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Frédéric Lesné

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Université Clermont Auvergne
École d'Économie
École Doctorale des Sciences Économiques, Juridiques et de Gestion
Centre d'Études et de Recherches sur le Développement International (CERDI)

Measuring Corruption in Business Surveys: Current Practice and Perspectives

Thèse Nouveau Régime
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Pour l'obtention du titre de Docteur *ès* Sciences Économiques

Par

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Foreword

During my undergraduate studies, I acquired the strong conviction that corruption represents one of the biggest obstacles to economic development. This belief has been reinforced during the first two years (2009-2010) I have worked at the NGO Transparency International, implementing a project tackling corruption in the education sector in seven African countries.

Embarking on a PhD in November 2012, I felt that academic research on corruption, while generally confirming that corruption is indeed a barrier to economic development, was not set on firm grounds. The issue of measurement was of particular concern to me. The great majority of studies looking at the causes and consequences of corruption from either a microeconomic or a macroeconomic perspective were not – in my opinion – taking seriously the risk of their results being at least partly driven by the way they measured corruption.

A review of corruption indicators I produced during my first year as a PhD student confirmed my impression that the literature on the economics of corruption would definitely gain from looking more carefully at the way corruption is presently measured and how current practice may be improved. One of the main takeaways from my earlier research is that corruption business surveys have a comparatively larger potential for improvement compared to other corruption measurement tools such as assessments from experts, composite indices or “objective” indicators of corruption.

Business surveys on corruption have been implemented for decades, but research aiming at understanding the way respondents to such surveys do answer questions about corruption is surprisingly limited. Important decisions made by survey designers on how to phrase questions so as to ensure that respondents are candid when answering corruption questions have not received sufficient attention. While the phrasing of corruption questions in business surveys is now somewhat standard, it is not to say that those questions are successful in measuring corruption accurately.

For this reason, I decided to dedicate my PhD thesis to producing more reliable indicators of corruption using business surveys. Thanks to the support of my two PhD supervisors and the financial contribution of the Foundation for International Development Study and Research (FERDI), I joined the Transparency International (TI) Chapter in Madagascar in July

2014 as a technical advisor, with the task of fundraising for, designing and implementing an anti-corruption programme aiming at better understanding the corruption constraints faced by private firms operating in Madagascar. While generating first-hand evidence of corruption used by Transparency International for advocacy purposes, this programme also provided a suitable research environment to test indicators of corruption constructed from business survey data. Corruption in Madagascar is endemic, as reflected by its low score of 26/100 in TI's 2016 *Corruption Perception Index*.

Between July 2014 and March 2015, I carried out the first phase of this programme with funding from the embassy of the United Kingdom in Madagascar. This project led to the production of a Transparency International report shelling light on the burden of administrative corruption supported by private companies located in Antananarivo, Madagascar's capital city. The survey I implemented as part of this project interviewed a total of 436 firm owners and managers.

From early 2015, the Madagascar Chapter of Transparency International started experimenting serious financial difficulties and a leadership crisis that threatened the very presence of the NGO in Madagascar. Facing the risk of losing Transparency International as my research partner despite two more business surveys to implement, I decided to take over the directorship of Transparency Madagascar in July 2015 for a limited transition period. The objective was two-fold: restructuring the Chapter to guarantee recovery and preserving its capacity to carry on the private sector research programme which is the foundation of my PhD dissertation.

A few weeks after my takeover as Executive Director, Transparency Madagascar received a grant from the United Nations Office on Drugs and Crime (UNODC) to survey 434 firms that were awarded public contracts in 2013 and 2014 about their perception of the public procurement process in Madagascar. In March 2016, the British embassy in Madagascar funded a last business survey implemented by Transparency International aimed at gathering data on corruption in relation to business creation in Madagascar. More specifically, this survey asked 382 new business owners and managers about their perception and experience of bribery in the process of setting up a business in Madagascar.

I left my position as Executive Director at Transparency Madagascar in December 2016, having successfully revitalised the Chapter with an operating budget multiplied by a factor of ten under my directorship. This experience, although not foreseen at the start of my PhD, has greatly contributed to my research as well as my personal and professional development.

I feel very fortunate to have been able to realise precisely what I wished as a PhD student: to carry out applied research in a developing country, to design and implement my own research tools and to advocate for anti-corruption reforms alongside prominent civil society organisations. I am thankful to all those who made this fulfilling journey possible.

