their title and abstract, 50 of the remaining papers were randomly selected. The coders independently applied the exclusion

criteria to the selected studies. Once again, the reviewers discussed the results and reached an agreement before moving forward with the coding process. The remaining studies were then randomly allocated to each team member in order to re-apply the exclusion criteria to the full papers.⁶ If there were any questions about whether or not a study should be included, the articles were discussed by the entire team.

Similar quality assurance procedures were followed when completing characterisation coding of included studies. The team provided initial feedback on the characterisation tool and after each member coded one paper they provided recommendations to improve the data collection abilities of the tool. Members were randomly allocated studies to code and their inclusion/exclusion decisions were reviewed by the project advisor to ensure that the research and methodological designs were strong in the included papers and no quality papers were excluded.

Our protocol on the methods and scope of our research was reviewed by DFID, which provided helpful feedback in improving our tools and procedures. EPPI-Centre provided support for methodological issues including the software for the database and support for the search. The team also worked with specialists in the subject matter to make sure we did not miss any relevant studies.

2.3 Methods for synthesis

2.3.1 Assessing quality of studies

This section focuses on our process for determining the quality of our included studies. In the final exclusion step and coding process, all studies that were deemed irrelevant to our research question or had glaring methodological or identification strategy issues were eliminated (see Appendix 2.1 for the full exclusion tool). Thus, remaining studies are relevant to our research question and viewed as quality analytical papers.

As visible in our coding tool (Appendix 2.4), we have not constructed a specific quality appraisal category or ranking system. Overall, we scrutinised each paper based on all information collected in the characterisation tool to determine if the study was well conducted according to the norms of the methodology used to evaluate the intervention. Nevertheless, the most influential factor guiding our quality assessment was methodology. RCTs are viewed as having the best ability to provide clearly identified outcomes with strong internal validity. Studies that use a quasi-experimental methodology were viewed as having the next strongest ability to provide reliable results of programme outcomes. Finally, observational studies were seen as providing the least compelling evidence of the three methods, although their analysis is still sound. In this way, if multiple studies had conflicting findings, then we would prioritise the RCT studies over the quasi-experimental and observational studies and the quasi-experimental over observational ones. However, in our analysis, there were no studies with conflicting findings. Rather, we were able to use the heterogeneity of implementation of the different corruption-eradication strategies to identify what works and what does not within a specific strategy (for example, see the several types of monitoring and incentives schemes implemented and the discussion about what works and what does not).

Based on methodology, we first focused on whether studies met sufficient levels of internal validity and thereby provided a causal estimate of programme impacts. It was particularly important for us to examine each paper to ensure that its given

⁶ This quality assurance process was adapted from Pande (2010).

identification strategy would actually support the causal statements made in the conclusions. Using this criterion, we included properly conducted RCTs of social programmes. We also included papers with quasi-experimental designs where the conditions for exogeneity of the treatment were met. This included difference-in-differences, fixed effects techniques and instrumental variables methodologies. Other regression-based papers that examined cross-sectional, observational or panel data were included when they had a well-supported identification strategy.

In order to assess internal validity, we considered issues such as sample size, omitted variable bias, functional form misspecification, sample selection bias, errors-in-variables bias, and simultaneous causality bias. By collecting information on the individuals and organisations that implemented, evaluated and published the studies we could attempt to identify any possible reporting biases. Furthermore, by understanding the population served in the studies we could identify whether the provided conclusions were in fact applicable to this population. Overall, our data collection tool allowed us to assess whether the data cited supported the conclusions that the authors drew. While included studies were scrutinised on all aspects and were only included if they were of the utmost quality, analyses with areas of possible bias or weaknesses are mentioned in the results tables (Appendix 4.3) and the synthesis section (Section 4.2).

Next, we evaluated the external validity of each study to determine if its findings were generalisable to other contexts. However, since all of our studies describe a programme and its outcomes within a very specific implementation environment, it was sometimes difficult to generalise their findings to other contexts.

In addition to internal and external validity checks, we considered the quality of a study based on the following: clarity of exposition, rigor of programme implementation, relevance in answering our research question, methods used to overcome possible validity issues or errors in interpretations, and any other possible biases that appeared in its analysis. Overall, our quality assessment of the included studies ensures that our synthesis of findings is not merely a replication of each paper's results. The strongest studies, such as Bjorkman and Svensson (2009), have directed our conclusions, and the remaining studies are used to provide additional support and information.

2.3.2 Overall approach to and process of synthesis

Ideally, we would have analysed the findings in a single dataset summarising each type of programme and the range of cost-efficacy outcomes seen in each implementation. However, there are several reasons why this was not possible. First, there are few true experimental or quasi-experimental studies which give reliable numbers on cost-efficacy. Most studies either do not quantify the financial benefits of each implementation at all, or the comparison group they use is not reliable enough to treat the numbers they do offer as given. Second, whereas meta-analysis relies on homogeneity in outcome measure for comparison purposes, outcomes for anti-corruption studies vary considerably depending on the types of government service considered.

As the meta-analysis approach to synthesis is not appropriate for our evaluation of anti-corruption strategies we chose a more suitable method. Instead, we used the 'textual narrative synthesis' method, outlined by Barnett-Page and Thomas (2009). This method advocates dividing the studies into relatively homogenous groups, reporting study characteristics within each group, and articulating broader similarities and differences among the groups. Accordingly, we organised the included studies into categories based on their methodological approach, the type

of treatment they evaluated, the sector in which the programme was implemented and several other factors. We then compared the relative effectiveness of each corruption-reduction intervention, while keeping in mind the level of quality and applicability to other contexts. This synthesis method seems most appropriate because it enabled us to compare evidence from different types of methodology and is geared toward the production of an output that is directly relevant to policy-makers and those that design interventions (Barnett-Page and Thomas, 2009).

The textual narrative synthesis method is similar to the ‘realist synthesis approach’, a method focused on dealing with social interventions by acknowledging the complex social systems in which they function (Pawson et al. 2005). Because the success of an intervention may be due to any number of incidental characteristics in a region, organisation or intervention population, the realist approach examines the context, mechanisms and outcomes of each study to draw clearer explanations for research conclusions. We used this overarching approach as a logic that guided our synthesis of the collected information. By analysing the causal mechanisms involved with each intervention we understood the theory behind each programme’s intent to reduce corruption and whether the theory was found to be correct in practice. Furthermore, identifying contextual details that could influence the implementation and outcomes of a programme provides more evidence on why and when certain programmes are effective.

There are additional secondary benefits to the textual narrative synthesis method. Of the realist approaches, our adopted method is considered to be a more-linear approach to both searching and reviewing, and seen as having a clearer and more well-developed approach to quality assessment (Popay et al., 2006). In *Guidance on the conduct of narrative synthesis in systematic reviews*, Popay et al. state that while meta-analysis has its obvious strengths, the narrative synthesis method, which we employed, is believed to provide more-extensive and detailed future research implications and address the potential for bias more completely.

2.3.3 Selection of studies for synthesis

All of our included studies were then selected for synthesis.

2.3.4 Selection of outcome data for synthesis

As the review team read through and analysed each study, they recorded both the positive and negative outcomes of the intervention (see Appendices 4.1 - 4.3 for the outcomes tables generated from our coding tool). We considered numeric, categorical and narrative (free-text) data within each included study to determine our results. The results of the econometric evaluations were recorded from their best specified model. Otherwise stated, this was the regression model that used the most appropriate functional form specification, based on evidence provided by the author(s), and included all control variables, fixed effects, and interaction terms necessary to prove the programme’s effectiveness. Several of the high-quality studies, particularly the RCTs, offered additional information on standard deviations, effect sizes and specific findings among sub-populations. These results were captured in the coding tool when available. We also included a brief narrative summary of each study’s empirical evidence and conclusions.

2.3.5 Process used to combine/synthesise data

During our data extraction process we analysed each included study in order to answer the questions outlined in our characterising and outcome coding tool. Using EPPI-Reviewer we were able to manage the relevant data and generate easy-to-read tables. The information was initially organised in a table that separated the studies by category of intervention and the type of intervention within the two categories (see Appendices 3.1 and 4.1). Having the author's name, title of the paper, key issue, primary intervention, secondary intervention, positive or negative effects, and the extent of the effects in one place made it easier to identify trends, compare studies and synthesise findings. We included the country and sector in which the intervention took place to get a better idea of in what contexts the study was found to be effective or ineffective. Within each type of intervention, sector, country/region, and type of corruption we could quickly see what programmes were found to be effective and make note of the studies that were more rigorous and would be given more influence in drawing our final conclusions.

This process was further simplified by tables that presented the programme's causal mechanisms and results (Appendices 4.2 and 4.3, respectively). The causal mechanism table provides the initial theory behind the intervention and whether it was implemented in adherence to the theory. This allowed us to identify the possible implications of programme implementers' actions on the success of their programme. The results table allowed us to further understand the success of each programme and identify the strengths and weaknesses of the findings in comparison to similar strategies.

As part of the textual narrative synthesis approach, we created highly structured summaries of each study for the synthesis of evidence section. The generated tables facilitated this process, as they provided a holistic picture of each study. Creating the summaries forced us to look back at each of the studies and ensure that we had accurately interpreted their mechanisms, contexts and outcomes. These synthesised paragraphs gave a better indication of our overall findings. We discussed the findings across the different interventions, sectors, types of corruption and countries, noting the particular contextual reasons for success or failure given by the authors.

2.4 Deriving conclusions and implications

Given the few studies that actually have evaluated micro-level anti-corruption strategies in developing countries, we were careful not to overstate our findings. As no two studies were conducted under the same conditions (i.e. country, sector and type of corruption) our ability to identify overarching themes within the literature was severely limited. However, the data extraction and synthesis process described above indicated that, among our included studies, certain strategies clearly stood out as being successful in their respective settings while others had mixed results. Our synthesis results and main conclusions are based on the review of these data and synthesis tables and discussions among review team members.

It became obvious in the initial stages of our systematic review that there is currently insufficient literature on micro-level anti-corruption strategies in developing countries. Therefore, our major recommendation for future research in both policy and practice is the adoption of further anti-corruption strategies that can be rigorously tested in their effects on reducing different types of corruption among various sectors and countries. Our included studies cover interventions in 10 different developing countries and nearly the same number of public sectors. This is a great starting point and should guide future research endeavours. Research

recommendations emphasise interventions that gave mixed results across studies. For example, decentralisation was found to be successful in circumstances that involved capacity building, increasing the availability of public information on local corruption, and incorporating community monitoring. However, decentralisation is seen as unsuccessful in other intervention settings. This is an area of research that could not only provide additional evidence on the success of the programme but also indicate whether the initial cost-effectiveness estimates of Bjorkman and Svensson (2009) are found among other interventions. Given limited resources available for corruption research, the focus should remain on other interventions that have the possibility of being more successful and cost-effective in diverse locations.

Overall, as indicated above, we drew conclusions and made recommendations that were clearly linked to our synthesis findings. We were careful not to over-interpret our results from the systematic review and we have identified the potential limitations of our research. The recommendations are evidence-based and are meant to be a starting point for additional research on micro-level anti-corruption strategies in developing countries. Further recommendations on the policy and practice of anti-corruption strategies were pulled from the experiences noted by those who conducted the diverse intervention studies and our interpretation of their results. The practical application of these recommendations will depend heavily upon the organisation and context in which the strategy is intended to be undertaken. We have noted that differences between organisations' internal procedures limit our ability to outline specific steps that are applicable to all institutions. Therefore, the practice recommendations are rather broad and intended to guide the processes of organisations, institutions or countries, which can identify how these suggestions fit best into their own circumstances.

3. Search results

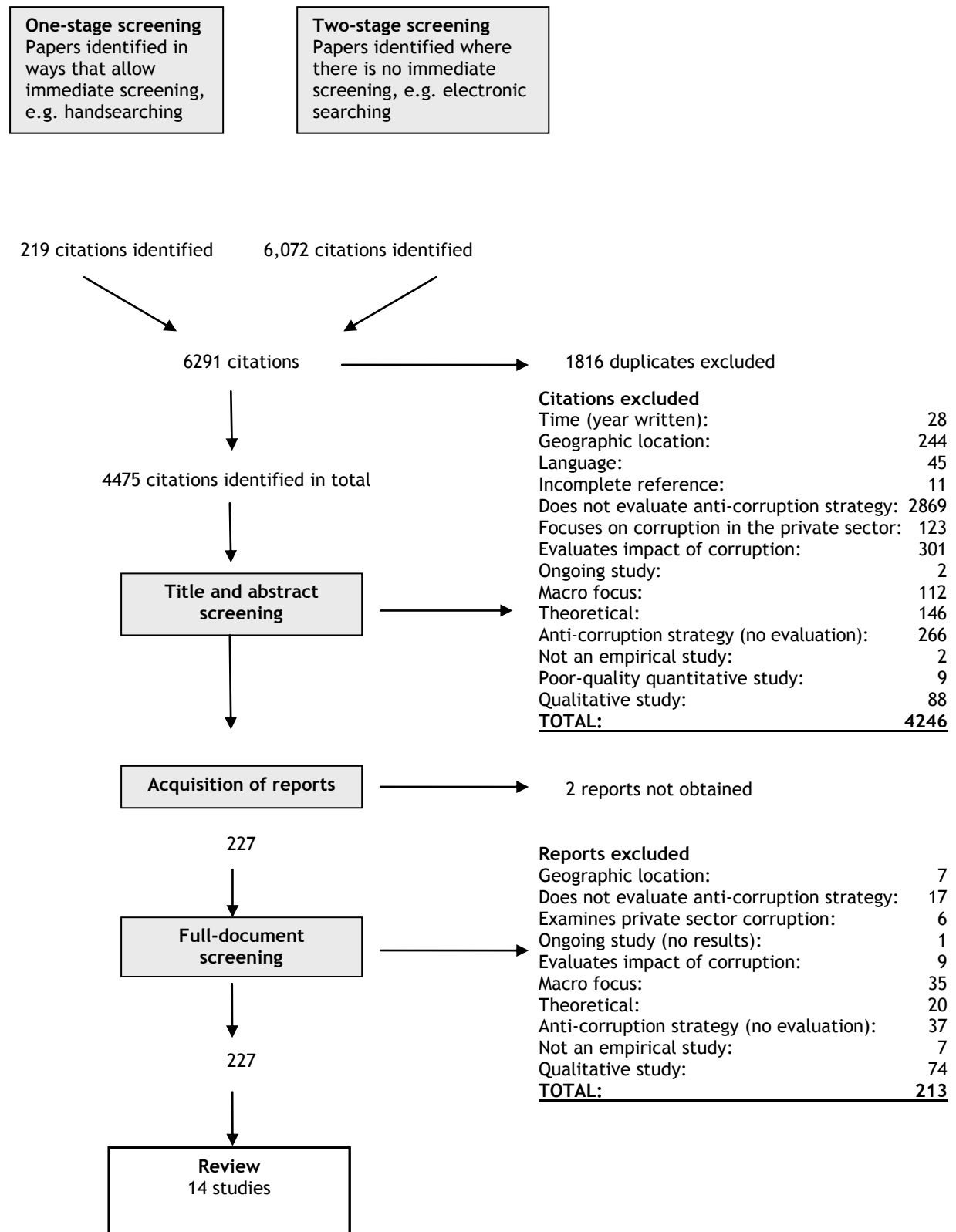
3.1 Studies included from searching and screening

Figure 3.1, below, is a flow chart that describes our inclusion/exclusion process in detail. Approximately two-thirds of the studies were excluded at the title/abstract stage. This was despite the fact that coders were careful not to exclude a study at this stage if there was any uncertainty about whether or not it should be excluded. The level of exclusion was high because so many of the studies fitted obvious exclusion criteria. This is especially noticeable when looking at the fact that 2869 studies (approximately two-thirds of those studies excluded at the title/abstract level) were excluded because they did not evaluate an anti-corruption strategy. In most cases, this meant that the studies were explicitly unrelated to our proposed research question. To a certain extent, this was to be expected, considering the expansive scope of our search strategy and the large number of databases we searched.

The next four largest categories excluded at this level are, in order, ‘evaluates impact of corruption’ (301), ‘anti-corruption strategy (no evaluation)’ (266), ‘geographic location’ (244) and ‘theoretical’ (146). The first two categories represent those studies that were clearly related to the topic of corruption, but explicitly did not evaluate the effectiveness of an anti-corruption strategy. Instead, they either evaluated the impact of corruption on other factors, such as public services or macroeconomic characteristics, or solely described or advocated a given anti-corruption strategy without attempting to evaluate it. Studies excluded based on geographic location were also fairly easy to spot at the title/abstract level, as were those studies that dealt only with theoretical matters.

The most common reasons for exclusion at the full-text level were ‘qualitative study’ (63), ‘anti-corruption strategy (no evaluation)’ (37), and ‘macro focus’ (31). These studies were excluded at the full-text level, rather than the title/abstract level, because it became apparent that they fitted one of the exclusion criteria only after a review of the whole paper. (A full list of these papers and the reason for their exclusion are provided in Appendix 3.2.)

Figure 3.1 Filtering of papers from searching to map to synthesis



3.2 Details of included studies

The 14 studies included in our review examine the effectiveness of an anti-corruption strategy that was implemented in a developing country after 1995 (see Appendix 3.1 for more details on each study). Even though all these studies focus on the same broad subject, there are several major differences among them. First, the studies make use of a wide array of statistical and evaluation methodologies. Our list includes RCTs, quasi-experimental studies, and observational or econometric studies. Second, the studies evaluate two different broad categories of anti-corruption interventions: ones which keep the underlying rules fixed while using different kinds of monitoring and incentives (financial or non-financial) to increase compliance with those rules, and ones that change the overall goals or rules of the system so that the agent's incentives are better aligned with those of society. Third, the included studies evaluate anti-corruption strategies implemented in different parts of the world, including South Asia, Sub-Saharan Africa, South-East Asia and Latin America, as well as different sectors, such as health, education and water provision. Thus, while our exclusion criteria whittled our list of studies down from several thousand to only 14, our final list displays a fair amount of diversity in both subject matter and methodology.

4. Synthesis results

4.1 Further details of studies included in the synthesis

As discussed above, we employ the underlying theoretical model of Banerjee et al. (2011) to classify anti-corruption policy prescriptions into two broad categories: (1) monitoring and incentives programmes and (2) programmes that change the rules of the system. Within these two categories, we further organise anti-corruption interventions into those that use monitoring (by an institution or the community) with non-financial incentives, those that use monitoring (by an institution) and financial incentives, and those that use decentralisation or other changing the rules programmes.

4.1.1 *Monitoring and incentives programmes*

These programmes attempt to reduce corruption by increasing the risks or costs associated with an agent's decision to participate in corrupt behaviour. They accomplish this by increasing the monitoring of an agent's behaviour and initiating either financial or non-financial incentives that encourage an agent to pursue the principal's goal rather than their own. Over half of our included studies address monitoring and incentives interventions. The empirical evidence showcased in our review provides information on the effectiveness of different monitoring and incentives strategies and sheds light on related behavioural changes. For example, a particular incentive scheme may be too small to change behaviour positively, or it may cause unintended behavioural changes, or it may lead to the desired secondary outcomes, such as improved health outcomes or a better-educated population.

Under *monitoring and non-financial incentives*, we further divide interventions into those conducted by either institutions or the community. Five studies examine the success of *institutional monitoring* (e.g. the federal or municipal government, or a privately contracted firm) and *non-financial incentives* in reducing corruption. These papers evaluate the effectiveness of auditing to reduce corruption in road construction in Indonesia (Olken, 2007), the election of corrupt mayors in Brazil (Brollo, 2009, Ferraz and Finan, 2008), and procurement officer corruption in Argentina (Di Tella and Schargrodsky, 2003). One additional study (Anson et al. 2006) examines the effectiveness of hiring pre-shipment inspection (PSIs) companies, private third-party monitors, to reduce customs bribe payments in Argentina, Indonesia and the Philippines. Apart from Anson et al., all of these experiments also included an information dissemination or community accountability component as a secondary strategy.

Another five papers, including the aforementioned Olken (2007), examine the effectiveness of *community monitoring and non-financial incentives* (Banerjee et al. 2009, Bjorkman and Svensson, 2009; Francken, 2009, Reinikka and Svensson 2003). In the interventions evaluated by Olken and Bjorkman and by Svensson, the community played a monitoring role similar to that played by the institutions in the studies described above. The remaining three studies examine community responses to widespread information dissemination campaigns on the capture of local educational funds and corrupt election candidates.

The remaining programmes under this category couple *institutional monitoring and financial incentives* to deter corrupt behaviour. Banerjee et al. (2007) and Duflo et al. (2010) evaluate the effectiveness of a programme implemented by a local

Indian NGO to reduce absenteeism in health care and education, respectively. The 11 monitoring and incentives studies introduced in this section examine programmes in several service sectors of South and South-East Asia, Africa and Latin America.

4.1.2 Programmes that change the rules of the system

As with monitoring and incentives programmes, the underlying theoretical model here also assumes that corruption will occur because the principal and agent have a different agenda. However, these methods actually change the corruptible process under the assumption that attempts to increase monitoring or punishments are useless because they are too easily circumvented. This occurred in Banerjee et al. (2007), where nurses circumvented a monitoring and incentives programme by receiving official permission not to come to work. While programmes that change the rules are implemented widely, they have not been evaluated as often as the previous category of interventions. About a third of our included studies attempt to evaluate the effectiveness of programmes that change the rules.

Decentralisation is one rule-changing method that has been used as a strategy to increase downward accountability. This strategy is examined in three of our included studies: Asthana (2008), Bjorkman and Svensson (2009) and Chavis (2010). Each evaluation makes an attempt to identify the effectiveness of decentralisation as a tool for reducing corruption within countries of South and South-East Asia. The shift of power from either the federal or state government to the local level is thought to bring the decision-makers closer to those affected by the decisions that are being made, thereby making bureaucrats more accountable to the populations they serve, and potentially aligning their incentives more closely with those of society. Additionally, decentralisation is thought to reduce opportunities for fund leakages in centralised bureaucratic processes. These authors provide evidence on whether this change in the rules actually reduces corruption or creates opportunities for corruption among local elites.

A second strategy for changing the rules is evaluated by Tran (2008). He evaluates changes in *procurement* rules to see if public auctions decreased bribe-taking within government procurement in a specific Asian country.⁷

4.2 Synthesis of evidence

4.2.1 Monitoring and incentives programmes

Monitoring and incentives programmes build upon a theoretical model first introduced by Gary Becker and George Stigler (Becker and Stigler, 1974). Put simply, the model presents the decision-making process of a potentially corrupt official, in which she or he will choose to engage in corruption if the expected benefits from the act outweigh the expected costs. The official compares earnings from not being corrupt with the marginal benefit from engaging in corruption if successful, the probability of success, the probability of being caught, and the punishment if caught. Monitoring programmes increase the probability of being caught, and incentives programmes either reward uncorrupt behaviour and/or increase the punishment for engaging in corruption. Both the monitoring and the incentives aspects of an intervention therefore increase the individual's cost of engaging in corruption. Thus, it is understandable why these two interventions are

⁷ Due to privacy procedures the paper does not reveal the name of the Asian country in which the author completed the analysis. This limits our ability to speak about the contextual influence on the findings.

frequently combined: unless there is some strong punishment for engaging in corruption, a higher probability of being caught has little effect.

4.2.1.1 Monitoring and non-financial incentives

INSTITUTIONAL MONITORING AND NON-FINANCIAL INCENTIVES

Of the studies included, five examine the effectiveness of monitoring efforts made by an institution, e.g. the federal or municipal government, or a privately contracted firm (see Appendix 4.2 for more-detailed information on each study and its results). Each paper uses sound statistical analysis to evaluate the interventions. By reducing potential scope for bias, these studies provide a more-accurate portrayal of the potential success of monitoring and non-financial incentives interventions. Furthermore, the findings are consistent with the a priori theoretical pathways that an increase in monitoring causes a clear increase in the probability of being caught and thereby suffering an associated punishment. These interventions change the underlying incentives associated with corrupt behaviour and discourage politicians and bureaucrats from continuing to engage in corruption.

In Indonesia, Olken (2007) used an RCT to study an anti-corruption programme in road building. Bureaucrats were warned in advance that an independent audit of previously approved road projects would be conducted in order to monitor theft in road construction. Theoretically the government could punish offenders, although this rarely occurred. Therefore, audit results were read at open community meetings to create substantial social sanctions. By measuring whether allocated funds for the roads project matched the materials and labour that were actually used in road construction, Olken finds that missing expenditures were 8 percent lower among audited communities. While this is a significant improvement, the study also finds evidence that corruption in the form of ‘nepotism’ among road construction officials actually increased: family members of people at high levels in the implementation of the programme were more likely to access well-paying jobs within the project.

In Brazil, Brollo (2009) and Ferraz and Finan (2008) report that random federal audits of municipalities successfully led to a reduction in the re-election of corrupt incumbent mayors. This anti-corruption strategy clearly combined federal monitoring with the non-financial incentive of re-election. By comparing cities that were audited pre-election and post-election, Ferraz and Finan (2008) determine that mayors found to be corrupt above a median level were less likely to be re-elected. The probability of incumbent mayor re-election decreased with the number of violations reported and was further reduced as the number of radio stations in an area (a proxy for information availability) increased. Moreover, mayors found to be less corrupt than anticipated were rewarded by being re-elected, especially in areas with greater media access.

Brollo (2009) further examines this case and determines that the effect of information dissemination on reducing the re-election rate of corrupt mayors diminished over time. Brollo finds that 15 months after audit reports were released corrupt mayors were punished again through elections. He attributes this effect to the reduction of federal transfers to municipalities, which was felt by the voting populace over a year after the audit. Beyond the initial non-financial incentive of re-election, the reduction in federal transfers acted as a financial incentive to further curb the desire of future mayors to engage in corruption. Overall, neither study directly measures a reduction in total corruption. However, they find that the newly implemented system of monitoring, combined with the public release of audit reports and the associated reduction in federal transfers, led to the removal of corrupt mayors from office and was seen therefore to reduce corruption over

time, as less corrupt or uncorrupt mayors were believed to be more likely to run and also to be elected.

At a city level, Di Tella and Schargrodsy (2003) study the role of audits in reducing the profiteering of procurement officers in public hospitals of Buenos Aires, Argentina. The authors use a regression-based approach to identify large and well-defined 15 percent decreases in medical prices of homogeneous inputs following the introduction of the monitoring policy. The estimated effects decreased over time but after nine months the average prices remained 10 percent lower than pre-crackdown levels, a considerable improvement. Furthermore, the authors examine the effects of wages on corrupt behaviour. They find that the effect of wages on medical prices was insignificant during the first phase of the crackdown (when audit-led results are expected to be greatest), but that the effect was 'negative and well-defined' during the final phase of the crackdown (when audit levels are intermediate). Their empirical evidence supports the theoretical work of Becker and Stigler (1974) by showing that high wages paired with a non-zero probability of being audited can be useful in deterring corrupt behaviour. Di Tella and Schargrodsy's (2003) findings also suggest that the effectiveness of wage increases as an anti-corruption policy may depend on the degree of audit intensity.

Anson et al. (2006) evaluate the effectiveness of hiring a pre-shipment inspection (PSI) company to facilitate passing goods through customs agents and thereby reduce related fraud in Argentina, Indonesia and the Philippines. The researchers find that after the introduction of PSIs, fraud actually *increased* in Argentina and Indonesia and decreased only in the Philippines, and even this was not a significant reduction. Furthermore, over-invoicing was apparent in all three countries, which supports the competing hypothesis that PSI companies will overcharge the shipping firm if they discover that a shipment has a greater value than indicated, since their wages are a percentage of the total shipment value. The findings are interesting and well identified, but further research is needed to determine more detailed reason(s) for the mixed results. The authors suggest that PSI interventions may not actually increase information due to their role in complicating the incentives schemes of all players, e.g. PSI companies, government, customs agents. It stands to reason that when monitoring incentives are not properly aligned between all parties, e.g. between shipping firms and PSI companies, there is a greater chance of an ineffective programme.

In four of the papers above (Brollo, 2009, Di Tella and Schargrodsy, 2003, Ferraz and Finan, 2008, Olken, 2007), governments effectively implemented auditing programmes that were viewed by the public, including corrupt individuals, to be capable of detecting corruption and punishing those found to be corrupt. Whether the associated punishment was publicising the auditing records, diminishing future funds, or termination of the bureaucrat's position, the combination of monitoring and non-financial incentives appears to have had success in reducing corruption. Yet while the effects of these programmes are considerable, they may decrease over time (Brollo, 2009, Di Tella and Schargrodsy, 2003) or cause other forms of corruption to increase (Olken, 2007). The findings indicate that additional research is required in order to evaluate whether these strategies can be successful in the long term.

Furthermore, even when well implemented, PSIs do not appear to be an effective approach to reducing customs bribes, based on evidence from three countries. Additional research should either focus on ways around the incentives issue with PSI companies or devise another strategy all together.

COMMUNITY MONITORING AND NON-FINANCIAL INCENTIVES

Of the studies included, five examine the effectiveness of auditing efforts made by the local community (see Appendix 4.2 for more-detailed information on programmes and results). Overall, the theory behind these monitoring and incentives projects is the same as those discussed above. However, in these programmes, the community monitors bureaucrats under the notion that it is in the community's best interests to ensure that corruption is limited since the effects of corruption can directly affect them through a reduction in the quality and quantity of available services. Therefore, community monitoring makes decision-makers more accountable to those who are most affected by officials' decisions or corrupt acts. The studies described here appear to be well implemented and use rigorous quantitative analysis.

The first two interventions (Bjorkman and Svensson, 2009, Olken, 2007) used the community in a monitoring role similar to the role that institutions play in the studies described above. The remaining three studies (Banerjee et al. 2009, Francken, 2009, Reinikka and Svensson, 2003) examine community monitoring responses to widespread information dissemination campaigns on the capture of local educational funds and corrupt election candidates.

Olken (2007), discussed in the previous section, also studies the separate effects of community monitoring on corruption. This intervention is orthogonal to the government monitoring intervention, and thus it is possible to separate out the individual effect of each programme. Community monitoring was evaluated by sending invitations to attend previously established, 'public accountability meetings' and complete anonymous comment forms on road project procedures. Olken reports that, unlike central government monitoring, community monitoring had small and statistically insignificant effects on the amount of missing expenditures reported in a road project. While individual participation within the village increased by 40 percent the author notes that the initiative's minimal success in reducing road expenditure capture could be due to the challenges of creating an inclusive environment where all citizens can participate in local meetings.

Bjorkman and Svensson (2009) use a randomised field experiment to analyse the effects of community monitoring, information dissemination, and changing communities' role in improving the quality and quantity of health services in Uganda. Their primary objectives are to address (i) the lack of relevant information available to communities so that they can hold public servants accountable, and (ii) the low levels of community participation that can diminish a community's power. Community meetings facilitated by local NGOs were established for several purposes: to discuss the results of local health service delivery report cards, identify major problems within the system and propose possible solutions, and create a monitoring mechanism that would be sustained and led by each community. Findings indicate that this community-based intervention caused significant enhancements in health utilisation and outcomes. For example, improvements in waiting times and examination procedures, and a 10 percent reduction in healthcare provider absenteeism supported a 20 percent increase in outpatient services and a reduction in child mortality for children under five. In a rough calculation, the authors estimate that the programme was cost-effective and would remain cost-effective if scaled-up.

Using a combination of difference-in-differences and instrumental variables, Reinikka and Svensson (2003) examine the effects of improving public access to information on the amounts of educational funds received by schools in Uganda. Publishing this information at a local level was intended to increase government

officials' transparency and accountability, and therefore decrease the capture of educational funds by corrupt officials. They find a 13.8 percent reduction in stolen education funds in areas where information and community monitoring, via newspapers and radio, were available.

The third study in this category, Francken (2009), is based on data from a budget tracking survey in Madagascar. The author measures the difference between government capture of cash versus in-kind educational funds after a new media campaign. The media campaign reported the monetary captures of educational funds by local officials, while in-kind funding, known for lower levels of transparency and accountability, was not reported. After the media campaign, capture remained relatively high under both scenarios, however cash-funded projects were significantly lower in corruption than in-kind funded projects with about 21 percent versus 40 percent of funds being captured by local officials. Additionally, where there was access to local media, there was a significant decrease (13.8 percent) in both types of capture. This is attributed to the government being held more accountable for corruption when it is covered by the press. The author concludes that the results are promising, but that these efforts may not be sufficient to make additional reductions in corruption.

Banerjee et al. (2009) examine whether it is possible to use information education to encourage voters to punish corrupt politicians, in the form of a play about the importance of voting against corruption. In 2007, the play was performed in randomly selected villages in rural areas of Uttar Pradesh, India. Had the programme succeeded, the intervention would have lowered corruption by decreasing the share of votes for corrupt politicians, either by pushing out politicians who were inherently corrupt, or by encouraging politicians who desired to keep their position to remain honest. The authors find that the play had no effect on voter registration, turnout, or the vote share of the candidates identified to be the most corrupt by prominent journalists. This is surprising, because the paper reports success in a similar intervention that emphasised the importance of voting for the best candidate, even if that candidate was not a member of the same caste. This latter effort lowered the proportion of voters who voted for their caste-preferred party by 10 percent and cut in half the vote shares of politicians charged with crimes. The authors hypothesise that the reason the anti-corruption message was ineffective in their study is that the voters were unable to easily identify the most corrupt politicians since the play did not discuss specific politicians, but rather corrupt politicians in general. In a case where the primary incentive against engaging in corruption is the risk of being voted out of office, it is crucial that the voters be made aware which politicians are most corrupt.

The program analyses completed in the above studies suggest that community monitoring has the potential for success, especially when combined with a media or other information dissemination strategy. When combined with a media campaign or another form of information dissemination (Bjorkman and Svensson, 2009, Francken, 2009, Reinikka and Svensson, 2003), monitoring was found to be successful in reducing the capture of educational funds (in Uganda and Madagascar) and improving health services (in Uganda). However, less-focused information dissemination efforts in India (Banerjee et al. 2009) and Indonesia (Olken, 2007) were unsuccessful in reducing the election of corrupt officials - when it was unclear who was considered corrupt - and construction corruption, respectively. Nevertheless, properly targeted and widely available media and information dissemination strategies appear capable of using community presence to deter officials from engaging in corrupt behaviour, at least to some degree.

Community monitoring was not particularly successful when used alone for a roads project in Indonesia, especially when compared to orthogonal results from central government monitoring (Olken, 2007). However, the comprehensive community monitoring programme implemented in Uganda found significant results in improving health services (Bjorkman and Svensson, 2009). The likelihood of success with community monitoring may be heavily reliant on the cohesiveness of the community and the inclusion of all citizens within the community (Bjorkman and Svensson, 2009, Olken, 2007). Thus, the results of these interventions may possibly be harder to replicate in areas with low social capital within communities.

4.2.1.2 Monitoring and financial incentives

This dual strategy includes both monitoring and an explicitly stated financial incentive. We include two RCTs that provide high-quality empirical evidence of the effectiveness of incentives interventions led by NGOs (see Appendix 4.2 for more-detailed information on programmes and their results). Furthermore, these studies seek to better understand the extent of behavioural changes and corruption reduction based on increasing financial incentives.

The two studies use RCTs in India to understand the combined effects of monitoring and incentives on absenteeism in two sectors: education and health care. Both programmes were implemented by a local NGO, Seva Mandir. Banerjee et al. (2007) evaluate the combined effect of monitoring and financial incentives on nurse absenteeism. Monitoring was effected through unannounced visits by a field officer and the use of time and date stamping machines locked in a password-protected caddy. Based on recorded attendance, state and local health administrations instituted a schedule of fines and punishments to determine each nurse's wages. Initially, the programme was found to be extremely effective, an indication that nurses were responsive to incentives. However, 16 months after its inception, the programme became completely ineffective due mainly to poor government implementation. Although district leaders supported the programme, nurse managers undermined the incentive scheme by providing approved time-off. This may have been because the managers perceived low demand for the nurses' services and thus did not prioritise the programme.

In the second study (Duflo et al. 2010) teacher attendance was monitored by unannounced visits and photos being taken at the beginning and end of each school day. Incentives were administered through a new payment plan that paid teachers according to the number of days they attended. In this case, the NGO ran the programme, monitored attendance and controlled incentives. The combined intervention was found to significantly reduce absenteeism (from a baseline rate of 44 percent to 21 percent after the program) and increase children's test scores. In addition, the authors create a model to separate the monitoring and incentives effects and are able to conclude that the majority of the effect was driven by the financial incentives. Using this model, the authors compute an optimal incentives scheme that could allow the NGO to achieve the same absenteeism rate for a lower cost.

Overall, the two studies suggest that monitoring and financial incentives schemes will work if monitoring is well implemented and incentives are properly aligned for all involved parties. Although the schools in the Duflo et al. (2010) study were run by an NGO, the authors determine a specific cost-effective scheme to increase teacher attendance that could be applied to government run schools in India. In Banerjee et al. (2007), the monitoring was properly implemented by the NGO but there was a lack of compliance by managers with the incentives scheme. Actions against the incentives scheme may also have been partially motivated by low

service demand. While this is only one example, it suggests several reasons why monitoring or incentives programmes might sometimes be less effective, than they might be otherwise: they may be less effective when a credible punishment or reward is not concurrently implemented, when programme implementers do not prioritise corruption reduction, or when contrary local market structures exist. This study also provides limited empirical support for the idea expressed in the ‘changing the rules’ description in Section 1.2.2, that monitoring and incentives programmes may be undermined in the long term, either because the monitors themselves will be corrupted or because the bureaucrats will create new methods for obviating the rules.

4.2.2 Programmes that change the rules

4.2.2.1 Decentralisation

Our included studies provide three separate evaluations of programmes aimed at reducing corruption by shifting power from either the federal or state government to the local-level government (see Appendix 4.2 for more-detailed information on each study and their results). Each programme was implemented under the a priori theory that decentralising the allocation of public goods by placing funding decisions at the local level can take advantage of local information concerning needs and can bring decision-makers closer to the community affected by the decisions made, and therefore align their incentives more closely with those of the affected population. Furthermore, supporters argue that it enhances democracy and improves efficiency. However, previous theoretical and macro-level research suggests that decentralisation can also leave funds open to misuse or capture by local elites. As in previous work, the micro-level studies described below find mixed results on the success of this anti-corruption strategy.

The most convincing micro-level evidence on decentralisation as a corruption-reduction mechanism comes from Bjorkman and Svensson (2009), who use a randomised experiment to evaluate a rule-based approach to reduce absenteeism among healthcare workers in Uganda. As described above, the intervention used community-based monitoring with information dissemination and changing the role of the community in order to produce significant improvements in healthcare utilisation and several health outcomes. Decentralisation occurred through community meetings - including government health workers - to decide on the main rules for governing health centres and mechanisms to ensure that these rules were then followed. This study and the other community monitoring interventions (Francken, 2009, Olken, 2007, Reinikka and Svensson, 2003) have an element of changing the rules, especially in areas where communities did not previously have access to accurate public service information or a forum to voice their concerns.

Asthana (2008) uses an observational analysis to compare corruption levels among 200 state and locally run drinking water facilities in two states of India. The author finds that decentralised water facilities had a significantly greater level of corruption than centralised state run facilities on all included corruption measures (see Appendix 4.3). Specifically, bribes were more common in locally run facilities but, on average, customers of centralised utility companies paid significantly more per bribe. Asthana ascertains the comparability between centralised and decentralised regions, considers several controls in the analysis (e.g. income levels and water facility size) and exploits the experiment’s large sample. However, the observational methodology does not provide the same quality of results as the RCTs we have included (see Appendix 4.3 for more details). Given the inability to define exact causation of the results, the author provides general theories on the ineffectiveness of decentralisation. As with community monitoring, the study

suggests that higher social and economic inequalities within a society appear to reduce the effectiveness of decentralisation as the power can be held among a small powerful elite.

Chavis (2010) evaluates an anti-corruption strategy that seeks to reduce corruption by embedding incentives into the organisational design of the approval for local projects. In order to reduce elite capture, a significant corruption risk associated with decentralisation, a WB programme implemented in Indonesia created an elaborate system of checks and balances to provide greater efficiency in the allocation of local project funding. Competition (number of bidding villages within a sub-district) appeared to decrease the misuse of projects funds, as seen by the reduction in per unit road construction costs and the decrease in microcredit projects implemented, because the latter was believed to be a large source of elite capture. Furthermore, the rigorous analysis suggests that higher village meeting attendance was associated with reductions in corruption, even in sub-districts with low levels of competition.

In summary, our analysis of these three micro-level studies suggests that decentralisation can have mixed success, but that additional research is needed to identify specific situations in which decentralisation can and cannot work. Nevertheless, the findings from each study do support the notion that increased community participation in project planning and the allocation of funding can lead to better outcomes (Asthana, 2008, Bjorkman and Svensson, 2009, Chavis, 2010). Asthana points out that an increase in community participation, however, is not inherently synonymous with decentralisation. When decentralisation is combined with increased community participation, there may be greater success in reducing corruption and improving public services as there is greater transparency and the community can hold local elites more accountable (Asthana, 2008, Bjorkman and Svensson, 2009, Chavis, 2010). Additionally, these authors recognise that when decentralisation is introduced abruptly into communities that do not have the capacity to direct the allocation of funds, maintain regulations and lead projects, there is likely to be a lower probability of success. Based on this idea, decentralisation may be an expensive policy to implement in low-capacity areas. However, complete cost-benefit analyses on these strategies have yet to be conducted.

4.2.2.2 Procurement auctions

Besides decentralisation, we evaluate one additional strategy that combats corruption by changing the rules. Tran (2008) uses internal records of contracts received and bribes paid by a bribe-paying firm in an unnamed developing Asian country to evaluate the effects of a government mandate on procurement auctions. The study examines the change in corruption associated with a policy shift from closed/restricted to open procurement auctions for related government contracts. Auction winners were determined through two types of open auctions: (i) value for their cost ('best-value') and (ii) cost for a project after meeting a minimal quality requirement ('best-price'). The policy evaluation indicates that best-price procurement auctions had the greatest impact on reducing corruption, but that restricted auctions appeared to choose more-efficient firms. The best-value option was more transparent than restricted auctions but it did not reduce corruption and actually increased it when officials could select solicited vendors. This programme reinforces our notion that changing the underlying rules of the system can be a viable solution for reducing corruption, although Tran indicates that this success may be associated with a reduced incidence of choosing the most efficient firm.

4.3 Synthesis results: quality assurance

We have taken precautions to ensure the quality of our synthesis results. Once the inclusion and exclusion process was completed and the review team had a final list of included papers, the primary coder randomly allocated the included studies to herself and the two other coders. The three coders then coded each full paper that was included based on our characterising tool (Appendix 2.4), recording comments and creating detailed outcome tables that report the most relevant findings and characteristics of each study (Appendices 3.1 - 4.3). All conflicts, questions, issues and concerns were discussed by the entire team. All included studies' results were checked by at least two team members to ensure that the methodology of the study was of high-enough quality to use the results in drawing conclusions.

As discussed in Section 2.3.1, we further considered the quality of each study when synthesising results across the two intervention types, categories within each intervention type, sectors, and corruption outcome measures. All included studies have strength in their ability to report causal effects based on their clearly defined identification strategies. Since RCTs are viewed as having the best ability to provide clearly identified outcomes with strong internal validity these studies are, overall, given priority over quasi-experimental and observational studies, and furthermore, quasi-experimental over observational. However, in our analysis, there were no studies with findings that conflicted completely. Rather, we were able to use the heterogeneity of implementation of the different corruption-reduction strategies to identify what works and what does not within a specific strategy.

Overall, this quality assessment ensures that our synthesis of findings is not merely a replication of each paper's results. For example, the strongest studies, such as Bjorkman and Svensson (2009), have directed our conclusions, and the remaining studies are used to provide additional support and information. Our outcomes table (Appendix 4.3) clearly presents the results for each study and several of the factors considered in determining the strength of each paper. We believe that this transparent process provides more strength to the reliability of our conclusions.

Beyond overall study quality, our synthesis of results pulls pertinent evidence directly from our included studies. This is clear from reviewing our tables (Appendix 3.1: 'Details of studies included in the review', Appendix 4.1: 'Further study details ...', Appendix 4.2: 'Causal mechanisms' and Appendix 4.3: 'Results/outcomes') and the synthesised paragraphs on each study (Section 4.2). We not only report whether the programme was successful, but also employ the theory and causal mechanisms behind each programme to acknowledge any weaknesses behind this or the implementation of the strategy (Appendix 4.2). In addition, we consider contextual factors in our synthesis by reporting findings across interventions, sectors and measures of corruption.

4.4 Summary of results of the synthesis

The following summary of results is based on evidence pulled from our included studies and presented in Section 4.2. As indicated, we collected data on the causal mechanisms of each intervention, the theory behind each strategy along with its actual implementation logistics, the quality of the statistical methodology employed to report outcomes, the actual outcomes and the context of each study (see Appendices 4.1 - 4.3). Our thorough review of the included studies allows us to report the following results with confidence. However, it is important to remember that the literature on anti-corruption strategies is still in its early stages and more research is necessary to understand thoroughly what can work, and what can work under different contexts and institutions. Additional research should continue to be

conducted with the goal of finding more-effective and efficient anti-corruption programmes; until then these results will guide the way.

Initially, results are presented by the type of intervention within the two categories of anti-corruption strategies and we make special note of success in both implementation and outcomes. In addition, results are examined by the sector in which the programme was implemented and the outcomes used to measure corruption. The results summarised below are a compilation of the evidence provided thus far and are not to be confused with our conclusions (Section 6.1), or policy and research recommendations (Sections 6.2 and 6.3, respectively), which we provide subsequently.

4.4.1 Monitoring and incentives

- Corruption was reduced in each of the four studies (three interventions) where governments at the federal or municipal level conducted audits (Brollo, 2009, Di Tella and Schargrodsky, 2003, Ferraz and Finan, 2008, Olken 2007). Based on the evidence provided in each study, the overall success of the intervention can be at least partially attributed to the governments' effective implementation of the programme. The public, including corrupt individuals, viewed the government as capable of detecting corruption and willing to punish those found to be corrupt. This combination of an increased chance of being caught and a properly aligned punishment, whether it is through publicising auditing records, diminishing future funds or firing corrupt officials, appears to be successful in reducing relative corruption or at least from the place where corruption was occurring.
- The effects of institutional monitoring and non-financial incentives programmes appear to be considerable, at least in the short term, even though they may decrease over time (Brollo, 2009, Di Tella and Schargrodsky, 2003) or cause another form of corruption to increase (Olken, 2007).
- Banerjee et al. (2007) and Anson et al. (2006) provide evidence to support the belief that incorrectly aligned incentives can lead to less-effective anti-corruption programmes. In the first study, monitoring was well implemented by the NGO but there was a lack of compliance with the incentives scheme run by the local government. When compliance was high, the programme reported significant success in reducing absenteeism. However, the low priority given by local officials to upholding rigid incentive rules contributed greatly to the decline and eventual ineffectiveness of the programme. Anson et al. (2006) also illustrate that when incentives are not aligned among all players, the strategy becomes ineffective. Although these studies represent programmes implemented by third parties, they are similar to monitoring programmes led by governments and evaluate corruption in public programmes.
- When community monitoring was coupled with a well-targeted media campaign or another form of information dissemination (Bjorkman and Svensson, 2009, Francken, 2009, Reinikka and Svensson, 2003), the programme was found to successfully reduce the capture of educational funds and improve health services. However, less-rigorous and less-widespread information dissemination in India (Banerjee et al. 2009) and Indonesia (Olken, 2007) was found unsuccessful in reducing the election of corrupt officials.

- The combination of community monitoring with either a media campaign or another form of information dissemination proved successful in four of the five included studies that evaluated this anti-corruption strategy (Bjorkman and Svensson, 2009, Francken, 2009, Reinikka and Svensson, 2003). One study (Banerjee, 2009) found insignificant results from using information dissemination to reduce the election of corrupt officials, but the information that this programme provided was less targeted and informative.
- Community monitoring was not found to be successful when implemented on its own (without a strong information dissemination mechanism), especially when compared to results from central government monitoring in Indonesia (Olken, 2007). As with all the monitoring interventions described in our review, the success of a programme is partially attributed to the implementation. Therefore, the use of community monitoring within local areas that lack social cohesion may be less effective (Asthana, 2008, Bjorkman and Svensson, 2009, Olken, 2007).
- Overall, the two studies on monitoring and explicit financial incentives schemes appeared to be effective in reducing public service absenteeism when monitoring was well implemented and incentives were properly aligned for *all* involved parties. In Banerjee et al. (2007), a lack of compliance by nurse managers with the incentives scheme and low service demands contributed, at least partially, to the ineffectiveness of the programme over time. Also in India, Duflo et al. (2010) demonstrate a programme successful in decreasing teacher absenteeism and improving educational outcomes, as measured by child test scores.
- Only two studies explicitly address cost-effectiveness. Duflo et al. (2010) illustrate a scheme to increase teacher attendance while at the same time reducing school costs. In a rough calculation, Bjorkman and Svensson (2009) estimate that their programme was cost-effective and would remain cost-effective if scaled-up.

4.4.2 *Changing the rules of the system*

- Overall, the findings from our included studies on decentralisation suggest that when the strategy is well implemented it can be a successful corruption-reduction tool. Bjorkman and Svensson (2009), the most rigorous, well-identified evaluation of decentralisation, and Chavis (2010) both find that corruption is reduced through locally run projects. Although Asthana (2008) finds that decentralisation among drinking water facilities in India increased the corruption level, the overall monetary value of bribes remained higher in centralised plants. The results of all three studies suggest that increased community participation in project planning and the allocation of funding leads to better outcomes. Clearly, decentralisation does not inherently mean that there is increased community participation, but when the two are combined there appears to be greater success in reducing corruption and improving public services, as also indicated by Olken (2007).
- Additionally, all three studies recognise that when decentralisation is abruptly introduced into communities that lack the capacity to allocate funds, maintain regulations and lead projects, there is a lower probability of success. Both interventions that proved successful (Bjorkman and Svensson, 2009, Chavis, 2010) included a capacity-building aspect. These

programmes trained a community member or placed a trained individual into the community to help facilitate the decentralisation process and organise meetings.

- Two successful studies involving decentralisation or community monitoring programmes were supported by local NGOs or local branches of an international organisation (Bjorkman and Svensson, 2009, Chavis, 2010). These locally trusted and knowledgeable organisations played various supervisory, facilitative and capacity building roles that appear to have at least contributed to the success of the programmes.
- Only one decentralisation study attempts to calculate the programme's cost-effectiveness. A 'back-of-the-envelope' calculation by Bjorkman and Svensson (2009) suggests that their healthcare intervention in Uganda was 'fairly cost-effective' when they include all costs and a low estimate for only one of the benefits the programme provided. Since the programme's costs included data collection and capacity building, this indicates that other programmes of this nature could be equally cost-effective, although further research is necessary.

4.4.3 Across public sectors

- We found successful attempts to reduce corruption among *education* officials and teachers through programmes that combined community monitoring and non-financial incentives (Francken, 2009, Reinikka and Svensson, 2003), and institutional level monitoring with financial incentives (Duflo et al. 2010).
- Corruption reduction among local, public *construction* projects was established in Indonesia through federal monitoring coupled with non-financial incentives (Olken, 2007) and a well-structured decentralisation scheme (Chavis, 2010). Programme success was minimal and insignificant with community monitoring and limited information dissemination (Olken, 2007).
- Our included studies indicated mixed success in reducing corruption among *healthcare* workers and hospital procurement officials. In Argentina, input prices on homogeneous hospital supplies were reduced after implementing federal auditing with non-financial incentives (Di Tella and Schargrodsky, 2003), although the effects declined, and absenteeism was reduced through a mixture of community monitoring and decentralisation (Bjorkman and Svensson, 2009). However, Banerjee et al. (2007) report initial reductions in nurse absenteeism in India until officials stopped adhering to the monitoring and financial incentive scheme.
- Three studies examine the effectiveness of a media campaign or information dissemination to reduce the *election of corrupt officials*. In Brazil (Brollo, 2009, Ferraz and Finan, 2008), a federally led monitoring programme reports significant reductions in the election of corrupt mayors, but these results faded over time until a federally implemented reduction in transfers to local officials deemed corrupt, appears to have re-encouraged individuals to vote against corrupt officials. On the other hand, a less-rigorous and less-widespread information dissemination campaign in India was not successful in reducing voter support for corrupt officials (Banerjee et al. 2009).

- Two studies offer a private look into the levels of public corruption. Anson et al. (2006) find that private companies hired to help firms reduce bribe-taking among customs officials were unsuccessful in reducing corruption in three countries and may actually increase a firm's costs. Tran (2008) used internal records of a bribe-paying firm to determine that open auctions based on 'best-price' (lowest projected costs after meeting a minimal quality requirement) could significantly reduce corruption, but reduced the firm's profits and may actually have created a system that chose a less-efficient contractor.