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I have had the great privilege of working with remarkable colleagues at TI-IM: Mrs. Mireille Rakotosoa, Mrs. Sariaka Razafimahefa, Mrs. Séverine Diallo, Mr. Haja Randria Arson, Mr. Edmond Andriambelomanga, Mr. Simon Rakotomanga, Mr. Jean Rémi, Mr. Rivo Randrianatoandro, Mrs. Landy Rakotondrasoa, Mr. Omer Andriaminah, Mrs Irna Rajaombinintsoa, Mr. Jacques Randriambololona and Ms. Kanto Rakotondramanana.

I am particularly grateful to all those who were involved in the three business surveys designed and implemented for this PhD thesis: Mr. Hoby Razafindrakoto, Ms. Tiana Rakotonirina, Mr. Jary Rakotoarimanana, and the entire team of surveyors and data entry operators.

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My first year as a PhD student at CERDI would have been much less enjoyable without Frédéric, Stéphanie, Joël and Maxence. I cannot possibly fail to mention Catherine, Manu, Paul and Hélène, my other long-time friends from CERDI, for the great time we spent together as students.

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I am grateful to my family for providing me support in this rewarding but demanding journey that is doctoral studies.

Finally, I would like to thank all attendees to my PhD thesis presentation held on 16 August, 2017 at *Institut supérieur de la communication, des affaires et du management* (ISCAM) in Antananarivo, Madagascar.

List of Acronyms

ARMP	Autorité de Régulation des Marchés Publics
CERDI	Centre d'Études et de Recherches sur le Développement International
FERDI	Fondation pour les Études et Recherches sur le Développement International
INSTAT	Institut National de la Statistique
JIRAMA	Jiro sy Rano Malagasy
NGO	Non-Governmental Organisation
OLS	Ordinary Least Squares
RRQ	Randomised Response Questioning
TI	Transparency International
USD	United States Dollar

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Chapter 1

General introduction

The topic of this doctoral thesis is corruption measurement. Its main contributions to economic research are a reflection on the current practice of producing corruption indicators using business survey data, and suggesting innovative approaches to improve the quality of those indicators.

Defining and measuring corruption

The NGO Transparency International defines corruption as the “*abuse of entrusted power for private gain*” (Transparency International, 2009). Due to its secretive nature and the multiple acts it encompasses, measuring corruption has proven challenging.

As more direct measuring instruments are often lacking, citizen and business surveys as well as expert assessments are used to quantify corruption. Indicators generated from surveys or expert assessments may be aggregated into so-called composite indices, which aim to measure the corruption phenomenon more comprehensively than each indicator that composes them. The two most widely used composite indices in the economic literature are the World Bank’s *Control of Corruption Indicator* and Transparency International’s *Corruption Perception Index*. Both indices have been produced annually since their creation in the 1990s and rank countries according to the perception of the extent to which corruption affects the public sector.

Advantages and limits of corruption measuring tools

No indicator can be claimed to measure corruption perfectly. All available measuring instruments have their own shortcomings. **Appendix A** of this thesis is a Ferdi Working Paper (I16) I wrote during my first year as a PhD student. This paper assesses the strengths and limits of the main current approaches to measure corruption.

Due to their wide coverage in space and time, among other advantages, the composite indices as well as a number of indicators built from expert assessments - such as the corruption indicator produced by Business International Corporation (now Economist Intelligence Unit), or the PRS Group's *International Country Risk Guide* - have been used to measure the concept of corruption in many leading-edge macroeconomic articles (Mauro, 1995 ; Ades and Di Tella, 1999 ; Treisman, 2000 ; Fisman and Gatti, 2002).

Citizen and especially business surveys have also received considerable attention from economists interested in the microeconomic foundations of corruption. A few examples are Reinikka and Svensson (2006), Gauthier and Goyette (2014) or Fisman and Svensson (2007).

Surveys have the major advantage over other measurement instruments of enabling the matching of respondents' characteristics with their reported practice or perception of corruption. This useful feature of surveys for studying the microeconomic aspects of corruption conflicts with a serious limit which is that survey respondents are not always sincere in expressing their views or disclosing their experience of corruption, a phenomenon referred to as *reticence* in the economic literature. Reticence affects respondents' response behaviour on subjects like corruption that they consider sensitive.