4.4.4 Across corruption measurement outcomes

- Studies that measure corruption using *absenteeism* find success in both an institutional monitoring and financial incentive scheme among teachers (Duflo et al. 2010), and a community monitoring and decentralisation scheme among healthcare professionals (Bjorkman and Svensson, 2009). However, Banerjee et al. (2007) report initial reductions in nurse absenteeism until officials stopped adhering to the monitoring and financial incentive scheme.
- Studies that measure corruption as *captured funds and resources* find mixed results. Anson et al. (2006), Asthana (2008) and Olken (2007) find no significant reductions in bribes or stolen resources through the use of PSIs, decentralisation and community monitoring, respectively. On the other hand, Chavis (2010), Di Tella and Schargrotsky (2003), Francken (2009), Olken (2007), Reinikka and Svensson (2003) and Tran (2008) find corruption successfully reduced through the use of decentralisation, institutional monitoring with non-financial incentives, community monitoring with non-financial incentives, and open procurement auctions.
- Studies that measure corruption based on *election results* also find mixed results. In Brazil (Brollo, 2009, Ferraz and Finan, 2008), a federal monitoring programme with non-financial incentives reported significant reductions in the election of corrupt mayors, but these results faded over time until a federally implemented reduction in transfers to local officials deemed corrupt, appears to have led to another reduction in voter support. In India, a less-rigorous and informative information dissemination campaign was unsuccessful in reducing voter support for corrupt officials (Banerjee et al. 2009).

4.5 Additional discussion

Up to this point, we have provided descriptions and a synthesis of the quantitative micro-level studies included in our technical report. In addition to our included studies, however, we thought it was important to discuss here two high-quality qualitative case studies, and three quantitative studies that do not evaluate an intervention, but instead offer information on an anti-corruption strategy that has yet to be implemented. These studies employ reliable methodologies and either provide support for some of the above findings or shed light on certain anti-corruption strategies that we believe are worth examining further. The evidence in this section is not intended to alter our policy recommendations, which are based solely upon the evidence of our included studies, but we believe that the additional information will be useful for both practitioners and researchers.

Knox (2009) uses qualitative research to assess the effectiveness of a multifaceted TI initiative to reduce corruption in Bangladesh. Similar in scope to the programme evaluated by Bjorkman and Svensson (2009) in Uganda, Knox provides additional support, although obviously less rigorous than a RCT evaluation, that *community monitoring and information dissemination* can be effective in another setting with support from an international NGO. Under the supervision and with support of TI, several communities in Bangladesh have created organisations (committees of concerned citizens; CCCs) composed of selected individuals from various sectors who are seen to be uncorrupted and influential in their community. The CCCs work to identify corruption points, conduct meetings with service providers, issue report cards on corruption, disseminate their findings to the public, and (together with groups of youth volunteers) try to raise awareness about corruption generally. According to Knox (2009), the programme has been viewed as a success in increasing the accountability and transparency of education and health related services, and it has improved accessibility to certain services within these sectors. Nevertheless, in the communities where monitoring occurs, it is difficult to measure exact numerical effects in reducing specific corrupt activities, such as bribing and stealing, since this is a qualitative assessment. Knox's findings support the combination of community monitoring and non-financial incentives (information dissemination), which are seen as successful in Bjorkman and Svensson (2009), Francken (2009) and Reinikka and Svensson (2003).

Davis (2004) is a qualitative study that uses extensive data collection to gain empirical evidence on corruption in public water and sanitation services in nine states of Pakistan and India. Davis focuses on two cases that successfully *changed the rules* to reduce corruption opportunities through accountability and transparency measures, and that augmented the cost of corruption through increasing the moral cost of being caught and the possibility of losing a highly coveted job. For example, in Hyderabad, a centralised system has bypassed the previous multi-layered bureaucratic process for applying for a new water or sewer connection. The process is now completed in one visit in a public setting with accurate price lists posted and a computer programme that completes the majority of the work and removes much of the decision-making and processing power from individual bureaucrats. In this way, the opportunity for bureaucrats to engage in corruption is limited, since the main tasks are completed by a machine. This qualitative analysis provides illustrative, although not generalisable, findings that support the potential of technology to reduce corruption. We believe that this kind of anti-corruption intervention is worth looking into further.

While reviewing studies for inclusion, we came across three micro-level quantitative studies on *gender* which examine the attitudes and hypothetical behaviour of potentially corrupt officials rather than evaluate an anti-corruption strategy. Although no programme was implemented, the results of the quantitative experiments are interesting as there are, currently, no programme evaluations on strategies related to gender as a tool for reducing corruption. Alhassan-Alolo (2008) administered a survey of hypothetical scenarios to male and female Ghanaian public servants in order to understand their attitudes toward corruption and their likelihood of engaging in corrupt behaviour. These hypothetical scenarios, related to bribery and nepotism, test the author's hypotheses that corruption is merely a function of opportunities, networks, and social norms (i.e. appropriate behaviour, perceptions of expectations, and fear of deviating from expectations). Using cross-sectional data, the author finds that no significant differences existed between the hypothetically corrupt behaviour of men and women. Surprisingly, nepotism may actually have been worse among women, who, more than men, are expected to take care of their families.

Alatas et al. (2008) ran experimental games in India (Delhi) and Indonesia (Jakarta) to determine whether men and women exhibit different attitudes towards corruption. Players were randomly designated as 'firms' that can offer bribes at a cost, 'officials' that can accept bribes with certain payoffs and 'citizens' that can punish either player for their corrupt activities. Based on a one-shot game, there were no significant differences in attitudes between the genders in either country.

Finally, Vijayalakshmi (2008) used randomly reserved local presidential seats for women to examine how corruption and attitudes toward corruption vary among these local leaders in India. As concluded in the previous two studies, Vijayalakshmi's analysis indicates no difference in corruption based on the gender of the local president. Otherwise stated, based on the collected survey data, gender does not appear significant in explaining local levels of corruption.

All of these micro-level gender-based anti-corruption studies find that females are no different to males, on average, in both their attitudes towards corruption and their tendency to engage in corrupt activities. Although cross-country analyses (Dollar et al. 1999, Swamy et al. 2000) indicate that countries with greater female representation in parliament have lower levels of corruption, it is hard to know if this is a causal link since there are so many other differences among countries that could underlie the correlation. Therefore, while development proponents support the increase of female participation in government for various reasons, the micro-level studies outlined above provide evidence that this strategy does not lead to reductions in corruption.

5. Strengths and limitations

5.1 Strengths

This review's greatest strengths are the broad scope of its search strategy, the targeted focus of its research question, and the high-quality studies that have been included in its synthesis process. First, by searching a total of 37 electronic databases, search engines, journals and organisational websites we generated an evidence base that is truly comprehensive. The scope of our review gave us certain advantages: it not only enabled us to point out lacunae in the research literature and to suggest topics for further research, but it also allowed us to minimise publication bias by including databases that contain dissertations and other unpublished works.

Moreover, several of the published studies we included in our synthesis showed that the anti-corruption strategy they evaluate did not have a significant effect. We were thus able to reduce the chance that our review would overstate the effectiveness of anti-corruption strategies. Second, by focusing only on high-calibre empirical micro studies that evaluate a specific anti-corruption strategy, we ensured that our synthesis project would yield clear policy implications for individual organisations seeking to implement specific interventions. Nevertheless, the narrow focus of the review can also be viewed as a limitation, as we have articulated below. Third, through our rigorous inclusion and exclusion process, we have selected the highest-quality studies that address our research topic in several public sectors of various developing countries around the world.

5.2 Limitations

We limited our review to high-quality empirical, micro-level studies to ensure that we considered only reliable results from research that utilized strong identification strategies. However, cutting out all macro-level studies imposes limitations. We ultimately decided to restrict the scope of our review in this way because (i) we wanted to isolate those anti-corruption strategies that a single organisation such as DFID could implement and (ii) we anticipated the difficulty of synthesising these micro studies with macro or cross-country studies that require countrywide reforms or blend together data from multiple different strategies across a multitude of countries. Yet at the same time, we recognise that much of the anti-corruption literature is based on cross-country data, and many of these findings are relevant to our research question. We attempted to address this concern by using certain prominent theoretical and macro studies to structure and contextualise the results of our synthesis.

Our review was also limited by the lack of relevant evidence available. In general, there is a lack of high-quality empirical micro studies that evaluate anti-corruption strategies. Thus, our review is limited both in the types of anti-corruption strategies it addresses and in the geographic regions in which those strategies were implemented.

Another specific issue is that we did not explicitly include public sector absenteeism in our search strategy, even though it is a form of corruption. Our search strategy focused on anti-corruption, in general, rather than specific strategies used to combat each form of corruption. A key issue to note: absenteeism is increasingly being viewed as a form of corruption, as it involves bureaucrats faking work records and still receiving their pay. However, not all studies on absenteeism conceptualize absenteeism as corruption. Therefore, our review only captured studies that conceptualize absenteeism as corruption, and should not be viewed as a review of the absenteeism literature. This is a weakness

of our review, and unfortunately it was not brought to our attention until after we completed the first draft of this report. However, for those interested in absenteeism, a systematic review on the topic is currently underway and should provide a more comprehensive picture of effective strategies to specifically reduce absenteeism⁸.

Finally, there is the question of generalisability. Like all systematic reviews, it is hard to know whether the results we have gleaned from our included studies are applicable to other contexts. As stated above, we have attempted to address this problem by excluding macro studies that focus on anti-corruption strategies that were implemented within the context of countrywide reforms. We also tried to address this problem by distinguishing between strategies that utilise monitoring or incentives and those that change the underlying rules of the system, because we believe that the latter category of strategies are more generalisable to other contexts.

⁸ http://www.dfid.gov.uk/R4D/PDF/Outputs/SystematicReviews/FINAL-Q39-Monitoring-Attendance-Protocol-DFID-GRADE.doc_P1.pdf

6. Conclusions and recommendations

6.1 Main conclusions

Given the small number of high-quality empirical evaluations that measure the effectiveness of anti-corruption strategies in the developing world, we are wary of making any sweeping conclusions. Nevertheless, the papers included in our review provide insight on anti-corruption efforts that have been successful in particular settings, e.g. within a specific country, community or public sector, or against a particular type of corruption. Thus, while attempting to avoid overstating our results, we highlight below some of the key findings and distinctions in our included studies.

Under the category of monitoring and incentives, the programmes included in our analysis found varying levels of success. In order to work well, monitoring programmes have two important requirements: first, the programmes must be implemented and monitored by a party desiring to lower corruption, and second, monitoring programmes must be combined with some incentive programme. Incentives can be financial or non-financial. For example, they can take the form of a wage-reduction punishment for individuals discovered to be corrupt or a strong media campaign that publishes corruption levels of elected officials - putting punishment into the hands of the population that votes or receives public services. It is important to note that programmes that relied on the use of media were largely implemented in regions where there was already reliable access to media. Information dissemination by newspapers, radio and television is not always possible or reliable.⁹ The use of local media, e.g. newspapers, radio and television, may be difficult to exploit in some areas of the developing world, but where infrastructure already exists the strategy could be highly cost-effective.

Among programmes that seek to change the rules of the system we investigated decentralisation and open procurement auctions. Decentralisation is a promising intervention, especially when pre-implementation includes building capacity of local officials and infrastructure, possibly with the support of a locally trusted and knowledgeable NGO. Additionally, success appears more probable when the programme is coupled with an increase in community participation and interest in addressing local public service issues because it increases the implementer's accountability to the population. Furthermore, the initial level of community cohesiveness and inclusion of citizens from all socio-economic classes may also greatly influence the level of success in reducing corruption and not merely shifting corruption from central government officials to local elites (Bjorkman and Svensson, 2009, Chavis, 2010, Olken, 2007).

When attempting to reduce the capture of public funds and resources, several strategies appeared to be effective in various sectors and settings across six studies: decentralisation, institutional monitoring with non-financial incentives, community monitoring with non-financial incentives, and open procurement auctions. Studies that measured programme success as a reduction of absenteeism found success in a community monitoring and decentralisation scheme, but mixed results based on evidence from two institutional monitoring and financial incentives strategies.

⁹ For a non-corruption related analysis of the relationship between responsiveness of governments to the population and media availability, see Besley et al. (2002).

6.2 Policy and practice recommendations

The following recommendations on the policy and practice of anti-corruption strategies are drawn directly from the included empirical micro-level studies, our interpretation of their results, and conversations with specialists in the field. The practical application of these recommendations will depend upon the organisation and context in which the strategy is intended to be implemented. We note that differences between organisation's internal procedures limit our ability to outline specific steps that are applicable to all institutions. Therefore, the practice recommendations are rather broad and intended to guide the processes of organisations, institutions or countries, which can identify how these suggestions fit best into their own circumstances.

- *Monitoring and incentives should be combined.* A programme that utilises this combination can prevent corruption by increasing the probability of being caught engaging in corrupt activities, and increasing the punishment for being corrupt (or, conversely, by increasing the reward for not being corrupt). Monitoring on its own is ineffective, because the individual must face a punishment for being corrupt. Similarly, increasing the incentive to stay honest has no effect when the probability of getting caught is too small.
- *The monitoring and incentives scheme must align with all involved parties' incentives and local-specific market structures.* When nurse managers permitted nurse absences to bypass a monitoring mechanism intending to punish absenteeism, the programme became toothless (Banerjee et al. 2007). Similarly, if auditors are corruptible themselves, monitoring will be ineffective.
- *Community-level monitoring can be successful, but only when the community can punish corruption.* Giving community members an opportunity to report corruption has no effect on corruption when the officials do not face punishment if found corrupt (Banerjee et al. 2007, Olken, 2007). However, when the community has the power to punish corrupt individuals, for example by holding elections that are likely to unseat a corrupt individual, then these programmes may succeed (Brollo, 2009, Ferraz and Finan, 2008). We emphasise, however, that community-level monitoring has had mixed results, and it appears to be an intervention whose success is highly variable and dependent on the conditions surrounding the incentives, the probability of getting caught, and a community's capacity. Therefore, community-based monitoring programmes should be carefully designed.
- *Media can be a useful incentive for enforcing corruption reduction.* When bureaucrats or elected officials are held responsible for corruption, it is possible to use the threat of unseating an official or publicising corrupt behaviour as an incentive (Brollo, 2009, Ferraz and Finan, 2008, Francken, 2009, Reinikka and Svensson, 2003). In this case, media such as newspapers, television or radio are useful and often necessary methods of publicising corruption to the electorate, to empower the community to punish corrupt officials. Further implementation considerations include having an established and trusted media outlet in the community and using media that can best reach the community based on its education level.
- *Decentralisation may be particularly successful where there is local capacity and high levels of participation.* Decentralisation can reduce corruption by bringing the accountability for programme implementation to

officials who are elected exclusively by the population they serve, and who risk losing their elected position if a programme is highly corrupt. Because decentralisation shifts programme implementation responsibilities to a different set of individuals it is important that the new managing department has the capacity to run the programme in question. For this reason, decentralisation strategies had the greatest success when combined with high levels of community participation and when pre-implementation included building capacity of local officials and infrastructure (Bjorkman and Svensson, 2009, Chavis, 2010). Thus, it is important to be aware that decentralisation may be an expensive policy when implemented in communities that lack participation and have limited local capacity. However, more research is needed to understand long-running effects of decentralisation.

- *Decentralisation is only successful when decision-makers and service providers are held accountable by programme recipients.* When accountability is upheld through elections, then voters must be aware of corruption levels. Some successful decentralisation programmes combine decentralisation with community monitoring programmes, to ensure that the voters and service recipients know true corruption levels (Bjorkman and Svensson, 2009, Chavis, 2010).
- *Non-governmental organisations can be useful tools in implementing programmes that change the rules or alter monitoring and incentives schemes.* In several cases examined, anti-corruption strategies appeared to be more effective when a locally trusted NGO was able to provide training and supervision and support implementation (Banerjee et al. 2007, Bjorkman and Svensson, 2009, Chavis, 2010, Duflo et al. 2010, Francken, 2009, Olken 2007, Reinikka and Svensson, 2003).

In summary, the most successful corruption-reduction strategies create a situation in which the potentially corruptible official chooses not to engage in corruption because the cost of corruption outweighs its benefits. This can be brought about by increasing both the probability of being caught and the punishment if caught. It can also be brought about by placing the corruptible decision in the hands of someone who faces a naturally higher cost of being corrupt.

6.3 Research recommendations

This review makes clear that one glaring obstacle preventing evidence-based anti-corruption reforms from being implemented is the lack of reliable research. The body of micro-level empirical studies on anti-corruption interventions is extremely small at this point. Thus, it is imperative that more such research is conducted, and that it examines each anti-corruption strategy in a variety of different settings.

However, it is important that these future efforts are properly focused. Based on the anti-corruption literature reviewed for this report, we offer recommendations below for guiding future research:

- Test multiple strategies simultaneously.* Many of the papers discussed here evaluate the costs and benefits of a specific corruption-reduction programme. However, very few studies examine the relative cost-effectiveness of several programmes. We recommend that future studies implement more than one intervention at the same time, but across different populations, as with Olken (2007), to facilitate the evaluation of the relative benefits of different corruption-reduction strategies.

- ii *Incorporate costs and cost-benefit calculations into analysis.* Such information is vital for policy-makers trying to decide which anti-corruption strategy to implement, and is remarkably absent from the anti-corruption literature. Many evaluations of corruption-reduction strategies examine only the reduction in corruption, without considering the cost of implementing that strategy. To understand the overall and relative success of a corruption-reduction strategy it is important to know its cost-effectiveness.
- iii *Increase efforts to explore anti-corruption strategies that change the rules.* Preliminary analysis suggests high potential for strategies to decrease corruption by eliminating the opportunities for engaging in corrupt activities through a change in process (Banerjee et al. 2008, 2009). Programmes that change the rules of the system can reduce the opportunities for engaging in corrupt behaviour and can be better at aligning the incentives of all stakeholders. Yet such strategies are also the least explored. There are opportunities for two types of research: both theoretical and empirical research should examine methods of changing the rules in order to reduce opportunities for corruption. Empirical methods should analyse the effectiveness of existing rule-changing strategies, such as those that involve decentralisation and the replacement of corruptible officials with automated programmes. With regard to the latter in particular, Davis (2004) provides promising evidence that technology can be an effective anti-corruption strategy, but it would be extremely helpful to see more analysis on this topic. A shift in the percentage of women represented in government and bureaucratic positions does not appear to be a viable strategy to reduce corruption. However, further testing could validate this hypothetical finding.

While anti-corruption research is still in its infancy and there is obviously much more to be done, we do see some promising signs. For example, all but one of the studies included in this review (Di Tella and Schargrodsky, 2003) were conducted in the last decade and 12 out of 14 have been published within the past five years. Several ongoing studies were also identified in our search, such as research on the role of wages, incentives and audits on tax inspectors' behaviour in Pakistan and community driven development in Sierra Leone. Thus, there is clearly burgeoning interest in conducting such analyses.

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Appendix 1.1: Authorship of this report

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Acknowledgements

We would like to thank the Department for International Development (DFID) for making this review possible. We would also like to thank the EPPI-Centre and 3ie for providing feedback and criticisms.

Conflicts of interest

Rema Hanna has been involved in conducting relevant empirical and secondary research on corruption. However, we do not believe that this constitutes a conflict of interest, and we have approached the research material in an objective and impartial manner.

Appendix 2.1: Exclusion criteria

A. Exclusion criteria

- A1: Exclude on time: study written before 1996
- A2: Exclude on geographical location (i.e. not focused on a developing country; see list below)
- A3: Exclude on language (i.e. written in language other than English)
- A4: Exclude on topic:
 - A4.1: Does not evaluate an anti-corruption strategy (not relevant)
 - A4.2: Examines corruption in a private sector setting (population, individuals or private company)
 - A4.3: Ongoing study: no results
 - A4.4: Evaluates impact of corruption
- A5: Exclude on study design:
 - A5.1: Macro level study
 - A5.2: Theoretical study
 - A5.3: Anti-corruption strategy (no evaluation)
 - A5.4: Not an empirical study
- A6: Exclude on poor quantitative study quality:
 - A6.1: No data collection methodology provided
 - A6.2: No description of population studied provided
 - A6.3: Weak causal relationship between strategy and anti-corruption
 - A6.4: Outcome indicator used to measure corruption is not relevant
 - A6.5: No control group (quasi-experimental)
 - A6.6: No clear description or discussion of analysis process
 - A6.7: Other methods or design descriptions are unclear or not present
 - A6.8: No impact discussion
- A7: Qualitative study
- A8: Study not available - identify sources explored
- A9: Unsure - discuss with team
- A10. Include: attached or available at the library (note if needs to be retrieved)

List of Excluded wealthy countries

We limited our research to countries that are considered part of the developing world. This distinction is made by excluding the wealthiest 50 countries of the world. According to the World Bank purchasing power parity (PPP) estimates, 2009, these are:

1. Luxembourg *tied with* Macao
2. United Arab Emirates
3. Norway
4. Singapore
5. Brunei Darussalam
6. United States
7. Kuwait
8. Switzerland *tied with* Hong Kong
9. Ireland
10. Netherlands
11. Australia
12. Austria
13. Canada
14. Sweden
15. Iceland
16. Denmark

17. United Kingdom
18. Germany
19. Belgium
20. France
21. Finland
22. Bahrain
23. Spain
24. Japan
25. Italy
26. Equatorial Guinea
27. Greece
28. New Zealand
29. Israel
30. Cyprus
31. Republic of Korea (South Korea)
32. Slovenia
33. Trinidad and Tobago
34. Czech Republic
35. Oman
36. Portugal
37. Saudi Arabia
38. Malta
39. Slovak Republic
40. Croatia
41. Hungary
42. Seychelles
43. Estonia
44. Poland
45. Russian Federation
46. Antigua and Barbuda
47. Lithuania
48. Libya
49. Latvia
50. Chile

Appendix 2.2: Search strategy for electronic databases

Source	Date	Search string	Search methods
Databases			
EBSCO Business Source Premier	10/29/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) AND ("developing nation" OR low?income OR "low income" OR middle?income OR "middle income" OR "developing country" OR "developing countries" OR "less developed country" OR "third world country" OR "underdeveloped country" OR Africa OR African OR Asia OR Asian OR "Latin America" OR "South America" OR "Latin American" OR Afghanistan OR Bangladesh OR Benin OR Burkina OR Burundi or Cambodia or Chad or Congo or Cote or Eritrea or Ethiopia or Gambia or Ghana or Guinea or Haiti or Kenya or Korea or Kyrgyz* or Lao? or Liberia or Madagascar or Malawi or Mali or Maurit* or Mozambique or Myanmar or Nepal or Niger or Nigeria or Pakistan or Rwanda or Papua or Sao or Senegal or Sierra or Melanes* or Somalia or Tajik* or Tanzania or Togo or Uganda or Uzbek* or Viet* or Yemen or Zambia or Zimbabwe or Burma or Solomon or Albania or Algeria or Angola or Armenia or Azerbaijan or Bhutan or Bolivia or Bosnia or Cameroon or Cape Verde or China or Colombia or Djibouti or Dominican or Ecuador or Egypt or El Salvador or Georgia or Guatemala or Guyana or Honduras or India or Indonesia or Iran or Iraq or Jordan or Kiribati or Lesotho or Macedonia or Indian Ocean or Micronesia or Moldova or Mongolia or Morocco or Namibia or Swaziland or Syria or Thailand or Timor or Tong* or Tunisia or Turk* or Ukraine or Vanuatu or West Bank or Gaza or Maldives or Marshall or Palestine or Syrian or Samoa or Argentina or Belize or Belarus or Botswana or Brazil or Bulgaria or Chile or Costa or Croatia or Cuba or Dominica or Fiji or Gabon or Grenada or Jamaica or Kazakhstan or Latvia or Lebanon or Libya or Lithuania or Malaysia or Mayotte or Mauritius or Mexico or Montenegro or Palau or Panama or Poland or Romania or Russia or Seychelles or Slovakia or Lucia or Serbia or Suriname or Uruguay or Venezuela or Yugoslavia or Libia or Mariana or Russian or Kitts or St Vincent or Grenadines) AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention) AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR weakening OR improve OR impact OR evaluate OR evaluation OR assessment)	Searched using full string. Limited results to references written in English after 1995. Looked for first concept in abstract and did not choose specific text in other fields.

Source	Date	Search string	Search methods
EconLit	10/26/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) AND ("developing nation" OR low?income OR "low income" OR middle?income OR "middle income" OR "developing country" OR "developing countries" OR "less developed country" OR "third world country" OR "underdeveloped country" OR Africa OR African OR Asia OR Asian OR "Latin America" OR "South America" OR "Latin American" OR Afghanistan OR Bangladesh OR Benin OR Burkina OR Burundi or Cambodia or Chad or Congo or Cote or Eritrea or Ethiopia or Gambia or Ghana or Guinea or Haiti or Kenya or Korea or Kyrgyz* or Lao? or Liberia or Madagascar or Malawi or Mali or Maurit* or Mozambique or Myanmar or Nepal or Niger or Nigeria or Pakistan or Rwanda or Papua or Sao or Senegal or Sierra or Melanes* or Somalia or Tajik* or Tanzania or Togo or Uganda or Uzbek* or Viet* or Yemen or Zambia or Zimbabwe or Burma or Solomon or Albania or Algeria or Angola or Armenia or Azerbaijan or Bhutan or Bolivia or Bosnia or Cameroon or Cape Verde or China or Colombia or Djibouti or Dominican or Ecuador or Egypt or El Salvador or Georgia or Guatemala or Guyana or Honduras or India or Indonesia or Iran or Iraq or Jordan or Kiribati or Lesotho or Macedonia or Indian Ocean or Micronesia or Moldova or Mongolia or Morocco or Namibia or Swaziland or Syria or Thailand or Timor or Tong* or Tunisia or Turk* or Ukraine or Vanuatu or West Bank or Gaza or Maldives or Marshall or Palestine or Syrian or Samoa or Argentina or Belize or Belarus of Botswana or Brazil or Bulgaria or Chile or Costa or Croatia or Cuba or Dominica or Fiji or Gabon or Grenada or Jamaica or Kazakhstan or Latvia or Lebanon or Libya or Lithuania or Malaysia or Mayotte or Mauritius or Mexico or Montenegro or Palau or Panama or Poland or Romania or Russia or Seychelles or Slovakia or Lucia or Serbia or Suriname or Uruguay or Venezuela or Yugoslavia or Libia or Mariana or Russian or Kitts or St Vincent or Grenadines) AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention) AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR weakening OR improve OR impact OR evaluate OR evaluation OR assessment)	Searched using full string. Limited results to references written in English after 1995. Looked for first concept in abstract and did not choose specific text search for other concepts.
IDEAS	10/28/2010	(corrupt corruption bribe bribery launder fraud "anticorruption") + ("developing country" "developing nation" "low income" "middle income" Africa Asia "Latin America" "South America") + (strategy program policy intervention)	Used the first three concepts of the full search string. Limited results to references written after 1995. Additional spellings were automatically included by database.

Source	Date	Search string	Search methods
Index to Theses (UK)	10/29/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption) AND ("developing nation" OR low?income OR middle?income OR "developing country" "less developed country" OR Africa OR African OR Asia OR Asian OR "Latin America" OR "South America") AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention)	Searched using the first three concepts of the full string and did not include the list of developing countries. Limited results to references that were written after 1995.
International Bibliography of Social Sciences (IBSS)	11/1/2010	anti-corruption	Searched on 'anti-corruption'. Selected 'social sciences' and limited results to English publications after 1995.
JOLIS (Joint Bank-Fund Library Network)	11/2/2010	anti-corruption	Searched on 'anti-corruption'. Limited results to references written in English after 1995.
JSTOR	10/26/2010	(corrupt# OR bribe# OR launder# OR fraud# OR anti-corruption or anticorruption) AND ("developing nation" OR "low income" OR "middle income" OR "developing country" OR "developing countries" OR "less developed country" OR Africa OR African OR Asia OR Asian OR "Latin America#") AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention) AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR weakening OR improve OR impact OR evaluate OR evaluation OR assessment).	Used the Advanced Search tool to obtain articles from journals related to African Studies, Asian Studies, Economics, Latin American Studies, Political Science, Public Policy and Administration, and Sociology. The entire search string besides the list of developing countries was used. Results were sorted by relevance with importance given to 'anticorruption' and 'corrupt#' and the first 550 were taken as they began to appear irrelevant after this point.

Source	Date	Search string	Search methods
Proquest's Digital Dissertation (US)	11/1/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption) AND TEXT("developing nation" OR low?income OR middle?income OR "developing country" OR "less developed country" OR Africa OR African OR Asia OR Asian OR "Latin America*" OR "South America*") AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention OR measure) AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR improve OR impact OR evaluate OR evaluation OR assessment) AND PDN(>1/1/1996)	Searched using the full search string, except for the list of developing countries in concept two. Searched for concept two in all of text; all other concepts were searched for in the 'citation and abstract'. Limited results to publications written after 1995.
Science Direct	10/28/2010	pub-date > 1995 and TITLE-ABSTR-KEY(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption) AND FULL-TEXT("developing nation" OR low?income OR middle?income OR "developing country" OR "less developed country" OR Africa OR African OR Asia OR Asian OR "Latin America*" OR "South America*") AND FULL-TEXT (strategy OR strategies OR program OR programme OR policy OR policies OR intervention) AND FULL-TEXT (reduce OR reduction OR combat OR lessen OR fight OR weaken OR improve OR impact OR evaluate OR evaluation OR assessment) [All Sources(Business, Management and Accounting,Economics, Econometrics and Finance,Social Sciences)]	Used full search string besides the list of developing countries. Limited search to results to references written in English after 1995 in sources related to Business, Management and Accounting, Economics, Econometrics and Finance, and Social Sciences. Searched first concept in title, abstract or keywords and all other concepts were searched on full text.
Social Science Research Network (SSRN)	10/29/2010	"anticorruption", "antifraud", "corruption"	Searched three words of the full string's first concept.
Social Sciences Citation Indexes (SSCI)	10/27/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) AND ("developing nation" OR low?income OR "low income" OR middle?income OR "middle income" OR "developing country" OR "developing countries" OR "less developed country" OR "third world country" OR "underdeveloped country" OR Africa OR African OR Asia OR Asian OR "Latin America" OR "South America" OR "Latin American" AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention) AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR weakening OR improve OR impact OR evaluate OR evaluation OR assessment)	Searched using the full search string besides the list of developing countries. Limited results to references written after 1995.

Source	Date	Search string	Search methods
SocINDEX	10/27/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) AND ("developing nation" OR low?income OR "low income" OR middle?income OR "middle income" OR "developing country" OR "developing countries" OR "less developed country" OR "third world country" OR "underdeveloped country" OR Africa OR African OR Asia OR Asian OR "Latin America" OR "South America" OR "Latin American" OR Afghanistan OR Bangladesh OR Benin OR Burkina OR Burundi or Cambodia or Chad or Congo or Cote or Eritrea or Ethiopia or Gambia or Ghana or Guinea or Haiti or Kenya or Korea or Kyrgyz* or Lao? or Liberia or Madagascar or Malawi or Mali or Maurit* or Mozambique or Myanmar or Nepal or Niger or Nigeria or Pakistan or Rwanda or Papua or Sao or Senegal or Sierra or Melanes* or Somalia or Tajik* or Tanzania or Togo or Uganda or Uzbek* or Viet* or Yemen or Zambia or Zimbabwe or Burma or Solomon or Albania or Algeria or Angola or Armenia or Azerbaijan or Bhutan or Bolivia or Bosnia or Cameroon or Cape Verde or China or Colombia or Djibouti or Dominican or Ecuador or Egypt or El Salvador or Georgia or Guatemala or Guyana or Honduras or India or Indonesia or Iran or Iraq or Jordan or Kiribati or Lesotho or Macedonia or Indian Ocean or Micronesia or Moldova or Mongolia or Morocco or Namibia or Swaziland or Syria or Thailand or Timor or Tong* or Tunisia or Turk* or Ukraine or Vanuatu or West Bank or Gaza or Maldives or Marshall or Palestine or Syrian or Samoa or Argentina or Belize or Belarus of Botswana or Brazil or Bulgaria or Chile or Costa or Croatia or Cuba or Dominica or Fiji or Gabon or Grenada or Jamaica or Kazakhstan or Latvia or Lebanon or Libya or Lithuania or Malaysia or Mayotte or Mauritius or Mexico or Montenegro or Palau or Panama or Poland or Romania or Russia or Seychelles or Slovakia or Lucia or Serbia or Suriname or Uruguay or Venezuela or Yugoslavia or Libia or Mariana or Russian or Kitts or St Vincent or Grenadines) AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention) AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR weakening OR improve OR impact OR evaluate OR evaluation OR assessment)	Searched using full string. Limited search results to references written in English after 1995.
Wiley Interscience	10/27/2010	(corrupt* OR bribe* OR launder* OR fraud* OR "anti corruption" OR anticorruption) in Abstract AND ("developing nation" OR "low income" OR "middle income" OR "developing country" OR "less developed country" OR Africa OR African OR Asia OR Asian OR "Latin America") in All Fields AND (strategy OR program OR policy OR intervention OR evaluate OR evaluation OR assessment) in Abstract AND (reduce OR reduction OR combat OR lessen OR fight OR weaken OR improve OR impact)	Searched using full string and the list of developing countries. The first and third concepts were searched for in the abstract and the other two concepts were searched for in the text. Limited results to references written after 1995.

Source	Date	Search string	Search methods
Organisational websites			
Abdul Latif Jameel Poverty Action Lab (JPAL)	9/21/2010 and 10/21/2010	"corruption", "anticorruption", "bribe", "fraud", 'launder'	Searched for each term individually in the entire website, publications and evaluations using their simple search tool. Further browsed and handsearched publications and evaluations.
Africa Development Bank	10/19/2010		Searched under 'economic and financial governance' for 'all countries'. Also browsed and handsearched within their 'Anti-Corruption Strategy' section.
Asian Development Bank	10/25/2010	Anti-corruption	ADB publications were broken down into topics and subtopics. Pulled articles from the topic: 'Governance and Capacity Development' and subtopic: 'Anti-corruption'.
AusAID, Australia	11/2/2010		Browsed and handsearched the 'Governance' section of website.
Bill and Melinda Gates Foundation	10/21/2010		Browsed and handsearched the global development programmes, projects, and publications.
DFID, UK	11/2/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) and "anti-corruption"	Searched through Google Scholar using the first concept and controlling for publisher (DFID). Also browsed website, searched website on 'anti-corruption' and handsearched the results.

Source	Date	Search string	Search methods
European Bank for Reconstruction and Development	10/25/2010	"corrupt", "corruption", "anticorruption"	Searched entire website for the three keywords of the first concept. Browsed and handsearched 'working papers', 'law in transition' papers, and 'accountability and transparency' section of website.
Innovations for Poverty Action (IPA)	10/21/2010	"corruption"	Searched and browsed both projects and publications with a corruption theme.
Inter-American Development Bank	10/20/2010	"corruption", "anticorruption", "bribe" and "fraud"	Searched under 'Publications' for the following keywords separately: 'corruption', 'anticorruption', 'bribe' and 'fraud'. Browsed and handsearched under the topic: 'Transparency, Support for Countries on Transparency and Anticorruption'.
NBER Working Papers	09/20/2010 and 11/1/2010	(corrupt* OR bribe* OR launder* OR fraud) AND (develop* OR poor OR low?income OR Africa OR Asia OR Latin America) AND (strategy OR program OR policy OR policies) AND (reduce OR combat OR lessen OR fight OR anti OR weaken) (corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) AND (strategy OR strategies OR program OR programme OR policy OR policies OR intervention)	Searched using the initial full string. Searched again using the complete first and third concept of the updated full search string.
Norwegian Agency for Development Cooperation (NORAD)	11/2/2010		Handsearched and browsed publications listed under the theme 'Anti-corruption'.

Source	Date	Search string	Search methods
Transparency International (TI)	11/2/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt)	Browsed and handsearched publications: 'Global Corruption Reports', 'Working Papers', 'Fighting Corruption' toolkits, and 'Anti-Corruption Research News'. Also searched using Google Scholar by controlling for Transparency International as the author/publisher and searching for the first concept.
U4 Anti-Corruption Resource Centre	11/2/2010		Handsearched and browsed 'Health Sector', 'Natural Resource Management', and 'Public Financial Management' and 'Procurement' sections of the website.
United Nations (UN)	11/1/2010	(corrupt* OR bribe* OR launder* OR fraud* OR anti?corruption OR anti?corrupt) AND ("developing nation" OR low?income OR "low income" OR middle?income OR "middle income" OR "developing country" OR "developing countries" OR "less developed country" OR "third world country" OR "underdeveloped country" OR Africa OR Asia OR "Latin America" OR "South America")	Browsed on the first concept (title) and second concept (text) in UNESDOC-SHS. Handsearched website sections on UNODC (UN Office on Drugs and Crime) and UN Convention against Corruption.
USAID	9/24/2010	"corruption"	Searched within publications using the advanced search system where 'anticorruption' is listed as a topic option. Also searched entire website on 'corruption'.

Appendix 2.3: Journals handsearched

Source	Date	Search string	Search methods
<i>American Economic Review</i> (previous 12 months)	9/21/2010	(corrupt* OR bribe)	Searched using two keywords from the first concept. Also handsearched each issue for the last year including the most recent issue (September) at www.aeaweb.org/aer/index.php .
<i>American Economic Journal: Applied Economics</i> (previous 12 months)	10/17/2010		Handsearched each issue for the last year and including the most recent issue (October) at www.aeaweb.org/aej/app/index.php .
<i>American Economic Journal: Microeconomics</i> (previous 12 months)	11/17/2010		Handsearched each issue for the last year including the most recent issue (November) at www.aeaweb.org/aej/mic/index.php .
<i>American Economic Journal: Economic Policy</i> (previous 12 months)	11/17/2010		Handsearched each issue for the last year including the most recent issue (November) at www.aeaweb.org/aej/pol/index.php .
<i>Journal of Development Economics</i> (previous 12 months)	11/17/2010		Handsearched issues for the last year through Proquest, except for the most recent issue (September) which was handsearched at www.jed.or.kr/ .
<i>Journal of Development Studies</i> (previous 12 months)	10/19/2010		Handsearched each for the last year including the latest issue, October, through InformaWorld.
<i>Journal of Economic Perspectives</i> (previous 24 months)	9/20/2010	(corrupt* OR bribe* OR launder* OR fraud) AND (develop* OR poor OR low-income OR Africa OR Asia OR Latin America) AND (strategy OR program OR policy OR policies) AND (reduce OR combat OR lessen OR fight OR anti OR	Searched using an initial full string. Also, handsearched each issue for the last two years, including the latest fall issue at www.aeaweb.org/jep/index.php .

		weaken)	
<i>Journal of Political Economy</i> (previous 12 months)	9/21/2010 and 11/17/2010	corrupt* OR bribe	Searched using two keywords of the first concept. Also handsearched each issue for the last year including the latest issue, August, at www.journals.uchicago.edu/toc/jpe/current .
<i>Quarterly Journal of Economics</i> (previous 12 months)	10/19/2010		Handsearched 2010 issues, including the most recent issue (August) on website: www.mitpressjournals.org/loi/qjec .

Appendix 2.4: Coding tool

B. Researcher and reference details (multiple coding)

- B1. What year was the primary document published?
- B2. What year(s) was/were the actual anti-corruption programme/policies implemented?
- B3. Is this document/study closely related to any other included documents/studies?
 - B3.1: Yes. List
 - B3.2: No
- B4. What is the type of document?
 - B4.1: Journal article (peer reviewed)
 - B4.2: Unpublished working paper
 - B4.3: Report
 - B4.4: Book
 - B4.5: Thesis
 - B4.6: Other. Describe
- B5. What is the occupational and academic background of the publication's authors?
 - B5.1: Academic
 - B5.1.a: Institution name
 - B5.2: NGO
 - B5.2.a: Institution name
 - B5.3: Research organisation (e.g. JPAL, IPA)
 - B5.3.a: Institution name
 - B5.4: Government institution
 - B5.4.a: Institution name
 - B5.5: International organisation (e.g. WB, IMF)
 - B5.5.a: Institution name
 - B5.6: Other
 - B5.6.a: Institution name
- B6. Who funded the programme/policy?
- B7. Who implemented the programme/policy?
- B8. Who funded the study to evaluate the programme/policy?
- B9. Who evaluated the programme/policy?
- B10. Are there any other organisations or institutions involved with the programme/policy?
 - B10.1: Yes. Describe
 - B10.2: No
- B11. Are there any other organisations or institutions involved with the study - the evaluation of the programme/policy?
 - B11.1: Yes. Describe
 - B11.2: No

C. Intervention/strategy/programme details (objectives and aims)

- C1. What type of corruption does the study examine?
 - C1.1: Absenteeism
 - C1.2: Nepotism
 - C1.3: Soliciting bribes
 - C1.4: Stealing public resources
 - C1.5: Abuse of political position
 - C1.6: Other. Describe
- C2. In what sector/population does the corruption being evaluated take place?
 - C2.1: Education: schools or teachers

- C2.2: Health sector: hospitals or health workers
- C2.3: Infrastructure production or procurement
- C2.4: Public utilities
- C2.5: Public financial systems
- C2.6: Defence
- C2.7: Government administration (bureaucrats)
- C2.8: Social programme administration
- C2.9: Judicial system
- C2.10: Politicians (executive or legislative)
- C2.11: Other. Describe
- C3: What kind of intervention does it evaluate?
 - C3.1: Financial incentives
 - C3.2: Increasing enforcement: chances of being caught and/or punishment
 - C3.3: Information/education campaign
 - C3.4: Audits/monitoring
 - C3.5: Community monitoring
 - C3.6: Creation of an anti-corruption agency
 - C3.7: Decentralisation
 - C3.8: Whistleblowing protection
 - C3.9: Other. Describe
- C4: Does the study focus solely on testing principal-agent models while keeping the underlying rules fixed, or does it allow for the possibility of changing the government's rules?
 - C4.1: Changing monitoring/incentives (rules fixed)
 - C4.2: Changing the rules (rules not fixed)
 - C4.3: Change the rules (only)
 - C4.4: Neither. Describe
- C5: Where is the corruption taking place?
 - C5.1: At point of transfer between higher-level government and lower-level government
 - C5.2: At point of transfer between lower-level government and recipient population
 - C5.3: Other. Describe
- C6: What level did the intervention occur?
 - C6.1: National
 - C6.2: State
 - C6.3: District
 - C6.4: City/town/village
 - C6.5: Other: Describe
- C7: Theory: What is the programme theory or causal mechanism(s) behind the anti-corruption strategy?
 - C7.1: The paper did not address any programme theory or causal mechanism
 - C7.2: 1st theory or mechanism
 - C7.2.a. Describe
 - C7.3: 2nd theory or mechanism
 - C7.3.a. Describe
 - C7.4: 3rd theory or mechanism
 - C7.4.a. Describe
 - C7.5: 4th theory or mechanism
 - C7.5.a. Describe
 - C7.6: Provide any additional information on programme theory or causal mechanism

- C8: Logistics: What were the logistics of the anti-corruption strategy?
- C8.1: Did a pilot study occur?
 - C8.1.a: Yes. Describe findings or how it influenced the implementation
 - C8.1.b: No
 - C8.2: Did any additional steps (e.g. trainings) take place before the study was implemented?
 - C8.2.a: Yes. Describe. Make note of any challenges or problems at each stage, or when the study protocols were not followed
 - C8.2.b: No
 - C8.3: What were the steps involved in conducting the programme?
 - C8.3.a: Describe the services provided and actions taken to conduct the study/programme at each step of the process. Make note of any challenges or problems at each stage or when the study protocols were not followed
 - C8.4: Who were the actors and employees involved with the programme and what were their exact roles (e.g. who was in charge of what aspects)?
 - C8.4.a: Actor/employee/organisations #1
 - C8.4.b: Actor/employee/organisations #2
 - C8.4.c: Actor/employee/organisations #3
 - C8.4.d: Actor/employee/organisations #4
 - C8.4.e: Were there any relationships that may have hindered or allowed the success of the programme that would need to be considered if the study were replicated?
 - C8.5: Were any changes made to the programme once implemented?
 - C8.5.a: Yes. Provide information on changes, including but not limited to the following: roles of actors, steps implemented, why any changes occurred (i.e. breakdown of the theory or poor participation), and author and/or programme reaction to changes
 - C8.5.b: No
- C9: What were the drivers of cost for the intervention?
- C9.1: Government hires individuals or a company to monitor
 - C9.1.a: Describe length of time and amount paid
 - C9.2: Managing community monitoring
 - C9.2.a: Describe length of time and amount paid
 - C9.3: Information technology change - rewriting systems
 - C9.3.a: Costs of adopting new systems, gaining new knowledge, etc.
 - C9.4: Increase in wages
 - C9.4.a: Describe who received raises, length of time and amount paid
 - C9.5: Other drivers of cost:
 - C9.5.a: Describe the costs as related to the specific intervention

D. Study methods and quality of methodology

- D1. What kind of empirical paper is this?
- D1.1: Quantitative: micro study
 - D1.2.a: Randomised control trial (RCT)
 - D1.2.b: Quasi-experimental
 - D1.2.c: Observational/econometric (does not use random assignment)
 - D1.2.d: Other: describe

- D2. *Randomised control trial*: study information
- D2.1: Was random assignment used to assign groups?
 - D2.1.a: Yes
 - D2.1.b: No
 - D2.2: What level was randomisation conducted?
 - D2.2.a: Individual
 - D2.2.b: Household
 - D2.2.c: Village/city/town
 - D2.2.d: District
 - D2.2.e: Other. Describe
 - D2.3: Were baseline characteristics similar for all groups? (note any reason to believe that key characteristics were excluded)
 - D2.3.a: Yes
 - D2.3.b: No. Describe (identify the differences, do they appear to be important?)
 - D2.3.c: Unclear (i.e. no information provided, only written by author, no table provided)
 - D2.4: Were there any problems with the randomisation process that were mentioned? (e.g. balancing of treatment and control groups)
 - D2.4.a: Yes
 - D2.4.b: No
 - D2.4.c: Unclear
 - D2.5: How many groups were created in the study? (indicate how many, the rationale behind it and the reason for their sampling strategy)
 - D2.6: Describe any other details about the randomisation process that was provided in the paper (or believed to be purposely excluded) that would be helpful to know in the analysis of the study
- D3. *Quasi-experimental design*: study information (using regression based methods and creates comparable groups)
- D3.1: Which quasi-experimental method was used?
 - D3.1.a: Regression discontinuity
 - D3.1.b: Instrumental variables
 - D3.1.c: Propensity score matching
 - D3.1.d: Other. Describe
 - D3.2: Describe the criteria for selecting the comparison group
 - D3.3: What level was non-random assignment conducted?
 - D3.3.a: Individual
 - D3.3.b: Household
 - D3.3.c: Village/city/town
 - D3.3.d: State
 - D3.3.e: Other. Describe
 - D3.4: Were baseline characteristics similar? (note any reason to believe that key characteristics were excluded)
 - D3.4.a: Yes
 - D3.4.b: No. Describe (identify the differences, do they appear to be important?)
 - D3.4.c: Unclear. Describe
 - D3.5: Were baseline outcome measurements similar? (if applicable)
 - D3.5.a: Yes (note if there are substantive differences in any pre-tests)
 - D3.5.b: No. Describe (identify the differences, do they appear to be important?)
 - D3.5.c: Unclear. Describe

- D3.6: Describe any initial problems that appear in the methods (including instruments) or sample selection - based on author, reviewers, or your own observations.
- D4. *Observational/econometric*: study information (uses regression based methods, but no attempt to mimic random assignment)
- D4.1: Which observational/econometric method was used?
- D4.1.a: Cross-section
 - D4.1.b: Panel
 - D4.1.c: Time-series
 - D4.1.d: Other. Describe
- D4.2: Was an identification strategy outlined by the authors?
- D4.2.a: Yes. Describe
 - D4.2.b: No
 - D4.2.c: Unclear. Describe
- D4.3: Was random sampling used?
- D4.3.a: Yes. Describe
 - D4.3.b: No
 - D4.3.c: Unclear. Describe
- D4.4: Describe any details available on the identification strategy employed for their analysis, rationale behind it and if there were any problems or concerns with the methodology.
- D5. Methodology quality (additional information)
- D5.1: Were statistical power calculations noted?
- D5.1.a: Yes. Describe
 - D5.1.b: No
 - D5.1.c: Unclear. Describe
- D5.2: What were the rates of compliance? (Do these seem problematic?)
- D5.2.a: Given. Describe
 - D5.2.b: Not given
 - D5.2.c: Unclear. Explain
 - D5.2.d: Not applicable
- D5.3: What were the rates of attrition? (Do these seem problematic? Is there a great difference between comparison groups?)
- D5.3.a: Given. Describe
 - D5.3.b: Not given
 - D5.3.c: Unclear. Explain
 - D5.3.d: Not applicable
- D5.4: If necessary, did the investigators deal with the attrition or compliance issues?
- D5.4.a: Describe how.
- D5.5: Were intra-cluster correlation coefficients noted?
- D5.5.a: Yes. Describe
 - D5.5.b: No
 - D5.5.c: Unclear
 - D5.5.d: Not applicable
- D5.6: Does there appear to be any risk of sample selection bias?
- D5.6.a: Yes. Describe
 - D5.6.b: No
 - D5.6.c: Unclear
- D5.7: Does there appear to be any risk of errors-in-variables bias?
- D5.7.a: Yes. Describe
 - D5.7.b: No
 - D5.7.c: Unclear
- D5.8: Does there appear to be any risk of simultaneous causality bias?

- D5.8.a: Yes. Describe
- D5.8.b: No
- D5.8.c: Unclear
- D5.9: Does there appear to be any risk of functional form misspecification?
 - D5.9.a: Yes. Describe
 - D5.9.b: No
 - D5.9.c: Unclear
- D5.10: Are there potential sources of omitted variable bias? What is the risk level of OVB?
 - D5.10.a: Yes. Describe
 - D5.10.b: No
 - D5.10.c: Unclear

E. Participants description

- E1. What are the descriptive characteristics of the participants? (note totals and breakdown for each comparison group)
 - E1.1: Gender
 - E1.2: Average age or age group frequencies
 - E1.3: Education level
 - E1.4: Occupation
 - E1.5: Location (e.g. urban, rural, periurban)
 - E1.6: Income
 - E1.7: Religion
 - E1.8: Other applicable characteristics

F. Study context

- F1. In what country did the study take place?
- F2. On what continent did the study take place?
 - F2.1: Asia
 - F2.1.a: Central Asia
 - F2.1.b: Middle East
 - F2.1.b: East Asia (i.e. China, Hong Kong, Japan, Macau, Mongolia, Democratic People's Republic of Korea (North Korea), Republic of Korea (South Korea) and Taiwan)
 - F2.1.c: South Asia (i.e. Pakistan, India, Bangladesh, Sri Lanka, Bhutan, Nepal and Burma/Myanmar)
 - F2.1.d: South-East Asia (i.e. Cambodia, Laos, Thailand, Vietnam, Malaysia, Brunei, East Timor, Indonesia, the Philippines, Papua New Guinea and Singapore)
 - F2.1.e: Pacific islands
 - F2.2: Africa
 - F2.2.a: North Africa
 - F2.2.b: Sub-Saharan Africa
 - F2.3: Europe
 - F2.3.a: Eastern Europe
 - F2.4: North and Central America
 - F2.5: South America
- F3. What is the type of government in the country where the study took place?
 - F3.1: Autocratic
 - F3.2: Democratic
 - F3.3: Socialist
 - F3.4: Communist
 - F3.5: Other

- F4. Was the anti-corruption strategy combined with other types of interventions or did it occur at the same time as other types of interventions?
- F4.1: Yes. Describe
- F4.2: No.
- F4.3: Unclear. Explain
- F5. Were there any unique social, political, economic or religious circumstances that may have contributed to these results? (e.g. a charismatic and/or atypical leader)
- F5.1: Yes. Describe in detail the situation and whether the authors controlled for this situation in their analysis
- F5.2: No
- F5.3: Unclear. Explain
- F6. Were there any natural disasters or environmental factors that may have contributed to these results?
- F6.1: Yes. Describe in detail the situation and whether the authors controlled for this situation in their analysis
- F6.2: No
- F6.3: Unclear. Explain
- F7. Describe any other social, economic or political circumstances that should be considered when reviewing the study's results

G. Outcomes

The outcomes table below will include the following information along with treatment and control outcomes for the entire sample and sub-samples (e.g. geographic region, gender, occupation), the statistical tests conducted and the level of statistical significance.