Dealing with reticence

Even if the sensitivity of a survey question is partly subjective, it is generally accepted that a question is all the more sensitive from the respondents' point of view if their answer are compromising or may be interpreted as such (Tourangeau and Yan, 2007). For example, business executives who have never applied for a public contract may be more inclined to sincerely estimate corruption in public procurement than heads of firms that specialise in this activity, simply because those who have never had the opportunity to bribe cannot be personally compromised by their answer.

Confessing or simply suggesting the possibility of personal involvement in corruption is detrimental in several respects. Respondents may fear that the information revealed will be used against them or they may be afraid of being judged by the interviewer (Krumpal, 2013).

For Azfar and Murrell (2009), a reticent respondent is "*one who gives knowingly false answers with a non-zero probability when honest answers [...] could lead to the inference that the respondent might have committed a sensitive act.*"

According to this definition, reticent respondents will not always lie, but will edit some of their answers in order to avoid self-incrimination. Thus, reticence has the effect of negatively biasing the measure of socially undesirable behaviours such as corruption.

Studies on sensitive questions indicate that a number of survey features

influence reticence. Tourangeau and Yan (2007) provide an excellent review of the academic literature on the key results from this research area. One of the conclusions of this literature is that the phrasing of sensitive questions significantly alters respondents' response behaviour.

Phrasing questions so as to reduce reticence

Corruption survey designers have developed over time increasingly sophisticated techniques and strategies to phrase corruption questions so as to reduce reticence. To illustrate the logic of some of these methods, let's take the example of a survey that wishes to know how much firms pay in bribes to get connected to the power grid.

The simplest approach is to ask for the information outright:

In reference to your application for an electrical connection, did you pay a bribe? If yes, how much did you pay in bribes?

Since the question deals with respondents' personal experience of paying bribes, a number of respondents are likely to consider this question sensitive enough to decide not to answer it honestly.

A first reticence-reducing strategy is to put the respondent in the position of a victim of attempted extortion rather than a willing part in an illegal transaction. The phrasing can also infer that the respondent may have refused the demand for a bribe:

*In reference to your application for an electrical connection, was a bribe **expected or requested**?
If yes, how much was **expected or requested** in bribes?*

This strategy has an information cost: it excludes all transactions initiated by the respondent. Moreover, this wording modifies the nature of information gathered. It now counts unsuccessful bribe demands that did not result in a transaction, which was not the case with the original wording. Finally, another limit to this wording is that it is less objective than the previous one: if the transaction did not take place, how can one be absolutely certain of the other party's intentions?

A second strategy, called *soft wording*, uses a more positive terminology that aims at reassuring some respondents who are uneasy with the term *bribe* and therefore encourage them to answer honestly:

*In reference to your application for an electrical connection, was an **informal gift or payment** expected or requested?
If yes, how much was expected or requested in **informal gifts or payments**?*

In addition to the fact that this wording may help reduce reticence, another benefit is to clarify a term (*bribe*) whose meaning may be unclear to some respondents. The use of familiar words and expressions instead of technical jargon is an encouraged technique for wording survey questions (Iarossi, 2006).

The risk of altering the terminology of the question, however, is to drive the respondent further away from its original meaning. For instance, it is possible that the terms *informal gift or payment* used instead of *bribe* might be understood by some respondents as the sum of the gratuities and other voluntary remuneration paid to public officials after they have successfully completed their task, even if the realisation of the task was not preconditioned by the reception of those *gifts* or *payments*. Using softer words to refer to corruption creates the risk of reducing the potential of the question for capturing the information originally sought.

In order to reduce reticence even more, the question may also be phrased so as to implicitly presuppose the behaviour under measurement (Tourangeau and Yan, 2007):

*In reference to your application for an electrical connection, **how much** was expected or requested in informal gifts or payments?*

While rephrasing the question this way may seem harmless, it implicitly assumes that the respondent received at least one demand for *informal gifts or payments*. This wording is supposed to encourage some reticent respondents to answer honestly by implying that receiving such a demand is the rule rather than the exception.

In addition, a sensitive question may be asked indirectly in such a way that respondents can express a sincere opinion without incriminating themselves (Svensson, 2001):

*On average, how much do **establishments like this one** typically pay in informal payments or gifts when applying for an electrical connection?*

Here, the meaning of the question is profoundly altered. The information requested is no longer limited to the personal experience of respondents, but is rather about respondents' estimate of the typical behaviour of firms similar to their own. The interest of this wording lies in enabling respondents to distance their answer from their own actions. If respondents can correctly estimate the average amount spent on gifts and other informal payments by firms similar to theirs, the information obtained is useful, albeit different from that originally sought. The fundamental difference of this indirect phrasing compared to the previous ones is that, if answered literally, it provides no information about how much each respondent paid out.