- G1. What is the indicator variable used to determine changes in corruption?
- G2. What is/are the independent variable(s)?
- G3. What is the effect found and its size?
- G3.1: Positive effect (intervention reduces corruption)
- G3.1.a: Size of effect
- G3.2: Negative effect (intervention does NOT reduce corruption)
- G3.2.a: Size of effect
- G4: Explain the overall extent to which data cited support the conclusions that the authors draw (cross-comparison of data and written conclusions)
- G5: Was the study free from selective outcome reporting?
- G5.1: Yes
- G5.2: No. Explain
- G6. Record any additional information or comments about the primary study

Appendix 3.1: Details of studies included in the review

Short title (first author)	Document details	Corruption description	Intervention details	Methodology	Location [country and region]	Participants
Anson, et al. (2006)	Journal article (peer reviewed) <i>Journal of Economic Analysis and Policy</i>	<i>Type of corruption:</i> • Soliciting bribes <i>Sector of corruption:</i> • Government administrators (bureaucrats) tariff officials <i>Place of corruption:</i> • At point of transfer between lower-level government and recipient population • At point of transfer between customs officials and businesses	<i>Intervention category:</i> • Monitoring and incentives <i>Intervention type:</i> • Monitoring by an institution, a private third party	Observational / econometric	Argentina South America Indonesia South-East Asia The Philippines South-East Asia	Firms, pre-shipment inspection (PSIs) companies and customs agents
Asthana (2008)	Journal article (peer reviewed) <i>Public Administration and Development</i>	<i>Type of corruption:</i> • Soliciting bribes <i>Sector of corruption:</i> • Public utilities <i>Place of corruption:</i> • At point of transfer between lower-level government and recipient population • Between utility officials and contractors	<i>Intervention category:</i> • Changes rules • Intervention type: • Decentralisation at city/town/village level	Observational / econometric	India South Asia	Drinking water facilities staff, customer households, politicians and contractors in rural and semi-urban areas with poverty slightly below the regional average
Banerjee et al. (2007)	Journal article (peer reviewed) <i>Journal of the European Economic Association</i>	<i>Type of corruption:</i> • Absenteeism <i>Sector of corruption:</i> • Hospital or health workers <i>Place of corruption:</i> • At point of transfer between lower-level government and recipient population	<i>Intervention category:</i> • Monitoring and incentives <i>Intervention type:</i> • Audits/monitoring • Financial incentives	Randomised control trial	India South Asia	Assistant nurse midwives (ANMs) that have completed secondary school and 1.5 years of training and are located in a rural area

Short title (first author)	Document details	Corruption description	Intervention details	Methodology	Location [country and region]	Participants
Banerjee et al. (2009)	Unpublished working paper	<i>Type of corruption:</i> • Soliciting bribes • Stealing public resources • Abuse of political position <i>Sector of corruption:</i> • Politicians (executive or legislative) <i>Place of corruption:</i> • Paper does not detail the types/places of corruption.	<i>Intervention category:</i> • Monitoring and incentives <i>Intervention Type:</i> • Information/education campaign about corruption	Randomised control trial	India South Asia	Agricultural workers with low literacy levels located in a rural area
Björkman & Svensson (2009)	Journal article (peer reviewed) <i>The Quarterly Journal of Economics</i>	<i>Type of corruption:</i> • Absenteeism <i>Sector of corruption:</i> • Hospital or health workers <i>Place of corruption:</i> • At point of transfer between lower-level government and recipient population	<i>Intervention category:</i> • Monitoring and incentives • Changes the rules <i>Intervention type:</i> • Community monitoring • Decentralisation • Information/education campaign	Randomised control trial	Uganda Sub-Saharan Africa	Community representatives from different spectra of society (i.e. young, old, disabled, women, mother, leaders, etc.)
Brollo (2009)	Unpublished working paper	<i>Type of corruption:</i> • Abuse of Political Position <i>Sector of corruption:</i> • Politicians (executive or legislative) - city mayors <i>Place of corruption:</i> • At point of transfer between higher-level government and lower-level government • Between higher-level officials (mayor) and contracted firms government	<i>Intervention category:</i> • Monitoring and incentives <i>Intervention type:</i> • Central government monitoring at the city level	Observational /econometric	Brazil South America	Randomly selected municipalities from throughout Brazil, mayor for each municipality, citizens/voters

Short title (first author)	Document details	Corruption description	Intervention details	Methodology	Location [country and region]	Participants
Chavis (2010)	Journal article (peer reviewed) <i>Journal of Development Economics</i>	<i>Type of corruption:</i> - Stealing public resources - Abuse of political position <i>Sector of corruption:</i> - Infrastructure production or procurement <i>Place of corruption:</i> - When local elites steal from project funds	<i>Intervention category:</i> - Changes the rules <i>Intervention type:</i> - Decentralisation at the village level by districts - Community driven development (CDD)	Quasi-experimental	Indonesia South-East Asia	Districts throughout the country, villages within the districts, the community organisations formed and their leaders, the World Bank
Di Tella (2003)	Journal article (peer reviewed) <i>Journal of Law and Economics</i>	<i>Type of corruption:</i> - Stealing public resources <i>Sector of corruption:</i> - Hospital or health workers <i>Place of corruption:</i> - Between procurement officers and suppliers	<i>Intervention category:</i> - Monitoring and incentives <i>Intervention type:</i> - Capital city level monitoring	Quasi-experimental	Argentina South America	Buenos Aires' 28 hospitals and their procurement officers
Duflo et al. (2010)	Journal article (peer reviewed) <i>Working Paper</i>	<i>Type of corruption:</i> - Absenteeism <i>Sector of corruption:</i> - Schools or teachers <i>Place of corruption:</i> - At point of transfer between lower-level government and recipient population	<i>Intervention category:</i> - Monitoring and incentives <i>Intervention type:</i> - Audits/monitoring - Financial incentives	Randomised control trial	India South Asia	Teachers with an average education of 10th grade, and their students in a rural area of India

Short title (first author)	Document details	Corruption description	Intervention details	Methodology	Location [country and region]	Participants
Ferraz & Finan (2008)	Journal article (peer reviewed) <i>Quarterly Journal of Economics</i>	<i>Type of corruption:</i> - Abuse of political position <i>Sector of corruption:</i> - Politicians (executive or legislative) - city mayors <i>Place of corruption:</i> - At point of transfer between higher-level government and lower-level government - Between higher-level officials (mayors) and contracted firms	<i>Intervention category:</i> - Monitoring and incentives <i>Intervention type:</i> - Central government monitoring at the city level	Randomised control trial	Brazil South America	Randomly chosen municipalities, mayors and voting citizens
Francken (2009)	Journal article (peer reviewed) <i>World Development</i>	<i>Type of corruption:</i> - Stealing public resources <i>Sector of corruption:</i> - Schools or teachers - Government administration (bureaucrats) <i>Place of corruption:</i> - At point of transfer between higher-level government and lower-level government - At point of transfer between lower-level government and recipient population	<i>Intervention category:</i> - Monitoring and incentives <i>Intervention type:</i> - Community monitoring - Information/education campaign	Observational / econometric	Madagascar Sub-Saharan Africa	Government officials in charge of education funds, schools, community members and local media
Olken (2007)	Journal article (peer reviewed) <i>Journal of Political Economy</i>	<i>Type of corruption:</i> - Stealing public resources <i>Sector of corruption:</i> - Infrastructure production or procurement <i>Place of corruption:</i> - At point of transfer between lower-level government and recipient population - Between suppliers and implementation teams	<i>Intervention category:</i> - Monitoring and incentives <i>Intervention type:</i> - Central government monitoring at the village level - Community monitoring	Randomised control trial	Indonesia South-East Asia	Villages, in which 89% of adults could read and write

Short title (first author)	Document details	Corruption description	Intervention details	Methodology	Location [country and region]	Participants
Reinikka & Svensson (2003)	Unpublished working paper <i>Policy Research Working Paper Series</i>	<i>Type of corruption:</i> - Stealing public resources <i>Sector of corruption:</i> - Government administration (bureaucrats) - Politicians (executive or legislative) <i>Place of corruption:</i> - At point of transfer between lower-level government and recipient population	<i>Intervention category:</i> - Monitoring and incentives <i>Intervention type:</i> - Community monitoring - Information/education campaign	Quasi-experimental	Uganda Sub-Saharan Africa	Government official in charge of education funds, schools, community members and local media
Tran (2008)	Unpublished working paper	<i>Type of corruption:</i> - Soliciting bribes <i>Sector of corruption:</i> - Infrastructure production or procurement <i>Place of corruption:</i> - At point of transfer between lower-level government and recipient population (<i>between government and sellers of goods to the government</i>)	<i>Intervention category:</i> - Changes the rules <i>Intervention type:</i> - Requires adoption of public procurement auctions	Observational / econometric	Asia (<i>country unspecified due to IRB contract</i>)	The internal records on contracts received and bribes paid from one firm to government officials

Appendix 3.2: Details of studies excluded based on full report

Citation	Reason for exclusion (detailed)
<i>A2 Excluded on geographic location</i>	
Anechiarico F (2010) Protecting integrity at the local level: the role of anticorruption and public management networks. <i>Crime, Law and Social Change</i> 53(1): 79-95.	Geographical location <i>The paper focuses on the US, UK, Australia and the Netherlands. Mostly focused on how networks work and uses these as examples.</i>
Azfar O, Nelson WR Jr (2007) Transparency, wages, and the separation of powers: an experimental analysis of corruption. <i>Public Choice</i> 130(3/4): 471-493.	Geographical location <i>The “players” of the experimental game that they set up are students at the University of Buffalo, New York, United States.</i>
Chan T (2000) <i>Corruption prevention: the Hong Kong experience</i> . In: Iitsuka H, Findlay-Debeck (eds) Resource Material Series 56: 365-377. See abstract NCJ-191475.	Geographical location
Goel RK, Budak J (2006) Corruption in transition economies: effects of government size, country size and economic reforms. <i>Journal of Economics and Finance</i> , 30(2): 240-250.	Geographical location. <i>The majority of the countries included are not on our list of developed countries and it focuses more the impact of certain factors on corruption rather than an anti-corruption programme/policy as a smaller country size is not usually seen as a possible policy strategy.</i>
Kim S, Kim HJ, Lee H (2009) An institutional analysis of an e-government system for anti-corruption: The case of OPEN. <i>Government Information Quarterly</i> 26(1): 42-50.	Geographical location
Lager JM (2010) <i>Overcoming cultures of compliance to reduce corruption and achieve ethics in government</i> . SSRN eLibrary.	Geographical location <i>Study is based on data from the US.</i>
Ong A, Yap V (2010) <i>The rise of the prosecutorial efforts in foreign corruption: lessons learned from recent FCPA Cases</i> . SSRN eLibrary.	Geographical location <i>Study is from the US.</i>
<i>A4.1 Excluded on article does not evaluate an anti-corruption strategy</i>	
Alatas V, Cameron LA, Chaudhuri A, Erkal N, Gangadharan L (2008) Gender, culture, and corruption: insights from an experimental analysis. <i>Southern Economic Journal</i> , forthcoming.	Does not evaluate an anti-corruption strategy
Alhassan-Alolo N (2007) Gender and corruption: testing the new consensus. <i>Public Administration and Development</i> 27: 227-237.	Does not evaluate an anti-corruption strategy
Banerjee A, Chattopadhyay R, Duflo E, Keniston D (2009) <i>Rajasthan police performance and perception intervention</i> . Working paper.	Does not evaluate an anti-corruption strategy <i>Does not examine a corruption reduction plan. Rather, the study aims to ‘enhance police performance, improve public opinion, and gather objective information about crime rates and performance.’</i>

Banerjee AV, Kumar S, Pande R and Su F (2010) <i>Do informed voters make better choices? Experimental evidence from urban India.</i>	Does not evaluate an anti-corruption strategy
Bjørnskov C (2008) <i>Combating corruption: on the interplay between institutional quality and social trust.</i> SSRN eLibrary.	Does not evaluate an anti-corruption strategy
Camacho L (2006) Teaching ethics to employees of a state public utilities company in a developing country: a case study. <i>Ethics and Economics/Ethique Economique</i> 4(2): 1-12.	Does not evaluate an anti-corruption strategy <i>This is an observational analysis from the teacher's point of view, seeing what may work well in promoting changes in institutions from this type of training.</i>
Deininger K, Mpuga P, (2005) Does greater accountability improve the quality of public service delivery? Evidence from Uganda. <i>World Development</i> 33(1): 171-191.	Does not evaluate an anti-corruption strategy <i>The study uses observational survey data to suggest that there is a negative relationship between knowledge on how to report corruption and bribe-paying, but it does not empirically evaluate an anti-corruption strategy.</i>
Faguet JP, (2004) Does decentralization increase government responsiveness to local needs? Evidence from Bolivia. <i>Journal of Public Economics</i> 88(3-4): 867-893.	Does not evaluate an anti-corruption strategy
Ferraz C, Finan F (2009) <i>Electoral accountability and corruption: evidence from the audits of local governments.</i> NBER Working Papers 14937.	Does not evaluate an anti-corruption strategy
Flessa S (2005) Hospital development plans: a new tool to break ground for strategic thinking in Tanzanian hospitals. <i>The European Journal of Health Economics</i> 6(4): 322-333.	Does not evaluate an anti-corruption strategy
Kaufmann D (2003) <i>Rethinking governance: empirical lessons challenge orthodoxy.</i> SSRN eLibrary.	Does not evaluate an anti-corruption strategy
Ledeneva A (2009) Corruption in postcommunist societies in Europe: a re-examination. <i>Perspectives on European Politics and Society</i> 10(1): 69-86	Does not evaluate an anti-corruption strategy
Olken B (2006) <i>Corruption perceptions vs. corruption reality.</i> NBER Working Papers 12428: 1-40.	Does not evaluate an anti-corruption strategy
Ortega Nieto D (2010) <i>The effects and determinants of local transparency in Mexico: who's accountable?</i> Unpublished Master's thesis, Georgetown University.	Does not evaluate an anti-corruption strategy
Vijayalakshmi V (2008) Rent-seeking and gender in ocal governance. <i>Journal of Development Studies</i> 44: 1262-1288.	Does not evaluate an anti-corruption strategy
Wängnerud L (2010) <i>Variation in corruption between Mexican states: elaborating the gender perspective.</i> SSRN eLibrary.	Does not evaluate an anti-corruption strategy <i>Talks about methodology of research on gender and corruption - no intervention and no outcome.</i>

Witesman EM, Wise CR (2009) The centralization/decentralization paradox in civil service reform: how government structure affects democratic training of civil servants. <i>Public Administration Review</i> 69(1): 116-127.	Does not evaluate an anti-corruption strategy <i>This study tests whether centralisation increases anticorruption training, rather than testing whether centralisation actually reduces corruption.</i>
A4.2 Excluded on Examines corruption in a private sector setting	
Arby MF (1996) Analysis of the new scheme regarding immunity from income tax assessment in Pakistan. <i>Pakistan Journal of Applied Economics</i> 12-13(2-1): 107-126.	Examines private sector or individual level corruption <i>Focuses on individuals (i.e. private sector corruption) and not that of public sector employees.</i>
Asare SK, Davidson RA, Gramling AA (2008) Internal auditors' evaluation of fraud factors in planning an audit: the importance of audit committee quality and management incentives. <i>International Journal of Auditing</i> , 12(3): 181-203.	Examines private sector or individual level corruption
Chen G, Firth M, Gao DN, Rui OM (2005) Is China's Securities Regulatory Agency a toothless tiger? Evidence from enforcement actions. <i>Journal of Accounting and Public Policy</i> 24(6): 451-488.	Examines private sector or individual level corruption
Giné X (2010) <i>Biometric technology in rural credit markets</i> . International Food Policy Research Institute (IFPRI), 2020 Vision Briefs 18(9).	Examines private sector or individual level corruption <i>In addition, this is a predictive proposal, not a real statistical analysis of what has worked in the past.</i>
Ugrin JC, Odom MD (2010) Exploring Sarbanes-Oxley's effect on attitudes, perceptions of norms, and intentions to commit financial statement fraud from a general deterrence perspective. <i>Journal of Accounting and Public Policy</i> 29(5): 439-458.	Examines private sector or individual level corruption
Velamuri SR (2004) <i>Resisting bureaucratic corruption: alacrity housing Chennai</i> (A) (Teaching Case Study). SSRN eLibrary.	Examines private sector or individual level corruption
A4.3 Excluded on On-going anti-corruption study - no results	
Khan Adnan, Khwaja A, Olken B (ongoing) <i>Property tax experiment in Punjab, Pakistan: testing the role of wages, incentives and audit on tax inspectors' behavior</i> .	On-going anti-corruption study (no results) <i>At the beginning stages of the study, there are not yet any results to summarise or analyse.</i>
A4.4 Excluded on Evaluates the impact of corrupt	
Babajanian BV (2008) Local governance in post-Soviet Armenia: leadership, local development and accountability. <i>Communist and Post-Communist Studies</i> 41(3): 375-396.	Evaluated impact of corruption <i>This is a descriptive study about where corruption takes place; it does not evaluate any programme.</i>

Bertrand M, Djankov S, Hanna R, Mullainathan S (2007) Obtaining a driver's license in India: an experimental approach to studying corruption. <i>Quarterly Journal of Economics</i> , 122(4): 1639-1676.	Evaluated impact of corruption <i>This study looks at the channels and consequences of corruption rather than at a strategy to change these behaviours.</i>
Gray-Molina G, Perez de Rada E, Yanez E (1999) <i>Transparency and accountability in Bolivia: does voice matter?</i> Inter-American Development Bank.	Evaluated impact of corruption <i>This study examines impact of corruption in health sector through a survey in 30 different hospitals; does not examine an anti-corruption strategy</i>
Ioniță S (2005) Money for our people? decentralisation and corruption in Romania: the cases of the equalisation, infrastructure and pre-university education funds. <i>Public Administration and Development</i> 25(3): 251-267.	Evaluated impact of corruption <i>This paper discusses identifying corruption - the level and extent in these sectors - rather than preventing it.</i>
Matei L, Matei AI (2009) <i>Corruption in the public organizations -towards a model of cost-benefit analysis for the anticorruption strategies.</i> Unpublished.	Evaluated impact of corruption
Ray I, Williams J (1999) Evaluation of price policy in the presence of water theft. <i>American Journal of Agricultural Economics</i> 81(4): 928-941.	Evaluated impact of corruption
Tambulasi RIC, Kayuni HM (2007) Decentralization opening a new window for corruption: an accountability assessment of Malawi's four years of democratic local governance. <i>Journal of Asian and African Studies</i> 42(2): 163-183.	Evaluated impact of corruption
Testa C (2003) <i>Government corruption and legislative procedures: is one chamber better than two?</i> SSRN eLibrary.	Evaluated impact of corruption <i>Does not really focus on an anti-corruption strategy evaluation but rather observation of behaviours within these systems.</i>
Testa C (2010) Bicameralism and corruption." <i>European Economic Review</i> 54(2): 181-198.	Evaluated impact of corruption <i>Focuses on observations of behaviours within systems, rather than anti-corruption strategies.</i>
A5.1 Exclude on Macro level study	
Altamirano GD, (2007) The impact of the Inter-American Convention against Corruption. <i>The University of Miami Inter-American Law Review</i> 38(3): 487-547.	Macro level study
Boersma M, (2008) <i>Catching the 'big fish'? A critical analysis of the current international and regional anti-corruption treaties.</i> SSRN eLibrary.	Macro level study
Brunetti A Weder B (2003) A free press is bad news for corruption. <i>Journal of Public Economics</i> 87(7-8): 1801-1824.	Macro level study
Chan, HS Gao J. (2008) Old wine in new bottles: a county-level case study of anti-corruption reform in the People's Republic of China. <i>Crime, Law and Social Change</i> 49(2): 97-117.	Macro level study <i>Study does not focus on or evaluate specific anti-corruption strategies.</i>

Charron N, (2009) The impact of socio-political integration and press freedom on corruption. <i>The Journal of Development Studies</i> 45(9): 1472-1493.	Macro level study
Chaudhry A (2005) Corruption and trade liberalization: has the World Bank anti-corruption initiative worked? <i>Lahore Journal of Economics</i> 10(2): 111-140.	Macro level study <i>The study of multiple countries over multiple years focuses on the effects of trade liberalization on corruption and the WB-specific initiatives.</i>
Dahlström CJ, Lapuente V, Teorell J (2009) <i>Bureaucracy, politics and corruption.</i> SSRN eLibrary.	Macro level study
Djankov S, La Porta R, Lopez-de-Silanes F, Shleifer A (2009) <i>Disclosure by politicians.</i> NBER Working Papers 14703.	Macro level study
Faundez, J. and Tan, C (2010) Does the globalization of anti-corruption law help developing countries? NYU Law and Economics Research Paper No. 09-52, eds.Elgar, E.	Macro level study <i>Does not examine one policy or one institution, but a group of them, not specific enough to draw conclusions and include in the synthesis phase.</i>
Freille S, Haque ME, Kneller R (2007) A contribution to the empirics of press freedom and corruption. <i>European Journal of Political Economy</i> 23(4): 838-862.	Macro level study
Friedman A (2010) <i>Can we change corruption from the outside in? An assessment of three anti-corruption international treaties.</i> Unpublished doctoral thesis, The University of Texas at Dallas.	Macro level study
George SM, Billmeier A, Ding S, Konstantin F, Yackovlev I, Zeuner J (2006) <i>Georgia: selected issues.</i> International Monetary Fund.	Macro level study
Gokcekus O, Knorich J (2006) Does quality of openness affect corruption? <i>Economics Letters</i> 91(2): 190-196.	Macro level study
Herzfeld T, Weiss C (2003) Corruption and legal (in) effectiveness: an empirical investigation. <i>European Journal of Political Economy</i> 19(3): 621-632.	Macro level study
Honda J (2008) <i>Do IMF programs improve economic governance?</i> International Monetary Fund WP/08/114.	Macro level study
Lessmann C, Markwardt G (2009) <i>One size fits all? Decentralization, corruption, and the monitoring of bureaucrats.</i> CESifo Working Paper Series 2662.	Macro level study
Lolajih PK (Zambia Transparency International) (2003) <i>Report on government procurement systems.</i> Transparency International, Zambia.	Macro level study
Manandhar N (Nepal Transparency International) (2005) <i>Corruption and anti-corruption.</i> Transparency International, Nepal.	Macro level study <i>It looks at the national level of corruption and package of anti-corruption strategies instead of examining the effectiveness of one particular programme.</i>
Mobolaji HI (2005) The anti-corruption policies in Nigeria, a preliminary assessment. <i>Islamic Quarterly</i> 49(2): 101-122.	Macro level study

OECD (2005) <i>Azerbaijan: fighting corruption in transition economies.</i>	Macro level study
OECD (2005) <i>Georgia: fighting corruption in transition economies.</i>	Macro level study
OECD (2005) <i>Georgia: fighting corruption in transition economies.</i>	Macro level study
Quah JST (2008) Curbing corruption in India: an impossible dream?" <i>Asian Journal of Political Science</i> 16(3): 240-259.	Macro level study <i>This study is more historical examination than an analytical evaluation.</i>
Santiso C (2006) <i>Improving fiscal governance and curbing corruption: how relevant are autonomous audit agencies?</i> SSRN eLibrary.	Macro level study
Shim DC, Eom TH (2009) Anticorruption effects of information communication and technology (ICT) and social capital. <i>International Review of Administrative Sciences</i> 75(1): 99-116.	Macro level study
Siddiquee NA (2010) Combating corruption and managing integrity in Malaysia: a critical overview of recent strategies and initiatives. <i>Public Organization Review</i> 10(2010): 153-171.	Macro level study
Stapenhurst R, Kpundeh SJ (1999) <i>Curbing corruption: toward a model for building national integrity.</i> World Bank.	Macro level study
Tambulasi RIC (2009) All that glitters is not gold: new public management and corruption in Malawi's local governance. <i>Development Southern Africa</i> 26(2): 173-188.	Macro level study <i>Study evaluates new public management (NPM) reforms on corruption. NPM reforms seem too broad and multifaceted to constitute a specific anti-corruption strategy which could be examine in this SR.</i>
Tavares SC (2007) <i>Do freedom of information laws decrease corruption?</i> SSRN eLibrary.	Macro level study
Thornton J, (2010) <i>Does financial development reduce corruption?</i> SSRN eLibrary.	Macro level study
Transparency International Bangladesh (2001). Fact-finding report on Bureau of Anti-Corruption (BAC) Prime Minister's Office.	Macro level study
Tudorel A, Matei AI, Stelian S, Bogdan O. 2009. <i>Some notes about decentralization process implications on ublic administration corruption in Romania.</i> SSRN eLibrary.	Macro level study
Van Rijckeghem C, Weder B. (2001) Bureaucratic corruption and the rate of temptation: do wages in the civil service affect Corruption, and by how much? <i>Journal of Development Economics</i> 65(2): 307-331.	Macro level study
Yang D (2008) Integrity for hire: an analysis of a widespread customs reform. <i>Journal of Law and Economics</i> 51(1): 25-57.	Macro level study

Zahran Z (2008) <i>Accountability, decision-making, and institutions</i> . Unpublished doctoral thesis, Georgetown University.	Macro level study
<i>A5.2 Excluded on Theoretical study</i>	
Adsera A, Boix C, Payne M (2000) <i>Are you being served? Political accountability and quality of government</i> . Inter-American Development Bank.	Theoretical study
Araujo RA, (2009) Are labor contracts efficient to combat fraud? <i>Journal of Financial Crime</i> 16(3): 255-261.	Theoretical study
Azevedo RA, (2008) Assessing the efficiency of the anti-money laundering regulation: an incentive-based approach. <i>Journal of Money Laundering Control</i> 11(1): 67-75.	Theoretical study
Boerner K, Hainz C (2007) <i>The political economy of corruption and the role of financial institutions</i> . William Davidson Institute at the University of Michigan Stephen M. Ross Business School, Working Papers Series wp892.	Theoretical study
Carbonara E, (2000) <i>Corruption and decentralisation</i> . SSRN eLibrary.	Theoretical study
Carr IM, (2009) <i>Corruption, the Southern African Development Community Anti-Corruption Protocol and the principal-agent-client model</i> . SSRN eLibrary.	Theoretical study <i>There is a lack of discussion on the implementation or evaluation of any anti-corruption programmes/initiatives</i>
Chand SK, Moene KO (1999) Controlling fiscal corruption. <i>World Development</i> 27(7): 1129-1140.	Theoretical study
Cule M, Fulton M (2005) <i>Some implications of the unofficial economy -bureaucratic corruption relationship in transition countries</i> . SSRN eLibrary.	Theoretical study
DeMarzo PM, Fishman MJ, Hagerty KM (2005) Self-regulation and government oversight. <i>Review of Economic Studies</i> 72(3): 687-706.	Theoretical study
Di Tella R, Weinschelbaum F (2007) <i>Choosing agents and monitoring consumption: a note on wealth as a corruption-controlling device</i> . SSRN eLibrary.	Theoretical study
Franklin A, (2010) <i>Targeted tariff preferences to reduce corruption in developing states</i> . SSRN eLibrary.	Theoretical study
Garoupa N, Jellal M (2002) <i>Information, corruption and optimal law enforcement</i> . SSRN eLibrary.	Theoretical study
Hainz C, Boerner K (2004) <i>The political economy of corruption and the role of financial institutions</i> . SFB/TR 15 Discussion Papers 135.	Theoretical study

Johnson N, (2001) Committing to civil service reform: the performance of pre-shipment inspection under different institutional regimes. World Bank Policy Research Working Paper Series 2594.	Theoretical study
Kazutomo A, Wilson JS (2008) <i>Governance, corruption, and trade in the Asia Pacific Region</i> . SSRN eLibrary.	Theoretical study
Laffont J-J, N'Guessan T. (1999) Competition and corruption in an agency relationship. <i>Journal of Development Economics</i> 60(2): 271-295.	Theoretical study
Mukherjee S (2004) <i>Essays on the political economy of corruption</i> . New York: Columbia University.	Theoretical study
Myerson R, (2007) <i>Bipolar multicandidate elections with corruption</i> . SSRN eLibrary.	Theoretical study
Samuel A, Lowen A (2010) Bribery and inspection technology. <i>Economics of Governance</i> 11(4): 333-350.	Theoretical study
Treisman D, (2006) Fiscal decentralization, governance, and economic performance: a reconsideration. <i>Economics and Politics</i> , 18(2): 219-235.	Theoretical study
A5.3 Exclude on Anti-corruption strategy with no evaluation	
Asian Development Bank (2010). <i>Anticorruption and Integrity E-Bulletin</i> . Issue 11.	Anti-corruption strategy (no evaluation)
Asian Development Bank (1999) <i>Good governance and anticorruption: The road forward for Indonesia</i> .	Anti-corruption strategy (no evaluation)
Asian Development Bank (2000) <i>Combating corruption in the Asian and Pacific economies</i> .	Anti-corruption strategy (no evaluation)
Asian Development Bank (2002) <i>Taking action against corruption in Asia and the Pacific</i> .	Anti-corruption strategy (no evaluation)
Asian Development Bank (2004) <i>Controlling corruption in Asia and the Pacific</i> .	Anti-corruption strategy (no evaluation)
Asian Development Bank (2005) <i>Curbing corruption in tsunami relief operations</i> .	Anti-corruption strategy (no evaluation)
Asian Development Bank (2006) <i>Anti-corruption policies in Asia and the Pacific: progress in legal and institutional reform in 25 countries</i> .	Anti-corruption strategy (no evaluation) <i>The study reports general trends of how they have changed policies to better fit their country specific situation. However, there is no true impact analysis on either the regional or country level.</i>
Asian Development Bank/OECD (2008) <i>Managing conflict of interest: frameworks, tools, and instruments for preventing, detecting, and managing conflict of interest</i> .	Anti-corruption strategy (no evaluation) <i>Explains how they are managing conflict of interest in a few of the case studies, but does not provide a true case study that involves complete analysis.</i>
Bean BW, (2010) <i>Hyperbole, hypocrisy, and hubris in the aid-corruption dialogue</i> . SSRN eLibrary.	Anti-corruption strategy (no evaluation)

Bhargava V, Bolongaita E (2004) Challenging corruption in Asia: case studies and a framework for action. World Bank.	Anti-corruption strategy (no evaluation)
Blechinger V (2002). <i>Corruption and political parties: sectoral perspectives on corruption</i> . USAID, MSI.	Anti-corruption strategy (no evaluation)
Botezatu E (2006) <i>Regional cooperation in central and southeastern Europe: the Romanian experience in fighting corruption</i> . SSRN eLibrary.	Anti-corruption strategy (no evaluation)
Bryane M, (2004) <i>Anti-corruption training programs in central and eastern Europe</i> .	Anti-corruption strategy (no evaluation) <i>It provides information on what each of these countries is doing with regard to anti-corruption training programmes, but it does not evaluate them to see if they are proven effective.</i>
Bryane M (2005) <i>Anti-corruption training programmes in central and eastern Europe</i> . Octopus Programme, Council of Europe.	Anti-corruption strategy (no evaluation) <i>It provides information on what each of these countries is doing with regard to anti-corruption training programmes, but it does not evaluate them to see if they are proven effective.</i>
Bryane M, Kennon E, Hansen J (2006) <i>The future of anti-corruption measures in Lithuania</i> . SSRN eLibrary.	Anti-corruption strategy (no evaluation)
Chapman D (2002) <i>Corruption and the education sector: sectoral perspectives on corruption</i> . USAID, MSI.	Anti-corruption strategy (no evaluation)
European Bank for Reconstruction and Development (2006) <i>Anti-corruption report</i> .	Anti-corruption strategy (no evaluation) <i>The study discusses strategies and processes within the bank but does not evaluate any of their strategies.</i>
European Bank for Reconstruction and Development (2007) <i>Anti-corruption report</i> .	Anti-corruption strategy (no evaluation) <i>They mostly talk about strategy and processes within the bank. They give a few updates on the whistle-blowing protection but there is no evaluation of any of their strategies.</i>
European Bank for Reconstruction and Development (2008) <i>Anti-corruption report</i> .	Anti-corruption strategy (no evaluation) <i>They mostly talk about strategy and processes within the bank. They give a few updates on the whistle-blowing protection but there is no evaluation of any of their strategies.</i>
Gilman SC, Stout J (2005) Assessment strategies and practices for integrity and anti-corruption measures: a comparative overview. <i>Public sector integrity: a framework for assessment</i> . OECD, pp. 75-122.	Anti-corruption strategy (no evaluation) <i>This study does not examine an anti-corruption strategy but rather the methods used to evaluate Integrity anti-corruption measures.</i>
Hernández GR, (2009) <i>International public procurement: a guide to best practice</i> . Globe Law and Business.	Anti-corruption strategy (no evaluation) <i>It is a compilation of best practices so it offers a lot of information that would be helpful with respect to implementation of such procedures but there is no evaluation of procurement processes. Only evaluation chapter is on the accessibility of public e-procurement services - accessibility not success of the programme.</i>

Huang S-M, Yen DC, Yang L-W, Hua J-S (2008) An investigation of Zipf's law for fraud detection. <i>Decision Support Systems</i> 46(1): 70-83.	Anti-corruption strategy (no evaluation) <i>Focuses on increasing the probability of detecting fraud, but not whether that will lower corruption. We don't know whether this is an effective deterrent based on the study. Additionally, it does not focus on developing countries or public sector - general in these terms.</i>
Huther J, Shah A (World Bank Staff) (2000) <i>Anti-corruption policies and programs: a framework for evaluation</i> . World Bank, Operations Evaluation Department, Country Evaluation and Regional Relations Division.	Anti-corruption strategy (no evaluation) <i>This study offers methodologies on how to evaluate these types of programmes and policies, but does not actually do any evaluations.</i>
Inman K, Andrews JT (2009) Corruption and political participation in Africa: evidence from survey and experimental research, Paper presented at Midwest Political Science Association meeting, 3-6 April 2008, Chicago, Illinois.	Anti-corruption strategy (no evaluation)
Johnston MKpundeh SJ (2005) <i>Building a clean machine: anti-corruption coalitions and sustainable reform</i> . World Bank Policy Research Working Paper Series 3466.	Anti-corruption strategy (no evaluation) <i>Provides information on why and how 'coalition-building', social action coalitions and linking public and private actors can reduce corruption; it does not evaluate said models</i>
Klemencic G, Stusek J (2008) <i>Specialized anti-corruption institutions: review of models</i> . OECD.	Anti-corruption strategy (no evaluation) <i>The book is focused on giving the reader a brief look at the different anti-corruption strategies, countrywide models, and country examples where possible including challenges and successes they had - lessons learned, but actual evaluations are not included.</i>
Lengwiler Y, Wolfstetter E (2006) <i>Corruption in procurement auctions</i> . Sonderforschungsbereich/Transregio 15 Discussion Papers 90.	Anti-corruption strategy (no evaluation) <i>Discusses the major types of corruption in procurement, uses Monte Carlo analysis to find pricing distortion and sketches means to restrain each type in a clear manner. However, there is no evaluation of these suggested measures.</i>
Matei AI, Ani I., Matei L. (2010) <i>Anti-corruption strategies in some south-eastern European states - an empirical study on the impact of the government performance</i> . SSRN eLibrary.	Anti-corruption strategy (no evaluation)
Marquette H (2003) <i>Corruption, politics and development: the role of the World Bank</i> . Palgrave Macmillan.	Anti-corruption strategy (no evaluation)
McCawley, T. (2004) Corruption crusade. <i>Far Eastern Economic Review</i> 167(29): 22-23.	Anti-corruption strategy (no evaluation)
McKoy DV, (2005) <i>A proposal for a public sector ethics infrastructure</i> . SSRN eLibrary.	Anti-corruption strategy (no evaluation)

Sapovadia VK, Kandarp P (2007) <i>Understanding the system and process as an instrument to curb corruption: transformation experiences from India</i> . SSRN eLibrary.	Anti-corruption strategy (no evaluation)
Steinberg F (2000) Helping countries combat corruption - progress at the World Bank since 1997. The World Bank.	Anti-corruption strategy (no evaluation)
Tucker P (2006) Fighting corruption in developing nations. <i>Futurist</i> 40(1): 7.	Anti-corruption strategy (no evaluation) <i>This is a brief (one-page) article on the world trends and forecasts for fighting corruption in developing nations.</i>
Veron R, Williams G, Corbridge S, Srivastava M (2006) Decentralized corruption or corrupt decentralization? Community monitoring of poverty-alleviation schemes in eastern India. <i>World Development</i> 34(11): 1922-1941.	Anti-corruption strategy (no evaluation)
Wescott CG, (2009) World Bank support for public financial management and procurement: from theory to practice. <i>Governance: An International Journal of Policy</i> 22(1): 139-153.	Anti-corruption strategy (no evaluation)
Wiehen M., Malik R, Ajhsan A (2008) The role of civil society in curbing corruption in public procurement. <i>Fighting Bribery in Public Procurement in Asia and the Pacific</i> . Asian Development Bank/OECD, pp. 195-214.	Anti-corruption strategy (no evaluation) <i>All of the sub-articles in this large report are already included in the search. Each one has been excluded or included based on the individual article/chapter of the report.</i>
A5.4 Excluded on Not being an empirical study	
Asian Development Bank (2005) <i>Vietnam: government assessment with focus on PAR and anti-corruption strategy and program assessment</i> .	Not an empirical study
Fjeldstad O-H, (2003) <i>Decentralisation and corruption: a review of the literature</i> . U4 Anti-Corruption Resource Centre.	Not an empirical study <i>A systematic review focused on identifying holes in the literature. Since we have done a comprehensive review ourselves, those papers which are relevant and well done will be included in our own study.</i>
Grossman HI, Fan CS (2000) Incentives and corruption in Chinese economic reform." <i>Policy Reform</i> 4: 195-206.	Not an empirical study
Nogara M (2009) <i>Role of media in curbing corruption: the case of Uganda under President Yoweri K. Museveni during the 'No-Party' system</i> . SSRN eLibrary.	Not an empirical study <i>This study is a discussion of policies to curb corruption over the period 1986-2006 with some perspective or ideas on why or how something occurred, but it is not strictly an analytical paper.</i>
Shah A, (2006) <i>Corruption and decentralized public governance</i> . World Bank Policy Research Working Paper Series 3824.	Not an empirical study <i>This paper is more of a review of other corruption studies.</i>

Smilov D, (2010) Anticorruption agencies: expressive, constructivist and strategic uses. <i>Crime and Social Change</i> 53(1): 67-77.	Not an empirical study <i>This is a discussion paper on the use of anti-corruption agencies for other than their intended purpose and the fact that their weakness in structure allows this to occur easily.</i>
Spector BI, Johnston M, Winbourne A (2009) <i>Anticorruption assessment handbook: final report</i> . USAID, MSI.	Not an empirical study <i>This is really the "needs assessment" handbook. There is no assessment similar to an evaluation of any sort.</i>
A7 Excluded on Qualitative study	
Abdul Latif Jameel Poverty Action Lab. (2008) <i>Controlling corruption: auditing versus community participation</i> . JPAL Policy Briefcase No 5.	Qualitative study <i>This is a policy brief based on full papers by Benjamin Olken. The full papers are included, but not this abbreviated version.</i>
Anon. (1999) Frontier publications in jeopardy. <i>Economic Review</i> 30(4): 41.	Qualitative study
Asian Development Bank/OECD (2006) <i>Knowledge Commitment Action Against Corruption In Asia and the Pacific</i> .	Qualitative study
Asian Development Bank (2009) <i>Report to the President Integrity Division 2008 Annual Report</i> .	Qualitative study
Beblavý M (2009) Conditions for effective large-scale anticorruption efforts and the role of external actors: what does the Slovak experience tell us?" <i>Public Administration and Development</i> 29(3): 180-192.	Qualitative study
Bertot JC, Jaeger PT, Grimes JM (2010) Using ICTs to create a culture of transparency: e-government and social media as openness and anti-corruption tools for societies. <i>Government Information Quarterly</i> 27(3): 264-271.	Qualitative study
Boehm F, Olaya J (2006) <i>Corruption in public contracting auctions: the role of transparency in bidding processes</i> . SSRN eLibrary.	Qualitative study
Bryane M, (2009) <i>Issues in anti-corruption law: can an activist regulatory stance overcome legislative problems in preventive anti-corruption agencies like Montenegro's?</i> SSRN eLibrary.	Qualitative study
Business Monitoring International (2004) Kyrgyzstan. <i>Emerging Europe Monitor: Eurasia</i> 8(9): 2-2.	Qualitative study
Carr IM (2006) <i>Fighting corruption through regional and international conventions: a satisfactory solution?</i> SSRN eLibrary.	Qualitative study
Chandler D (2002) Anti-corruption strategies and democratization in Bosnia-Herzegovina. <i>Democratization</i> 9(2): 101-120.	Qualitative study

Chandler D (2006) Building trust in public institutions? Good governance and anti-corruption in Bosnia-Herzegovina." <i>Ethnopolitics</i> 5(1): 85-99.	Qualitative study
Chawla R (2004) <i>Online delivery of land titles in Karnataka, India</i> . Case study.	Qualitative study
Davis J (2003) Corruption in public service delivery: experience from South Asia's water and sanitation sector. <i>World Development</i> 32 (1): 53-71	Qualitative study
Davidson JS (2007) Politics-as-usual on trial: regional anti-corruption campaigns in Indonesia. <i>The Pacific Review</i> 20(1): 75-99.	Qualitative study
De Speville B (2010) Anticorruption commissions: the 'Hong Kong model' revisited. <i>Asia-Pacific Review</i> 17(1): 47-71.	Qualitative study
Dervieux V (2005) Main findings on the forum workshop on 'Compliance with Anti-corruption Laws through Access to Public Procurement: Sanctioning or Voluntary Self-Regulation.' In: <i>Fighting corruption and promoting integrity in public procurement</i> . OECD, pp. 207-11.	Qualitative study
Doig A, Watt D, Williams R (2007) Why do developing country anti-corruption commissions fail to deal with corruption? Understanding the three dilemmas of organisational development, performance expectation, and donor and government cycles. <i>Public Administration and Development</i> 27(3): 251-259.	Qualitative study
European Bank for Reconstruction and Development (2010) <i>Law in transition online: strengthening public procurement</i> .	Qualitative study
Falvey R, La Chimia A, Morrissey O, Zgovu E (2005) <i>Competition policy and public procurement in developing countries</i> . University of Nottingham Discussion Papers 08(07).	Qualitative study
Fink R (2002) <i>Corruption and the agricultural sector: sectoral perspectives on corruption</i> . USAID, MSI.	Qualitative study
Gathii JT (1999) <i>Corruption and donor reforms: expanding the promises and possibilities of the rule of law as an anti-corruption atrategy in Kenya</i> . SSRN eLibrary.	Qualitative study
Global Integrity Organization (2006) <i>Global Integrity 2006 country reports</i> . Global Integrity.	Qualitative study
Gootnick D (2004) <i>Foreign assistance: U.S. anticorruption programs in Sub-Saharan Africa will require time and commitment</i> . US Government Accountability Office Reports GAO-04-506.	Qualitative study
Guerzovich MF (2010) <i>Anticorruption peer review mechanisms: what pays-off at the national level</i> . SSRN eLibrary.	Qualitative study

Hall M (2009) <i>The corruption enigma: understanding success and failure of corruption reform programs in highly corrupt countries</i> . Unpublished doctoral thesis, Old Dominion University.	Qualitative study
Henning PJ (2001) <i>Public corruption: a comparative analysis of international corruption conventions and United States law</i> . SSRN eLibrary.	Qualitative study
Humpage SD (2010) <i>Benefits and costs of electronic medical records: the experience of Mexico's Social Security Institute</i> . Inter-American Development Bank.	Qualitative study
Khemani M (2009) <i>The role of anti-corruption commissions in changing cultural attitudes towards corruption and the rule of law</i> . SSRN eLibrary.	Qualitative study
Kohl B (2003) Democratizing decentralization in Bolivia -the law of popular participation. <i>Journal of Planning, Education and Research</i> 23(2): 153-164.	Qualitative study
Knox C (2009) Dealing with sectoral corruption in Bangladesh: developing citizen involvement. <i>Public Administration and Development</i> 29: 117-132.	Qualitative study
Larmour P, Manuhua B (2006) National integrity systems in small Pacific island states. <i>Public Administration and Development</i> 26(2): 173-184.	Qualitative study
Lizal L, Kocenda E (2000) <i>Corruption and anticorruption in the Czech Republic</i> . William Davidson Institute Working Paper Number 345.	Qualitative study
Lubuwa J (not dated) <i>The experience of Ilala Municipality in developing and implementing internal and external diagnostics to curb corruption</i> . http://info.worldbank.org/etools/docs/library/94857/gapglobal/pdf/ilala_background.pdf	Qualitative study
Maas P (1997) Checking it twice. <i>Business Latin America</i> 32(48): 4.	Qualitative study
Mahalingam A (2006) Unintended consequences of vigilance activities in two project settings in India.” <i>Asian Journal of Political Science</i> 14(2): 163-188.	Qualitative study
Mahmood SAI (2008) Bangladesh: a policy analysis of their success or failure. <i>PA Times</i> 31: 6-7.	Qualitative study
Matei A, Popa F (2009) <i>Impact of decentralization on the corruption phenomenon</i> . MPRA Paper 18958. Germany: University Library of Munich.	Qualitative study
Matei AI, Popa F (2009) State in transition and corruption -a comparative analysis. MPRA Paper 19625. Germany: University Library of Munich.	Qualitative study
McKoy DV, (2007) <i>Parliamentary oversight of executive procurement: lessons from the contractors-general of Jamaica and Belize</i> . SSRN eLibrary.	Qualitative study

Meagher P, Upadhyaya K, Wilkinson B (2000) <i>Combating rural public works corruption: food-for-work programs in Nepal</i> . SSRN eLibrary.	Qualitative study
Müller MM (2010) Community policing in Latin America: lessons from Mexico City. <i>European Review of Latin American and Caribbean Studies</i> 88: 21-37.	Qualitative study
Mungiu-Pippidi A (2006) Corruption: diagnosis and treatment. <i>Journal of Democracy</i> 17(3): 86-99.	Qualitative study
Neild R (2007) <i>USAID program brief: anticorruption and police Integrity</i> . USAID, Associates in Rural Development, Inc.	Qualitative study
Oyamada E (2005) President Gloria Macapagal-Arroyo's anti-corruption strategy in the Philippines an evaluation. <i>Asian Journal of Political Science</i> 13(1): 81-107.	Qualitative study
Parthaprati C (2004) The effectiveness of the World Bank's anti-corruption efforts: current legal structural obstacles and uncertainties. <i>Denver Journal of International Law and Policy (U.S.)</i> 32(2): 315-353.	Qualitative study
Pease P (2008) What makes a good procurement oversight body? - lessons from recent experience. <i>Fighting Bribery in Public Procurement in Asia and the Pacific</i> . Asian Development Bank/OECD, pp. 95-109.	Qualitative study
Pieth M, Low LA, Cullen, PJ (2007) <i>The OECD Convention on Bribery: a commentary</i> . Cambridge: Cambridge University Press.	Qualitative study
Quah JST (2001) Globalization and corruption control in Asian countries: the case for divergence. <i>Public Management Review</i> 3(4): 453-470.	Qualitative study
Ragaru N (2010) How do anti-corruption initiatives fly and where to? - a Bulgarian case study. <i>Sudosteuropa Mitteilungen</i> 50(3): 40-63.	Qualitative study
Reyes VC, (2009) Systemic corruption and the programme on basic education in the Philippine Department of Education. <i>Journal of Developing Societies</i> , 25(4): 481-510.	Qualitative study
Robinson M (1998) <i>Corruption and development</i> . New York: Frank Cass Publishers.	Qualitative study <i>Michael Johnston's paper, 'Fighting Systemic Corruption', was the most relevant one, and it does not provide a data-based evaluation.</i>
Santiso C (2007) <i>Eyes wide shut? The politics of autonomous audit agencies in emerging economies</i> . SSRN eLibrary.	Qualitative study
Savedoff WD (2007) <i>Transparency and corruption in the health sector: a conceptual framework for ideas for action in Latin America and the Caribbean</i> . Inter-American Development Bank.	Qualitative study

Savedoff W (2008) <i>Pay for honesty? Lessons on wages and corruption from public hospitals</i> . U4 Anti-Corruption Resource Centre http://www.cmi.no/publications/file/3032-pay-for-honesty-lessons-on-wages-and-corruption.pdf	Qualitative study
Schapper P, Alilovic M, Ramachandran V (2008) The potential of new technologies to prevent bribery in procurement: e-announcements, e-bidding and e-procurement. Chapter 3 in: <i>Fighting Bribery in Public Procurement in Asia and the Pacific</i> . Asian Development Bank/OECD, pp. 111-128.	Qualitative study
Schiavo-Campo S, (1999) <i>Governance, corruption and public financial management</i> . Asian Development Bank.	Qualitative study
Sherlock S (2002) Combating corruption in Indonesia? The Ombudsman and the Assets Auditing Commission. <i>Bulletin of Indonesian Economic Studies</i> 38(3): 367-83.	Qualitative study
Siddiquee NA (2005) Public accountability in Malaysia: challenges and critical concerns. <i>International Journal of Public Administration</i> 28(1-2): 107-129.	Qualitative study
Singh A, (2006) <i>Corruption and economic development: right to information as a remedy</i> . SSRN eLibrary.	Qualitative study
Slate R (2003) Chinese role models and classical military philosophy in dealing with soldier corruption and moral degeneration. <i>Journal of Third World Studies</i> , 20: 193-224.	Qualitative study
Snell P (2006) E-buying assists Third World. <i>Supply Management</i> 11(21): 12-12.	Qualitative study
Snider TR, Kidane W (2007) <i>Combating corruption through international law in Africa: a comparative analysis</i> . SSRN eLibrary.	Qualitative study
Sundet G, (2008) <i>Following the money: Do Public Expenditure Tracking Surveys Matter?</i> U4 Anti-Corruption Resource Centre.	Qualitative study
Theobald R. (1997) Can debt be used to combat political corruption in Africa? <i>Crime, Law and Social Change</i> 27(3-4): 299-314.	Qualitative study
Transparency International (2010) <i>Alternative to silence: whistleblower protection in 10 European countries</i> .	Qualitative study
United Nations Development Programme (2004) <i>Anti-corruption [electronic resource]: final version: practice note</i> . UNDP.	Qualitative study
United Nations: Office on Drugs and Crime (2010) <i>Thematic Programme: Action Against Corruption and Economic Crime</i> .	Qualitative study

Vasudevan R (2007) Changed governance or computerized governance? Computerized property transfer processes in Tamil Nadu, India. <i>Information Technologies and International Development</i> 4(1): 101-112.	Qualitative study
Vian T (2009) <i>Benefits and drawbacks of per diems: do allowances distort good governance in the health sector?</i> U4 Anti-Corruption Resource Centre http://www.cmi.no/publications/file/3523-benefits-and-drawbacks-of-per-diems.pdf	Qualitative study
Vijayakumar J, Rasheed AA, Krishnan VS (2005) Corruption and taxation: lessons from the Indian experience. <i>Journal of Public Budgeting, Accounting and Financial Management</i> 17(3): 398-419.	Qualitative study
Wiehen M., Malik R, Ajhsan A (2008) The role of civil society in curbing corruption in public procurement. Chapter 6 in: <i>Fighting Bribery in Public Procurement in Asia and the Pacific</i> . Asian Development Bank/OECD, pp.195-214.	Qualitative study
Zuleta JC (2008) Combating corruption in the revenue service: the case of VAT refunds in Bolivia. U4 Anti-Corruption Resource Centre.	Qualitative study
<i>A8 Excluded on study not available</i>	
Alhassan-Alolo N (2006) <i>The gender-corruption nexus: an examination of the gender dimensions of corruption in Ghana's public sector</i> . Unpublished doctoral thesis, University of Birmingham, UK.	Study not available <i>The full thesis is not available, but was published later and this published version is included in our discussion section.</i>
World Bank (1999) <i>The anti-corruption handbook</i> . World Bank East Asia.	Study not available <i>Could not access any information from Google Books, Harvard's Library or the World Bank website which did not even have it listed as a publication.</i>

Appendix 4.1: Further study details (by intervention category and type)

Author(s)	Paper title	Key corruption issue	Secondary intervention (if applicable)	Sector	Successful	Extent of success
Monitoring and incentives						
<i>Institutional monitoring and non-financial incentives</i>						
Anson et al. (2006)	Tariff evasion and customs corruption: does pre-shipment inspection help?	Bribe-taking, capture of tariffs		Bureaucrats <i>customs officials</i>	NO	With the introduction of pre-shipment inspections (PSIs), fraud increased in Argentina and Indonesia, but decreased in the Philippines although not significantly
Brollo (2009)	Who is punishing corrupt politicians - voters or the central government? Evidence from the Brazilian Anti-Corruption Program	Stealing of public resources		Politicians (executive or legislative) <i>city mayors</i>	YES	Corrupt mayors, as identified by the audit, lost elections immediately after audits, but this effect reduced as time went on. After 15 months, when citizens felt the effect of reduced federal funds - due to evidence of corruption - mayors were 'punished' again by citizens who voted them out of office
Ferraz & Finan (2008)	Exposing corrupt politicians: The effects of Brazil's publicly released audits on electoral outcomes	Stealing of public resources		Politicians (executive or legislative) <i>city mayors</i>	YES	Publicised municipal audits reduced re-election among incumbent mayors found to be more corrupt than initially believed. Cities with local media were even less likely to vote for these corrupt mayors
Olken (2007)	Monitoring corruption: evidence from a field experiment in Indonesia	Stealing of public resources	Community monitoring to report known misuse of money or other	Infrastructure production or procurement	YES	Missing expenditures for materials and labour to build roads was 8% lower among audited communities.

			forms of corruption			
Di Tella & Schargrodsky (2003)	The role of wages and auditing during a crackdown on corruption in the city of Buenos Aires	Stealing of public resources		Hospital or health workers <i>procurement officials</i>	YES	Directly after implementation of the monitoring programme the hospitals' medical supply prices decreased by 15%. Nine months after initiation, success declined, but the prices were still 10% below before-programme prices.
Community monitoring and non-financial incentives						
Banerjee et al. (2009)	Can voters be primed to choose better legislators? Evidence from two field experiments in rural India	Bribe taking, service delivery quality, stealing of public resources		Politicians	MIXED	The caste campaign increased voter turnout and reduced the propensity to vote along caste lines in the lower income caste group. This is entirely due to voters moving away from candidates charged with heinous crimes (the worst) The corruption campaign did not affect voter turnout, voter registration or voting decisions
Björkman & Svensson (2009)	Power to the people: evidence from a randomised field experiment on community-based monitoring in Uganda	Absenteeism	Decentralisation	Hospital and health workers	YES	The programme appears to have reduced absenteeism by 10%; equivalent to consistently having almost one additional worker than the control group
Francken (2009)	Media, monitoring, and capture of public funds: evidence from Madagascar	Stealing of public resources		Schools or teachers; bureaucrats	YES	While the capture of in-kind and education funds remained high, media access decreased the likelihood of capture. Being closer to the capital, a proxy for being audited more often by

						a central agency, also decreased capture.
Olken (2007)	Monitoring corruption: evidence from a field experiment in Indonesia	Stealing of public resources	Audits by government office		MIXED	For community monitoring the study identifies small, statistically insignificant effects on reductions in road expenditures above actual estimated costs. The government audits, however, were more successful.
Reinikka & Svensson (2003)	The power of information: evidence from a newspaper campaign to reduce capture	Stealing of public resources			YES	In areas where information and community monitoring - newspapers and radio - were present there was a reduction in stolen education funds.
Monitoring and financial incentives						
Banerjee et al. (2007)	Putting band aid on a corpse: incentives for nurses in the Indian public health care system	Absenteeism <i>among nurses at rural clinics</i>	NGO chosen by government to monitor nurses in rural clinics. Incentives given by local government: nurses receive large part of wage as bonus for attendance	Hospital and health workers;	MIXED	Although the programme was successful shortly after the initial implementation, nurse supervisors did not adhere to the incentives scheme and gave nurses excused absences. The NGO could not supersede their authority.
Duflo et al. (2010)	Incentives matter: getting teachers to come to school	Absenteeism <i>among teachers in rural schools</i>	Monitor at the beginning and end of each day to determine if teachers have attended school	Schools or teachers;	YES	Absenteeism was reduced significantly and students' test scores increased with teacher attendance monitoring.