Moreover, respondents' judgement of their competitors' behaviour may be biased. Delavallade (2012) mentions the possibility that the least competitive firms may overestimate their competitors' experience of corruption to justify their own difficulties. While conceding that answers to a question worded indirectly may represent a distorted view of other firms' behaviour, Delavallade chose to interpret those answers as an approximation of the respondents' actual experience.

Although questionable, it is still a commonly accepted practice in the microeconomic literature on corruption to consider that respondents' estimations of the average amount of bribes paid by firms similar to theirs is largely guided by their own behaviour (Hellman *et al.*, 2003, Svensson, 2003, Fisman and Svensson, 2007).

To further reduce reticence, a sensitive question may explicitly mention that the behaviour being measured is common, a strategy called *forgiving wording* (Tourangeau and Yan, 2007):

It is said that establishments are sometimes required to make gifts or informal payments to “get things done” when applying for an electrical connection. On average, how much do establishments like this one pay in informal payments or gifts for this purpose?

This additional sentence increases the length of the question. Iarossi (2006) suggested that longer questions are more effective than shorter ones in reducing reticence. Together with indirect wording, this strategy may nevertheless influence answers by suggesting that the average amount paid by firms is strictly positive.

Finally, the literature on sensitive surveys suggests that survey respondents are less reluctant to answer sensitive questions when they can phrase their answers in terms of percentages or categories (Iarossi, 2006):

*It is said that establishments are sometimes required to make gifts or informal payments to “get things done” when applying for an electrical connection. On average, **what percentage of the cost** of obtaining an electrical connection do establishments like this one pay in informal payments or gifts for this purpose?*

As Clarke (2011) noted, changing the answer format of such a question from monetary terms to percentages may have drastic consequences on the average amount estimated by respondents. It is not clear to what extent reticence is the cause of such results. For Clarke, it is more likely that this difference in estimates is due to the fact that some respondents make mistakes in calculating amounts in percentages.

Some typical wordings of corruption questions

Enterprise Surveys, a World Bank’s research instrument that evaluates various aspects of the business environment, including corruption, is a reference in the field of business surveys. These surveys have been carried out on approximately 155,000 firms from 148 economies since 2002¹. The *Enterprise Surveys* website lists about 450 research projects using this survey data, including 44 on the sole subject of corruption².

The standard questionnaire of *Enterprise Surveys* contains a question about bribes paid by companies for a power connection, with the same wording as the first (direct) approach presented in the previous section. Other corruption questions use one or more strategies to reduce reticence. One question in particular, which asks firms about the amount paid annually in bribes to public officials, includes all the approaches mentioned in the previous section. The exact wording of the question is the following (Kraay and Murrell, 2016):

It is said that establishments are sometimes required to make gifts or informal payments to public officials to “get things done” with regard to customs, taxes, licenses, regulations, services etc. On average, what percentage of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose?

A similar question is found in the questionnaire of the *Ugandan Industrial Enterprise Survey*, also carried out by the World Bank in 1998 (Svensson, 2003):

Many business people have told us that firms are often required to make informal payments to public officials to deal with customs, taxes, licenses, regulations, services, etc. Can you estimate what a firm in your line of business and of similar size and characteristics typically pays each year?

Other more recent business surveys, such as the *Crime and Corruption Business Surveys* from the United Nations Office on Drugs and Crime (Alvazzi del Frate, 2007), contain questions to assess administrative corruption experienced by businesses that are worded similarly.

¹<http://www.enterprisesurveys.org/About-Us> [Last viewed on 1 August 2017]

²<http://www.enterprisesurveys.org/research> [Last viewed on 1 August 2017]

The *more is better* criterion

Despite the fact that the phrasing of sensitive questions has a significant impact on the information gathered from reticent respondents, the choice of wording is seldom guided by studies methodically comparing different options and proposing the most relevant one.

This choice is often made by default on the basis of the *more is better* criterion, which predicts that the best wording is the one that produces the highest estimates of the under-reported behaviour (Tourangeau and Yan, 2007). Yet, as noted by Makkai and Mcallister (1992), this assumption is not always self-evident. Changing the wording of a sensitive question may actually modify the respondent's understanding of the question, which may lead to a measurement bias that causes the altered wording to produce higher estimates of the sensitive behaviour (Clarke, 2011).

Another interpretation of the *more is better* criterion that is often cited in the literature suggests that the wording of questions with the lowest non-response rates should be favoured (Preisendörfer and Wolter, 2014). For some researchers, the non-response rate is even used as the very definition of question sensitivity (Krumpal, 2013).

This interpretation suggests that reticent respondents are more inclined than candid respondents to decide not to answer a sensitive question, which yet again is not necessarily true. If the link between non-response and sensitivity is more obvious for “intrusive” questions such as respondents' income level or age, it is much less so for questions about under-reported behaviours like corruption.

When choosing not to answer a question, a respondent may be motivated by a lack of knowledge on the subject or by a more or less explicit wish not to disclose information that is compromising. Identifying the reason for the lack of response is not easy (Shoemaker *et al.*, 2002). Some respondents who refuse to answer may indeed pretend not to know the subject well enough to be able to answer it, while others who do not know the subject may wish to conceal their ignorance by claiming to decline the question because of its sensitivity.

Because of such uncertainty, it cannot be ruled out that non-response to a question deemed sensitive is caused by the respondent's embarrassment at answering it. Yet, since reticent respondents do not want sensitive behaviour to be inferred from their answers, a more effective strategy would be to lie, expressly denying the behaviour in question, rather than to refrain from answering the question.

Favouring question wordings with comparatively high response rates may therefore be counter-productive if the end goal is to reduce reticence. Moreover, as Iarossi (2006) noted, changing the format of a question in order to increase the response rate may also impact response accuracy. Other authors pointed to a trade-off between a high response rate and the relevance

of the data collected, with the idea that respondents who are most inclined to refrain from answering are also those whose answers are the least informative (Fricker and Tourangeau, 2010).

The validity of question phrasing

Studies assessing the suitability of standard phrasing of corruption questions are few. Lack of validation is worrying for the quality of corruption indicators produced from business surveys as they are currently being implemented.

Clarke's (2011) finding that firm managers estimate higher bribes when expressing them as a percentage of turnover rather than in monetary value is an illuminating illustration of this problem.

Under the *more is better* criterion, choosing to ask respondents to express their answer as a percentage of turnover may seem sensible if one considers that this answer format helps to reduce reticence. However, if it is the alternative interpretation proposed by Clarke that explains this observation, i.e. a systematic overestimation of amounts in percentages by some respondents, it is likely that this wording does not help improve the reliability of the data collected. Assessing the quality of questions phrased to estimate under-reported behaviour by their sole ability to produce high estimates may therefore be misleading.

Chapter II of my thesis builds on Clarke (2011) to assess the differences in bribe estimates by firm owners and managers when these amounts are expressed as a percentage of turnover or in monetary value. Using a survey carried out in Madagascar comparing two groups of businesspeople with identical average characteristics, I can confirm that average estimates of the magnitude of administrative corruption are significantly larger when expressed as a percentage of turnover compared to monetary value. This difference is also noticeable for other quantities of interest, such as corporate losses due to load-shedding and crime, and even the perceived frequency of load-shedding. After reviewing several explanations for this difference in estimates, I conclude that its only plausible cause is a systematic calculation error on the part of certain respondents. The respondent's experience as a business owner or manager seems to mitigate this error, but without eliminating it entirely. **Appendix B** is a Transparency International report I wrote together with Mr Joël Erick Rakotomamonjy presenting the methodology and main results of the business survey I conducted in Madagascar in November 2014.

Reticence and experience of corruption

Although reticence has long been recognised as a major threat to the reliability of corruption survey data, the identification of reticent respondents and study of their behaviour is a relatively new and uncharted topic of research. For long, microeconomic research on corruption has striven to reduce the impact of reticence without much focus on understanding its roots.

One of the fundamental questions that research has not yet been able to answer relates to the nature of the link between respondents' reticence to sincerely answer corruption survey questions and their personal experience of corruption. For Tourangeau *et al.* (2000), those most likely to lie to sensitive questions are those who are guilty. This view is shared by Azfar and Murrell (2009) for whom “a *natural assumption is that the reticent have something to hide*”. There is however little formal evidence to support this claim. A recent exception is Kraay and Murrell (2016) who found a positive link between experience of corruption and the likelihood of reticence using a business survey carried out in Peru.