Changing the rules of the system						
<i>Decentralisation</i>						
Asthana (2008)	Decentralisation and corruption: evidence from drinking water sector	Bribe-taking and service-delivery quality		Public utilities (water)	NO	Decentralised water facilities had a greater level of corruption than centralised state run facilities on all corruption measurements used. While bribes are more common in locally run facilities, customers of centralised utility companies pay significantly more per bribe, on average.
Björkman & Svensson (2009)	Power to the people: evidence from a randomised field experiment on community-based monitoring in Uganda	Absenteeism	Community monitoring	Hospital and health workers	YES	The programme appears to have reduced absenteeism by 10%; equivalent to consistently having almost one additional worker than the control group
Chavis (2010)	Decentralising development: allocating public goods via competition	Stealing of public resources		Infrastructure production or procurement	YES	More villages bidding for a district project leads to a decline in corruption (i.e. road construction costs and microcredit projects proposed)
<i>Procurement procedures</i>						
Tran (2008)	Can procurement auctions reduce corruption? Evidence from the internal records of a bribe paying firm	Bribe-taking		Infrastructure production or procurement	YES	‘Best-value’ auctions did not decrease bribes and actually increased bribes when officials could solicit vendors. ‘Best-price’ auctions decreased bribes

Appendix 4.2: Causal mechanisms

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
Monitoring and incentives						
<i>Institutional monitoring and non-financial incentives</i>						
Anson et al. (2006)	-Bureaucrats (customs officials) soliciting bribes. -Corruption occurs at points of transfer between (1) lower-level government and recipient populations and (2) customs officials and businesses.	<i>Research goal</i> Determine if the introduction of private company monitors can reduce corruption among customs officials. <i>Programme</i> Monitoring: Introduction of pre-shipment inspections (PSIs) by private companies in three different countries. Incentives: PSI companies are motivated to report fraud to help reduce firm costs. Customs officials know that PSI companies have true knowledge of tariff and will report bribery attempts.	(1) The use of PSIs will decrease the request for and payment of bribes because PSI companies will know what the true tariff is and will pay only that. They are incentivised by their wages and position. (2) If PSI companies discover that shipments are undervalued to reduce tariff payments, they may choose to pay a larger bribe and overcharge the company, since PSI companies are paid a percentage of the shipment.	<i>Analysis</i> Observational/ econometric (1) Fraud <i>increased</i> in Argentina and Indonesia and <i>decreased</i> - not significantly - in the Philippines with the introduction of PSIs. (2) Over-invoicing occurred in all three countries. This supports evidence that PSI companies over-correct under-invoicing in order to maximise their profits.	-The central government allowed PSIs as a temporary or permanent measure to help curb customs corruption. -The three countries have different geographical, political, and economic situations as the backdrop of these interventions. These differences are not completely examined, but could further indicate the cause of the findings.	-It remains unclear when and why PSIs are successful. However, based on the competing hypotheses, it stands to reason that when monitoring incentives are not properly aligned between all parties, e.g. the shipping firm and PSI companies, there is a greater chance of an ineffective programme. -PSI companies may charge too much for their services and therefore create greater costs to a firm with no actual decrease in customs corruption. -There may be a lower level of information gain than hoped for by the government. It may be advantageous to consider realigning incentives among customs officials.
Brollo (2009)	-Politicians (city mayors) abusing their political positions. -Corruption occurs at the point of transfer (1) between higher-level government and	<i>Research goal</i> Determine if federal audit effects decrease over time and if the reduction of federal transfers to city governments plays a role in reducing re-election rates of corrupt incumbent mayors.	(1) Auditing municipalities and distributing the findings will give voters more information, allowing them to make more informed decisions and reduce the vote-share for corrupt mayors. (2) Two competing theories on the effects of audit	<i>Analysis</i> Quasi-experimental (1) The release of audit findings prior to an election correlates with a reduction in the re-election of incumbent parties and politicians. Presumably, people are choosing not to vote for	-A nationwide random audit of city level officials. -It took place in Brazil, a fast-growing relatively 'wealthier' lower-middle income country.	-Voters can reduce the probability of re-electing corrupt officials when these voters receive reliable information on corruption levels of local officials. -Reducing federal transfers to corrupt mayors gives them less money to spend within their districts and makes districts

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
	lower-level government and (2) higher-level officials (mayor) and contracted firms.	<i>Programme Monitoring:</i> The government audited municipalities using a monthly lottery open to the public. The state audit team gathered information on (1) all federal funds transferred to the municipal government and (2) service orders generated. <i>Incentives:</i> Audit findings were disseminated through local media. Where citizens could practise electoral accountability. Corruption violations reduced the amount of federal transfers to corrupt mayors in subsequent years.	timing: (A) Municipalities with audits unveiled farther from elections should see a greater negative impact of the audits, because residents have more time to 'feel' the punishment of a reduction in funds from the central government, and are thus more likely to vote against a corrupt mayor. (B) Municipalities with audits unveiled closer to elections should see a greater negative impact on an incumbent's probability of re-election, if the only true source of punishment is audit report dissemination.	corrupt mayors. (2) Both the release of audit findings directly prior to elections and 15 months prior to elections are correlated with a significant reduction in the re-election of incumbent parties and politicians. The release of audit findings in the intervening periods is not significant. -The author concludes that this is due to voters feeling the effects of the reduction in federal transfers to cities with corrupt mayors.		'feel' the impact of corruption. This may further reduce voting for corrupt politicians. -This government monitoring scheme was partially dependent upon information changing voter behaviour. The populace in this case are Brazilians who appear to be willing and able to use information to practise electoral accountability.
Di Tella (2003)	-Hospital and/or healthcare workers stealing public resources -Corruption occurs at point of transfer between procurement officers and suppliers.	<i>Research goal</i> Determine if monitoring the prices of medical inputs would decrease related procurement corruption among public hospitals in Buenos Aires, Argentina. <i>Programme Monitoring:</i> Public hospitals reported information on price, quantity, brand, supplier and month of purchase for homogenous products. A list of the hospitals and what they paid - highlighting the lowest	(1)The information dissemination will cause procurement officers to reduce prices to what are published as 'normal' prices so they are not suspected of fraud. (2)The monitoring and auditing process will be effective initially, but as the process continues officers will perceive the reduction of monitoring and increase their poor/corrupt behaviour, but be more careful, not increasing the price by too much.	<i>Analysis</i> Quasi-experimental (1) There was an initial reduction in prices suggesting that officers tried to 'normalise' their prices so as not to come under suspicion of corruption. (2) The drop in price decreased over time suggesting that workers reacted to a reduction in monitoring and started to move towards previous habits. However, even 15 months after the intervention prices	-This programme was conducted at the city level - all public hospitals in Buenos Aires, the capital of Argentina.	-Government monitoring and information dissemination can cause agents to alter their corrupt behaviour and come into line with the norms. -If monitoring is not regularly continued, agents may return slowly and cautiously to their previous behaviours. -Prior to the study, high levels of corruption in this sector of Argentina were reported. This could account in part for the substantial success of this programme in reducing corruption.

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
		and highest prices - was then circulated. Incentives: Threat of losing job, widespread knowledge of corrupt behaviour among procurement officers - social sanctions.		remained significantly lower than before pre-monitoring.		
Ferraz & Finan (2008)	-Politicians (city mayors) abusing their political power. -Corruption occurs at the point of transfer between (1) higher-level government and lower-level government and (2) higher-level officials (mayors) and contracted firms.	<i>Research goal</i> Determine if individuals will practise electoral accountability once exposed to publicly released audit reports on local mayors. <i>Programme Monitoring:</i> A government audit team gathered information on federal funds transferred to municipal governments and associated service orders. The findings were then disseminated via media (i.e. radio, newspaper and internet sources). <i>Incentives:</i> The campaign was intended to inform voters of corrupt mayors and punish them at upcoming elections. Corrupt mayors would also be punished socially.	(1) Random audits will increase the fear of corrupt mayors and other municipal political officials and entice them to reduce or discontinue this behaviour. (2) The random audits will be widely published - increasing the level of transparency in municipalities and the nation. This will inform residents to vote according to this information and therefore not re-elect more corrupt officials.	<i>Analysis RCT</i> (1) The probability of incumbent mayor re-elections decrease with the number of violations reported. The probability of re-electing a mayor with violations is further reduced as the number of radio stations, a proxy for information availability, in an area increases. (2) The research and, therefore, results are not focused on understanding mayors' behavioural reaction to audits.	-A nationwide random audit of city level officials. -It took place in Brazil, a fast-growing relatively 'wealthier' lower-middle income country, with high education levels of nearly 80%.	-The release of information about an official's use of funds prior to elections can inform voters and alter their voting behaviour away from voting for corrupt mayors. Moreover, increased dissemination of the information can increase these effects. -This government monitoring scheme was dependent upon information changing voter behaviour. The populace in this case are Brazilians who appear to be willing and able to use information to practise electoral accountability.
Olken (2007)	-Stealing of public resources during an infrastructure project or procurement. -Corruption	<i>Research goal</i> Determine if minimal incentives combined with central government can reduce construction expenditure capture. <i>Programme</i>	The right combination of monitoring and punishments can reduce corruption.	<i>Analysis RCT</i> (1) The government audit had a negative and significant impact on the level of missing expenditures, i.e.	-The central government monitored a local level project that received federal funding to disperse at the local level	Central auditing may reduce the amount of expenditures captured in local projects by making local officials more accountable for spending. Monitoring was more procedural than used to catch criminals. The lack of

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
	occurs at the point of transfer between (1) lower-level government and recipient populations, and (2) suppliers and implementation teams.	Monitoring: After awarding funds for construction of village roads and before construction began, an announcement was made that some villages would be audited by a central government agency. Incentive: Theoretically the government could punish offenders, although this rarely occurs. Therefore, audit results were read at an open community meeting to create substantial social sanctions.		corruption, among the treatment group. (2) There was an increase in the number of project jobs given to relatives of project official during the auditing period.	for labour and materials. -The incentive scheme was not strictly implemented, monitored or evaluated. -The programme took place in Indonesia.	punishments may have attributed to the continued large percentage of missing expenditures (20%).
Community monitoring and non-financial incentives						
Banerjee et al. (2009)	-Politicians soliciting bribes, stealing public resources or abusing their political position.	<i>Research goal</i> Determine if two separate campaigns on not voting for corrupt officials can change voter behaviour. <i>Programme:</i> NGO partner implemented two different educational /informational campaigns which encouraged voters (1) to either not vote blindly along caste lines or (2) to consider corruption when choosing a politician for whom to vote.	(1) Better-informed voters will be more likely to punish poor-quality or corrupt politicians. Educating voters about the quality politicians will encourage them to become better educated about the other politicians and less likely to vote for poor politicians. (2) [Assumed, not tested]: Politicians facing an electorate willing to punish them for corruption or other illegal activities will be less likely to engage in them.	<i>Analysis</i> RCT (1a) Directly educating people to not vote along caste lines increased voter turnout and decreased voting along caste lines, suggesting more informed voters do punish poor-quality or corrupt politicians. (1b) However, theoretically educating people about corruption does not affect voting behaviours.	-This intervention took place rural Uttar Pradesh, India. -Low literacy: approximately 70% for men, 40% for women -Caste-linked political parties, may be unique to India and similar campaigns may not be successful elsewhere	-A clear information campaign against corruption with a message tailored to the target population can be successful while overly theoretical campaigns, especially in areas with low education levels, may not be as successful.

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
Björkman & Svensson (2009)	-Hospital or healthcare workers and their absenteeism. -Corruption occurs at point of transfer between lower-level government and recipient populations.	<i>Research goal</i> Determine if a combination of community-based monitoring and decentralisation can reduce corruption among healthcare professionals. <i>Programme</i> Monitoring: Data collected from local health report cards on providers, households and performance were translated into easily understood posters within the communities. Community, staff and an interface meeting were held to convey the results of the report cards. After initial meetings, the communities were placed in charge of establishing ways of monitoring the providers. After a period of six months the communities and health providers were revisited to conduct a mid-term review.	(1) Once the community receives more accurate information about service quality and builds community capacity, it will be more likely to implement expected reforms and in a better position to monitor efforts. However, it may also choose to more regularly exploit the instruments at its disposal, i.e., praise workers when service provision improves and complain when it does not. Workers may then find coming to work, or more generally exerting effort, more attractive. (2) Complementarities in workers' effort combined with a more engaged and supportive community can therefore result in a virtuous circle, where higher effort by some staff makes it more attractive for others to also come to work as the social prestige of working in a well functioning health clinic rises.	<i>Analysis</i> RCT (1) Treatment villages saw a reduction in absenteeism, suggesting that the informational campaign to encourage community monitoring decreased absenteeism (i.e. corruption). (2) Health outcomes in the village were improved significantly a year after the programme began. (3) Healthcare workers made behavioural modifications suggesting an increase in effort: reducing absenteeism and waiting times, and increasing numbers of inoculations.	-The study used data from households and villages within a 5 km radius of the clinic, so the results may only hold for a small group of households near healthcare facilities. -The study took place in Sub-Saharan Africa -The involved community members were very diverse	-Empowering communities by giving them information and support to organise effectively can successfully decrease corruption (i.e. absenteeism), where communities can monitor healthcare facilities themselves. This may also alter healthcare workers efforts, leading to the provision of more and possibly improved health services, allowing for potential improvements in village-wide health outcomes. -This may only hold for communities close to healthcare centres where they can easily monitor them. Additionally, involving a diverse group of community members may be important to have effective community monitoring.
Francken (2009)	-Bureaucrats stealing public education resources. -Corruption occurs at the point of transfer between (1) higher-level government and	<i>Research goal</i> Determine if a media campaign on the capture of education funds and resources can reduce associated inefficiencies and corruption. <i>Programme</i> Schools received money for students that covered	(1) Increasing the recipient's awareness and knowledge of fund transfers, through media, can decrease capture as the recipients put pressure on officials to deliver the full amounts of transfers. (2) There are differences in information and monitoring	<i>Analysis</i> Quasi-experimental (1) Both access to media and literacy are correlated with reductions in the capture of in-kind and cash transfers. (2) Capture of in-kind goods is much higher	-This intervention took place nationwide but focused on community-level data. -This programme took place in Madagascar in Sub-	-Increasing monitoring, through the dissemination of information about fund transfers in the massmedia, can decrease the capture of in-kind transfers and cash transfers as the more knowledgeable recipient population tries to ensure that they receive the funds. -The effect of increased

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
	lower-level government and (2) lower-level government and recipient population.	most, if not all, of their tuition fees. The payments were conditional upon the school's submission of a budget to the government. Monitoring: The schools had to post the amount of money received in a public place. The government also audited the programmes at the district level. Additionally information about the policy was spread using media including newspapers, radios and TVs. Incentives: Corrupt officials would be punished by society and the government for stealing public funds.	costs between in-kind transfers and cash transfers. Cash transfers may be more easily monitored than in-kind transfers, and information about cash transfers may be easier to disseminate, making them the optimal choice.	than the capture of cash transfers, overall. And, literacy decreases the likelihood of the capture of cash transfers much more than it decreases the likelihood of in-kind transfers. (3) Additionally, a reduction in the distance between the capital and the district facility, proxying for likelihood of being monitored by the government, is correlated with a reduction in capture.	Saharan Africa.	monitoring and incentives is greater on cash transfers than in-kind transfers, suggesting that monitoring cash transfers, which are easily traceable, is easier than monitoring in-kind transfers. -A more literate populace seems more able to reduce the capture of cash goods, presumably because they are more adept at accessing and using accessing information.
Olken (2007)	-Stealing of public resources during an infrastructure project or procurement -Corruption occurs at the point of transfer between (1) lower-level government and recipient populations, and (2) suppliers and implementation	<i>Research goal</i> Determine if minimal incentives combined with community monitoring can reduce construction expenditure capture. <i>Programme:</i> Monitoring: (1) Villagers randomly received invitations to village-level meetings in which project officials had to account for project spending. (2) Along with invitations villagers randomly	(1) The right combination of monitoring and punishments can reduce corruption. (2) Increasing grassroots participation by community members in local-level monitoring can reduce corruption.	<i>Analysis</i> RCT (1) There was an increase in the number of project jobs given to relatives of project officials during the auditing period. (2) The community invitations increased the number of participants in the accountability meetings by 40%. However, there were small and insignificant effects of community meeting participation	-The incentives scheme was not strictly implemented, monitored or evaluated. -The programme took place in Indonesia.	Community level monitoring could be less effective than federal monitoring in a similar setting. Greater success may occur in communities where elite capture and free-rider issues are limited. The type of grassroots initiative may also influence the capture of labour and material costs differently, as demonstrated in this study.

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
	teams	received comment forms to provide anonymous information on project implementation and possible corruption. Incentives: Social sanctions for corrupt behaviour.		and comment forms reducing the level of missing expenditures.		
Reinikka and Svensson (2003)	-Bureaucrats and politicians stealing public education resources. -Corruption occurs at the point of transfer between lower-level government (at the local level) and recipient populations.	<i>Research goal</i> Determine if a media campaign on the capture of education funds - estimated to be nearly 80% of all funds allocated to education by a public expenditure tracking survey (PETS) - can reduce associated inefficiencies and corruption. <i>Programme Monitoring:</i> (1) The government published information in national and local newspapers detailing monthly monetary transfers to schools. (2) Primary schools had to post publicly how much money they received. (3) The government increased monitoring and supervision of schools. <i>Incentives:</i> Corrupt officials would be punished by society and the government for stealing public funds.	(1) Providing information to teachers and parents about the funds given to schools can allow them to monitor their schools and address any illicit capture of funds, i.e. corruption. (2) Increasing the likelihood of punishment for officers found to be misusing funds would discourage corruption.	<i>Analysis</i> Quasi-experimental (1) More informed schools, as measured by knowledge of fund capture by the headteacher and proximity to a newspaper outlet, led to a greater reduction in the capture of school funds.	-This intervention examined the effects of government changes at the local level on surrounding schools. -This programme took place in Uganda.	-Providing more information about funds transferred from federal to local officials appears to support communities to successfully monitor the use of education funds. This type of programme may lead to decreases in the illicit capture of education funds, i.e. corruption, when officers turn away from illicit practices to avoid the higher probability of detection. -Education is often viewed as important service by the community. Services important to the community may find such success through similar programmes.

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
<i>Institutional monitoring and financial incentives</i>						
Banerjee et al. (2007)	-Hospital and healthcare worker absenteeism. -Corruption occurs at the point of transfer between lower-level government and recipient populations.	<i>Research goal</i> Determine if a strictly defined monitoring and incentive scheme can reduce nurse absenteeism at a public rural hospital. <i>Programme Monitoring:</i> The government hired a local NGO to monitor Assistant nurse midwives (ANMs) attendance by using time and date stamping machine and random unannounced visits. <i>Incentives:</i> The district health officer altered the wage structure so that a large part of nurses' wages were based on attendance bonuses.	(1) Nurses, like other public service providers, are responsive to monitoring and properly administered incentives, and they will reduce absenteeism accordingly. (2) Since a large portion of wages are reliant upon attendance, ANMs will increase their attendance.	<i>Analysis RCT</i> (1) The increased monitoring and incentives initially decreased absenteeism. (2) However, these effects decreased over time as nurses got around the new regulations by getting absence approval from nurse managers and using more exempt days.	-This intervention took place at the village level. -This programme took place in Rajasthan, India -There were low demands for health services provided by ANMs. Their attendance was therefore not considered necessary by the nurse managers and this is one reason the incentives scheme was ineffective.	-Monitoring and incentives can decrease absenteeism; however, there is an incentive for workers to circumvent new schemes. This may lead to decreasing returns over time with these types of programmes, unless they are strictly designed and applied to meet local needs (e.g. low demand for services). -India is plagued by high absenteeism at public health facilities, and this programme was directly addressing that problem, suggesting that results may be different in areas not plagued by high absenteeism.
Duflo et al. (2010)	-Teacher absenteeism -Corruption occurs at point of transfer between lower-level government and recipient populations.	<i>Research goal</i> Determine if a strictly defined monitoring and incentive scheme can increase teacher presence at a public school. <i>Programme Monitoring:</i> A partner NGO monitors daily teacher attendance by using cameras with a time and date stamp. <i>Incentives:</i>	(1) Teachers, like other public service providers, are responsive to monitoring and properly administered incentives. (2) Since a large portion of wages are reliant upon attendance, teachers will increase their attendance. (3) Secondary: reducing corruption, i.e. increasing teacher attendance, will improve service delivery	<i>Analysis RCT</i> (1) Monitoring and incentives decreased absenteeism among teachers (2) Secondary outcome: The programme had a small, though significant, effect on student's mean test scores.	-This intervention took place at the school level: teachers were monitored within these schools. -This intervention took place in India which had a high baseline level of teacher absenteeism of approximately 24%.	(1) Teachers respond to monitoring and incentives through increasing their rate of attendance. (2) Greater teacher attendance was seen to improve service quality outcomes. However, if the goal is solely to raise the education level of children, programmes of this nature may have very small <i>initial</i> effects on children's test scores. Further testing is needed for long-term results.

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
		Alter wage structure so that it is based upon teacher attendance.				
Changing the rules						
Decentralisation						
Asthana (2008)	-Public utilities soliciting bribes -Corruption occurs at the point of transfer between lower-level government and recipient population and between utility officials and contractors.	<i>Research goal:</i> Determine if decentralised drinking water facilities are less/more corrupt than centralised facilities. <i>Programme:</i> Some local governments decided to take control of their water utilities plants while others remained in the hands of the state (regional) governments.	(1) Cities adopt a decentralised form of utility control rather than a state controlled system under the belief that this will provide better services to the public - closer to the people at the local level - and reduce corruption as there is less room for inefficiency than in central government	<i>Analysis:</i> Observational/ econometric Decentralised water facilities were found to have higher levels of corruption than centralised facilities on seven corruption measures. This is clear evidence against the proposed theory that decentralisation is a viable corruption reduction programme.	Significant public investment has gone into the water sector in India. Corruption is probably due to large-scale construction, technical expertise (can reduce transparency), and high demand for services. This intervention took place at the village level in India.	-Decentralisation can lead to higher levels of corruption among large-scale, necessity services. Perhaps this is due to a reduction in barriers to elite capture of funds and less central monitoring.
Bjorkman & Svensson (2009)	<i>See above in 'Community monitoring'.</i>					
Chavis (2010)	-Abuse of political position. Elite capture of local funds for various types of projects (e.g. roads, bridges, microfinance). -Corruption occurs at the point of transfer between the local officials and the population.	<i>Research goal</i> Determine if competition for local projects can create a local monitoring system that prevents the misuse of funds when public goods are allocated through a decentralised system. <i>Programme</i> (1) World Bank (WB) trained facilitators inform villages of projects, monitor meetings and	(1) Decentralisation can reduce the opportunity for corruption and provide better services given the advantage of local information concerning needs. (2) Having communities compete locally for block grants increases project efficiency and thereby helps decrease funds open to misuse or capture by local elites. Additionally competition could decrease	<i>Analysis</i> Quasi-experimental Competition (number of villages bidding for projects) appears to decrease the misuse of projects funds, as seen by the reduction in the costs of road projects (per unit) and the decrease in microcredit projects (believed to be a large source of elite capture).	This is a nationwide project that allocates funds at the district level, and gives funds at the village level where the project decisions are made.	Decentralisation is believed to be advantageous due to its capacity to better serve the community through better understanding their needs and reduce risks of fund leakages at the many points of centralised bureaucracy. The main critique of the strategy is that it opens opportunities for elite capture. This programme has sought to change corrupt behaviour by embedding incentives into the organisational design of the programme. The process appears successful in

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
		provide technical support. (2) Villages plan and decided on two project proposals (one from women) to submit to a sub-district inter-village council, where reps from each village and a district level engineer decide upon projects to fund. (3) Block grants are awarded to sub-districts according to population and money is given directly to villages in phases with paperwork to sign in each phase. (4) Avenues to anonymously report cases of corruption in villages, and random auditing and verification to hold community leaders more accountable.	inefficiency through a pure selection effect, if project quality is known. (3) Increasing participation through village meetings on project selection will improve transparency and allow the community, which is knowledge rich, to monitor the use of its resources.	When sub-district competition is low, the funds can be split between individuals and when it is too high, it has the potential to decrease efficiency in the long run as some villages may become discouraged. Where village meeting attendance is higher there is an increased efficiency among communities and sub-districts. However, it is unclear if this is due to pre-existing openness and good community governance or that participation promotes these better outcomes.		reducing corruption, but is has a rather complex structure that requires the participation of various actors, implementation of several monitoring and accountability procedures, and a reliable organisation to oversee the process. Without these structures in place, a strategy of this magnitude may prove less effective. However, if replicated the success could save millions of US dollars.
Procurement procedures						
Tran (2008)	-Bribe-taking in infrastructure production or procurement. -Corruption occurs at point of transfer between lower-level government and recipient populations (between government and sellers of goods to	<i>Research goal</i> Determine if either of two types of open procurement auctions can reduce corruption. <i>Programme</i> (1) 2001: government decrees that goods must be procured through a <i>best-value</i> auction. High-, medium- and small-value contracts required open, restricted, and no	Both open auction options are thought to be beneficial for different reasons: (1) <i>Best-value</i> auctions are believed to increase the number of bidders and therefore create greater competition. (2) <i>Best-price</i> auctions are believed to incorporate product quality better than <i>best-value</i>.	<i>Analysis:</i> Observational/ econometric (1) Rule by <i>best-value</i> increased bribes (percent of equipment costs) for medium-valued contracts with restricted auctions and had an insignificant decrease for high-valued contracts with open auctions. (2) Rule by <i>best-price</i>	-Initial level of corruption is estimated at 14.7% of equipment costs. -Based on one firm's account of customs at an unknown level - likely national or port cities. -This study took place in an undisclosed Asian country.	-Official discretion, soliciting vendors, appears to be the key source of corruption in the <i>best-value</i> method. -The <i>best-price</i> auctions limit the autonomy of officials and reduce corruption. -It is important to interpret these results cautiously because they are based on one firm's experiences.

Study	Corruption type examined	Logistics of the anti-corruption programme	Theory of the anti-corruption programme (causal mechanisms)	Programme results	Other factors affecting the results	Implications for the programme's theory of change
	the government).	auctions, respectively. (2) 2004: government changed to <i>best-price</i> auctions in which the proposal with the lowest cost, above a quality bar, was chosen.		significantly decreased both restricted and open auction bribes.		

Appendix 4.3: Results/outcomes

Study	Analysis type	Outcome variable(s): measure of corruption	Main independent variable(s)	Quantitative results: <i>coefficients, means, significance, percentage changes</i>	Sample size	Textual summary of results	Notable research strengths and/or limitations (quality considerations)	Conclusion
Anson et al. (2006)	Observational /econometric	* Degree of fraud : under-invoicing to avoid tariffs * Degree of PSI fraud : over-invoicing to obtain greater profits – their income based on value of shipment <i>Under and over-invoicing determined by the difference between true value and reported value of that good</i>	* Pre-shipment inspection(PSI) policy in place	<i>Ratio of coefficients with and without PSI in place</i> Basic estimations: Argentina: 6.8*** (1.7) Indonesia: 2.3*** (0.4) The Philippines: 0.9 (1.0) Ratio >1: fraud increased, ratio <1: fraud decreased Basic estimations reported here, unconstrained estimates and tests to control for incentives show less significance but the same outcome signs *** Significant at 99% confidence level	6,882	Fraud decreased in the Philippines with introduction of PSIs, although not significantly. Fraud increased in Indonesia and Argentina with introduction of PSIs. In general, over-invoicing occurred after the introduction of PSIs in all three countries. This supports the notion that PSI companies increase the cost of shipments in order to increase their own revenues, possibly making this intervention more costly than anticipated.	They do not discuss the political context of the three countries and their description of the programme implementation seems perfunctory. Given these short comings their reasoning for why fraud would decrease in the Philippines and increase elsewhere is relatively incomplete. However, incentives and the systematic use of information are outlined as reasons and seem to be highly influential in this process.	There is mixed evidence on PSI policies and therefore more research needs to be done to determine the factors leading these results.
Asthana (2008)	Observational /econometric Comparisons of means	Bribes related to: * Manipulating water bills and the average payment per transaction * Expediting repairs and the average payment per transaction * Expediting new connections and average payment per transaction * Kickbacks from contractors	*Decentralisation (binary)	<i>Difference of means (Decentralised – centralised):</i> • Manipulating bills: 0.10*** • Average payment per transaction: -0.01** • Expediting repairs: 0.09*** • Average payment per transaction: -0.02** • Expediting new connections: 0.05*** • Average payment per transaction: -0.52** • Kickbacks from contractors: 0.02** ***Significant at 99%, **Significant at 95%, *Significant at 90% confidence level	Water utilities: 200 Households: 6,000 Repairs: 1,620 New connections: 593 Contractors: 508	Decentralisation is correlated with a larger, statistically significantly level of corruption on all the dependent variables. However, centralised utility companies pay statistically significantly more in bribes for each of the variables measured – besides kickbacks from contractors which are not measured.	The experiment has a large sample and the author considers several controls in the analysis. However, the following are unaddressed: (1) could a difference in time of decentralised change the outcomes, (2) did any of the utility companies change from centralised to decentralised or vice versa during the year mentioned in survey, (3) were there other anticorruption strategies occurring at the same time that could have unsystematically caused differences in results.	It appears that decentralisation could lead to greater levels of corruption; however, a lack of explanatory variables, controls and information make more information on the topic necessary for any definitive conclusions.

Study	Analysis type	Outcome variable(s): measure of corruption	Main independent variable(s)	Quantitative results: <i>coefficients, means, significance, percentage changes</i>	Sample size	Textual summary of results	Notable research strengths and/or limitations (quality considerations)	Conclusion
Banerjee et al. (2007)	Randomised control trial	* Attendance of assistant nurse midwives (ANMs); the monitored health care workers at public health centres	*Treatment group dummy <i>Treatment: monitoring attendance with time/stamp machine and incentives to be present</i>	<i>For centres with one ANM . . .</i> Programme increased the probability of ANM presence in comparison to the control group: (1) <i>Overall:</i> • 10.4 percentage points on all days • 14.7 percentage points on monitored days (2) <i>Start of programme – after the first 6 months of inception:</i> • 24.3 percentage points on all days • 27.9 percentage points on monitored days (3) <i>End of programme – 16 months after inception:</i> • 7.3 percentage points for all days • 2.9 percentage points on monitored days *There was virtually no difference between treatment and control groups and both had absenteeism near 60%. <i>For the additional ANM in two- ANM centres . . .</i> Programme increased probability of ANM present: (1) <i>Overall:</i> • 13.7 percentage points on all days • 14.2 percentage points on monitored days (2) <i>Start of programme:</i> • 10 percentage points on all days • 4.1 percentage points on monitored days (3) <i>End of Programme:</i> • 13.3 percentage points on all days • 14.2 percentage points on monitored days **No significant effect on services provided due to the number of patients treated at centres.	135 villages	Initially, the monitoring system was extremely effective. But after a few months, the local health administration appears to have undermined the scheme from the inside by letting the nurses claim an increasing number of ‘exempt days’. Eighteen months after its inception, the programme became completely ineffective. Unlike the monitoring of the regular nurses, the programme effect initially increased over time for the second nurse in two of the health centres, mainly because the absence rate of all additional ANMs was initially high. The programme didn't change number of patients treated, which in any case is very low. And, clients do not appear to respond much to the greater likelihood of ANMs being present on the monitored days (Mondays).	This is a well designed RCT that has created comparable groups for which the results can be considered accurate and reliable.	Monitoring and incentives can be effective at reducing nurse absenteeism (corruption) in public hospitals. However, it is imperative that the incentive schemes are not undermined and are the programme design is based on local needs (e.g. demand for services) for these types of programmes to prove effective.

Study	Analysis type	Outcome variable(s): measure of corruption	Main independent variable(s)	Quantitative results: <i>coefficients, means, significance, percentage changes</i>	Sample size	Textual summary of results	Notable research strengths and/or limitations (quality considerations)	Conclusion
Banerjee et al. (2009)	Randomised control trial	* Voter turnout * Voting along caste line (self-reported)	*Treatment group dummies <i>Treatment:</i> (1) <i>Awareness campaign to not just vote along caste line</i> (2) <i>Awareness campaign on anti- corruption (theoretical)</i>	(1) <i>Caste campaign</i> • Increased voter turnout by 9 percentage points • Did not increase voter registration • <i>Lower Caste Group:</i> decreased voting along caste line by 12 percentage points • <i>Other caste groups:</i> no significant results for voting along caste lines (2) <i>Corruption campaign</i> • had no effects	Caste campaign survey data: 1,538 Corruption campaign survey data: 2,028	The caste campaign increased voter turnout but did not increase voter registration. There was also a significant reduction in propensity to vote along caste lines in the lower income caste group. This is entirely due to voters moving away from candidates charged with heinous/major crimes. The corruption campaign did not affect voter turnout, voter registration or voting decisions.	This is a well designed RCT that has created comparable groups for which the results can be considered accurate and reliable.	Specific campaigns to decrease voting for corrupt officials (i.e. caste-line voting experiment) can be effective. More general campaigns that provide little/no reliable information on who is corrupt are less likely to spur voter accountability.
Björkman & Svensson (2009)	Randomised control trial	* Absenteeism	*Treatment dummy <i>Treatment: being involved in a village that had a programme to initiate village involvement in health-care</i>	• Absenteeism was reduced by 10 percentage points in the treatment facilities • 3.1 workers were present in treatment clinics as compared to 2.3 in the control clinics	50 public dispensaries	Treatment villages saw a reduction in absenteeism at their health centres.	This is a well designed RCT that has created comparable groups for which the results can be considered accurate and reliable.	Increasing community involvement does seem to decrease absenteeism.
Brollo (2008)	Observational /econometric Panel	* (1) Infrastructure transfers * (2) Incumbent mayors probability of re- election or (b) political party re-election as the dependent variables	(1) *Audited × violations – none * Audited × violations – few * Audited × violations – many (2) *Interaction terms of distance (time) of release from election × corruption incidences *15 mo (months) × transfers after audit *2 mo × transfers after audit	(1) • No violations – no significant reduction in transfers • Few violations (0-2) 16% reduction in transfers (significant) • Many violations (x>3) 42% reduction in transfers (significant) • Adjusting for time passed since audit report, those with no violations have positive increases in transfers – increasing each year (5.3%, 17.5%, 28%, 100%) • Those with few violations have decreases in each year but only significant in year of audit (28%, 22%, 40%, 2%) • Those with many violations	779 municipalities	Overall, it seems that the regression results definitely illustrate that the greatest effects of the release of audit reports occurs within 2-8 months before mayoral election and 15 months after.	Initially, Brollo uses the RCT-based data to successfully prove the diminishing effects of the audit/media intervention evaluated by Ferraz. Alternatively, the reasoning for an increased effect 15 months later is analysed with observational data. The author clearly links the support behind the transfer causing the new reduction in votes for corrupt officials, but the search for alternative reasons is not exhaustive.	A federal-led audit of local mayors may reduce vote- share for corrupt mayors initially, but this effect will decrease over time. Brollo illustrates that the reduction in transfers nearly a year after the audit, due to corrupt behaviour, may cause voters to punish mayors later in the game.

Study	Analysis type	Outcome variable(s): measure of corruption	Main independent variable(s)	Quantitative results: <i>coefficients, means, significance, percentage changes</i>	Sample size	Textual summary of results	Notable research strengths and/or limitations (quality considerations)	Conclusion
			*pre-election audit (treatment) * transfers after audit *pre-election audit (binary) *corruption *fixed effects on a vector of mayoral and municipal characteristics	have significant decreases in every year (36%, 39%, 62%, 65% - 30% of the sample). - However, municipalities with corruption released which are affiliated to president's political party receive relatively more transfers in years after audit report releases (2) With outliers eliminated from the sample (corruption incidences > 6 - only 3.5% of sample) Audit results released 1 mo prior to election: 16% reduction in political party re-election (significant) 15% reduction in incumbent re-election (significant) - This remains significant for 6 mo (15.2% and 12.4%) and 8 mo (12.8% and 13.1%). There is no statistical significance again until 15 mo (26.4% and 17.2%) - greatest time effects - When 15 mo is interacted with 'transfers after audit' it is statistically significant for probability of party re-election (only 1.7% and not negative), but not for incumbent re-election - and it does not show to be significant with the interaction 2 mo after and 'transfers after audit'.				
Chavis (2010)	Quasi-experimental	* Cost of the road (per square meter) <i>efficiency ~ proxy for elite capture of funds</i> *Microcredit efficiency ~ proxy for elite capture of funds	(1) Villages per a sub-district as a proxy for more grant competition (2) Attendance of public meetings proxy for increased transparency,	Roads costs: (1a) Increasing competition (the number of villages bidding) by 10% leads to a 1.8% decline in road construction costs. When length and width of road are controlled for, the effect increases by more than 40%. (1b) Villages with a 10% higher	Villages (road cost and competition): 3235 Villages (road cost and village part): 2252	Road cost: Increasing competition led to a statistically and substantively significant decline in road construction costs. This increased efficiency was caused by competition and limits the amount of funds available for elite capture. Participation also reduces per unit road	This is a well designed econometric analysis of an experiment with a large sample size. The author addresses controls that could affect the interpretation of the results and so that the outcomes appear reliable and accurate. Given that it is an observational study	This programme has reduced corruption (reduction in per unit road costs and allocation of funds toward microcredit) by embedding incentives into the

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			<i>accountability and participation</i>	than average meeting attendance had a 0.9% decrease in road costs (per unit). <i>Microcredit:</i> (2) Coefficient estimates 70% of the decline in the allocation to microcredit happens in the inter-village meetings. The remaining 30% is due to the anticipation of increased competition at the village level (i.e. not forming as many fake credit groups).	Sub-districts (microcredit and competition): 811	costs significantly even when the competition between villages is low. At baseline microcredit, programmes involved little monitoring, low repayment rates and were believed to be transferred to elite, their family and friends. The results indicate that competition reduces the funds allocated to microcredit. Based on this measure, competition between localities for development funds has a significant impact on efficiency. Total attendance at inter-village meetings also seems to have a strong effect on the percentage of funds allocated to microcredit; however this effect is somewhat offset by the role of women in the meetings - who predominantly choose these projects. Competition is seen to actually change the quality of proposed projects and not just those accepted in sub-districts with a lot of competition. Believed to be due to the low cost of increasing quality given the possible benefit. This may decrease among the highest levels of competition as villages may believe that they will not get project funding - over time. Similarly, increased community participation in project planning and in the allocation of funding leads to	we must rank this study with a quality below the RCTs and quasi-experimental papers.	organisational design of the programme. The process appears successful in reducing corruption, but is has a rather complex structure that requires the participation of various actors, implementation of several monitoring and accountability procedures, and a reliable organisation to oversee the process. Without these structures in place, a strategy of this magnitude may prove less effective. However, if replicated the success could save millions of dollars.

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						better outcomes – reduction in costs of roads. The effect occurs at all levels of competition.		
Duflo et al. (2010)	Randomised control trial	Teacher attendance	* Treatment (dummy) <i>Treatment: teachers that had their attendance monitored daily by cameras and salaries altered to be based on their attendance rates</i>	- Absenteeism fell by 21 percent in the treatment group - Children's test scores increased by 0.17 standard deviations	2,813–3,071 teachers	Monitoring teachers and giving them attendance incentives decreased their absenteeism. The treatment also slightly though significantly increased children's test scores.	This is a well designed RCT that has created comparable groups for which the results can be considered accurate and reliable.	Monitoring and incentives can be effective at reducing teachers' absenteeism and may slightly increase children's academic performance in the short term, however more research is needed to see long-term effects of both findings.
Ferraz & Finan (2008)	Randomised control trial	Electoral outcomes of mayors up for re-election in 2004 Compared between villages that were audited pre-election and post-election (on its own, there is no difference in probability of being re-elected between the two groups)	<i>Corruption:</i> * Severity of violations found and reported in audit of mayors * Number of violations found and reported in audit <i>Media coverage:</i> * Number of radio stations in city * Percent of households with radios	(1) <i>Corruption</i> - Two violations reported, associated with a 7% reduction in the likelihood of re-election - Three violations reported, associated with a 14% reduction in the likelihood of re-election (2) <i>Media</i> - Two violations and one radio station, 11% reduction in likelihood of re-election - No violations and one radio station, 17% increase in likelihood of re-election <i>[All results refer to comparisons with the control group – audit released after re-elections]</i>	Incumbent mayors 373 Mayors who ran for re-election 263	<i>Corruption:</i> Probability of incumbent mayor re-election decreases with the number of violations reported before the municipal elections. The comparison of control and treatment indicate that individuals estimate a median level of corruption. When the number of violations was greater than perceived or estimated, voters punished mayors. However, when it was lower than perceived these mayors were rewarded. Probability of incumbent mayor re-election also decreases significantly in areas with radio stations and reported violations of two or more.	The paper does not assess whether those that remain in office reduce their corrupt behaviour or if less-corrupt officials run for office. However, the rigorous research provides reliable results for those outcomes that are tested.	When reliable central government auditing reports on local officials were widely disseminated the voting population practised electoral accountability. When the number of violations was greater than perceived – the estimated median level of corruption – voters punished mayors by not re-electing them. However, when it was lower than perceived these mayors were rewarded.

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Francken (2009)	Observational /econometric Cross-section	*Indicator of capture {1 - ((funds received by agent) / (funds from agent-intended for agent))}	* Radio proxy for media access * Literacy * Literacy × Radio * Distance to capital proxy for being audited	<i>Marginal effects:</i> <i>In-kind capture</i> - Radio: -.333 (significant) - Literacy: -.002 (significant) - Radio * literacy: .003 (significant) - Distance between capital and district facility: 0 (coefficient is positive and significant) <i>Cash capture:</i> - Radio: -.594 (significant) - Literacy: -.026 (significant) - Radio * literacy: .010 - Distance between capital and district facility: 0.001 (coefficient is positive and significant)	156	Media access and literacy appear to reduce both in-kind and cash captures. In-kind capture is greater compared to cash capture and literacy reduces the capture of cash more than that of in-kind captures. Additionally a reduction in the distance between the capital and the district facility is correlated with a reduction in capture.	The author uses a vast number of robustness checks to reassure readers that systematic biases and endogeneity issues have been addressed and are not causing the significant findings.	Cash transfers are less likely to be captured as compared to in-kind captures. Moreover, media can help reduce the capture of funds especially the capture of cash transfers.
Olken (2007)	Randomised control trial	Missing expenditures: (based on before and after corruption costs) Official project cost vs independently estimated project costs	*Treatment group (dummy) (1) <i>Treatment: Increasing the probability of an audit from a baseline of 4% to 100%</i> (2) <i>Treatment: Participation experiments, increasing grass-roots participation</i>	(1) <i>The audit treatment</i> - Correlated with significant reductions in missing expenditures of about 8 percentage points, includes both labour and materials. (Note: missing expenditures averaged nearly 24% across villages in the study) - The number of project jobs given to relatives of project officials increased in response to the audits. (2) <i>Participation experiments</i> - Small and insignificant reductions in missing expenditure - Invitations treatment reduced missing labour expenditures (significantly)	608 villages	The audit treatment – that is, increasing the probability of an audit – was associated with reductions in missing expenditures. However, the increase in apparent 'nepotism' suggests that alternative forms of corruption may have been substituted for those currently being monitored. The participation experiments – random invitations to public accountability meetings and anonymous comment forms – were associated with much smaller and statistically insignificant, average reductions in missing expenditures. Specifically, reductions in expenditures were only found when free-rider issues and elite capture were limited. Additionally, the small overall effects	This is a well designed RCT that has created comparable groups for which the results can be considered accurate and reliable. One weakness may be that the incentive scheme was not strictly implemented - or not stated as so in the text - and therefore lacks a complete evaluation.	These results suggest that (1) auditing with more regularity has the possibility of reducing corruption, although it may move to other forms of corruption that are unmonitored, and (2) that while grassroots monitoring has the potential to increase community participation in the use of public expenditures, it may not significantly reduce corruption. Care must be taken to minimise free-rider problems and prevent elite

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						mask substantial differences across expenditure types and different ways of implementing increased grassroots participation. In particular, the invitations treatment substantially reduced missing labour expenditures but had no effect whatsoever on missing material expenditures.		capture.
Reinikka & Svensson (2003)	Quasi-experimental Differences-in-difference regression estimates Instrumental variables regression estimates	* Average percentage of funding received by schools	* Access to newspapers (binary)	- Point estimate suggests that policy changes since 1995 have led to 60% reduction in local capture of educational funds. - Access to newspapers increased funding by 13.8 percentage points - significant at 95% confidence level. <i>[Found through using a difference-in-differences strategy that compares schools (headteachers) with at least one main newspaper against those (control group) with no access to a newspaper]</i>	1995: 229 schools 2001: 217 schools	They find that schools with access to newspapers, and thus more extensively exposed to public information about the grant programme, on average increased their funding over schools that lacked access to newspapers, and that this difference-in-differences remains unchanged even when they add income as an additional control.	The authors take extreme care to isolate the treatment effect and control for other variables. For example, schools in economically better-off communities experience a lower degree of capture; this is controlled for in the further analysis. Also the difference between headteacher knowledge and newspaper access is separated.	Increasing information and awareness about school funds can increase the actual receipt of federally disseminated education funds.
Di Tella (2003)	Quasi-experimental	* Changes in input price of homogeneous hospital supplies (e.g. ethyl and hydrogen peroxide)	* Auditing level (dummy for the auditing phase) * Auditing (actual wages - opportunity wages)	<i>Prices changes relative to original levels after introduction of monitoring policy:</i> - During the implementation of monitoring, prices decreased by 12.3% 9 months after the intervention began, prices decreased by 14.6% 15 months after the intervention began, prices decreased by 9.7% (Down nearly 5% from implementation stage) - Wage premium elasticity of input prices is 0.25 (0.21 when use wage instead of wage efficiency) in period 3 - Relative to pre-crackdown period, a 1 s.d. increase in efficiency wage led to a	28-33 city hospitals	Prices decrease after the introduction of a monitoring policy. While the estimated effects decrease over time they remain significant. When audit intensity is at its maximum the effect of wages on input prices is negative but insignificant (1st phase of crackdown). The effect becomes greater (in absolute terms) during the last phase of the crackdown and significant - after the nine-month decrease - when monitoring is greater than pre-crackdown but believed to be less than that original levels. When auditing decreases,	He uses the data collected from a small sample of 28-33 hospitals in Buenos Aires in the regressions and the time periods of the corruption auditing programme to examine the relationship by observations. Although he attempts to correct for the small sample biases, it limits his ability to conclude that it is wages rather than the type of people who create the third effect.	Findings indicate that wage increases alone will not decrease corruption but rather a concurrent increase or audit programme needs to be in effect to make the wages also decrease corruption.

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				reduction of 1/3 s.d. in price.		hospitals where officers are paid well continue to keep the prices in check. (See note in research limitations)		
Tran (2008)	Observational /econometric	* Bribes paid *Profits	*Best-value auction (2001–2003) *Best-price auction (2004)	The <i>best-value</i> auction (2001–2003): • Restricted auctions (medium-value contracts), increase of bribes and firm profits (for equipment cost) by 9.2 and 7 percentage points, respectively. • Open auctions (high-value contracts), decrease in bribes, but it is not significant. The <i>best-price</i> auctions (2004): • Restricted auctions (medium-value contracts), decrease of bribes and firm profits (of equipment cost) by 5.7 and 5.9 percentage points, respectively. • Open auction (high-value contracts), decrease in bribes and firm profits (for equipment cost) by 4.2 and 5.9 percentage points, respectively.	144	Bribes and profits fell after <i>best-price</i> auctions. The fact that profits fell more than bribes did among open auction contracts indicates that the government gains more from promoting competition than from limiting bribery. The <i>best-value</i> auctions (2001–2004) were correlated with increases in bribes and profits. Administrative and time costs of implementing the auction make the losses even greater than if a secret auction had occurred.	This is a well designed econometric analysis that uses difference-in-differences with the control group the small-value contracts. This is further adjusted to control for firms that attempt to join this category to obtain a closed auction. The outcomes appear reliable and accurate. However, given its small scope (data from one firm) and ability to control for additional factors, we must rank this study with a quality below the RCTs and quasi-experimental papers.	Open auctions that use a <i>best-price</i> auction structure (proposal with the lowest cost, above a quality bar is chosen) appear to be successful in reducing corruption.

The authors of this report were supported by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre).

The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) is part of the Social Science Research Unit (SSRU), Institute of Education, University of London.

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This material has been funded by the Department for International Development. However the views expressed do not necessarily reflect the department's official policies. The report was first published in 2011 by:

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ISBN: 978-1-907345-14-2

Cover image ©IFAD/G.M.B.Akash

The views expressed in this work are those of the authors and do not necessarily reflect the views of the EPPI-Centre or the funder. All errors and omissions remain those of the authors.

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