For some researchers, a respondent guilty of corruption is not only more likely than others to knowingly lie by denying personal involvement in corrupt acts, but is also more likely to refuse to answer questions about corruption. In line with this practice, the World Bank, in computing a number of corruption indicators built from *Enterprise Surveys* data, considers refusal to answer by firm owners and managers as an implicit admission of guilt (The World Bank, 2016a). Similarly, Jensen *et al.* (2010) interpret lack of response as a mechanism used by some respondents involved in corruption to hide their behaviour, especially in environments repressing freedom of expression.

Chapter III of this thesis assesses the extent to which business owners and managers who have secured corruption-prone contracts in Madagascar behave as reticent respondents when answering a survey on public procurement. Using an innovative risk-approach methodology, I am able to show that the number of corruption-prone contracts secured by firms is positively associated with the probability that their owner or manager states that firms similar to theirs never pay any bribes to secure public contracts, a characteristic behaviour of reticent respondents. On the other hand, experience of corruption, as measured by the number of corruption-prone public contracts secured by firms, does not appear to relate to the likelihood that their owner or manager choose not to take part in the survey, or not to answer a question referring to their experience and perception of corruption. A review of the public procurement legislation in Madagascar I wrote as a guide for constructing the corruption risk indicators used in this Chapter is presented in **Appendix C**.

Identifying reticent respondents

In a seminal article published in 2009, Azfar and Murrell proposed a technique for identifying reticent respondents. This technique is based on the randomised response questioning (RRQ) approach, a reticence-reducing strategy originally developed by Warner (1965). This strategy involves asking respondents to toss a coin heads-or-tails. Whenever the outcome of the toss is a tail, respondents are instructed to systematically answer in the affirmative. They are requested to answer the question sincerely if the toss gives a head. Since nobody, except the respondent, knows the outcome of the toss, it is impossible to infer from an affirmative answer that the respondent is admitting guilt over the sensitive behaviour.

As this strategy enables respondents to hide their response, the logic is that they should be less reluctant to answer the question honestly. Since the probabilities of the two outcomes of a fair toss are fifty percent each, it is nevertheless straightforward to determine the prevalence of the sensitive behaviour in the population.

Azfar and Murrell noted that some businesspeople do not comply with the rule and answer in the negative even when the toss requires them to answer in the affirmative. They then reversed the logic of the approach so as not to reduce reticence but to identify respondents whose patterns of answers indicate that they are very likely to be reticent.

This technique has since been used in several papers to identify reticent respondents in business surveys (Clausen *et al.*, 2010, Jensen and Rahman, 2011). It has, however, two major drawbacks. First, it slows down and complicates the survey procedure by requiring the interviewer to explain the RRQ rules to the respondent, and the respondent to toss a coin before answering each RRQ question. It is plausible that some respondents are reluctant to answer RRQ questions, even if they are not reticent to answer sensitive questions about corruption, if they are unwilling to comply with the rule because they do not understand it or are disturbed by its peculiarity. The second drawback is that the RRQ technique generally uses questions about sensitive behaviours others than corruption such as tax evasion (Clausen *et al.*, 2010). Here, the implicit assumption is that it is not the subject of corruption that generates reticence, but that some respondents are intrinsically reticent to answer sensitive questions, while others are not. However, it may be that reticence is in fact very specific to the subject at hand: business owners and managers may be reticent to discuss corruption but not tax evasion if they are only guilty of the former.

Chapter IV of this thesis proposes another technique for identifying reticent respondents which relies on indirect questioning. Using a theoretical model of response behaviour, I find that it is highly unlikely that respondents sincerely believe that firms similar to theirs spend a zero average amount in bribes. Business owners and managers who provide this answer are con-

sidered reticent. Identifying reticent respondents then makes it possible to correct indicators for the frequency of administrative corruption in the population of firms. This correction is applied to a survey of 382 new firms I carried out in Madagascar in March 2016.

The **General conclusion** of the thesis provides recommendations for improving the measurement approach to corruption based on business survey data and proposes directions for future research in this area.

Chapter 2

The same, only different: estimating the magnitude of bribery in business surveys

***Abstract:** As first shown in Clarke (2011), World Bank's Enterprise Surveys data suggest that the magnitude of bribery estimated by firm owners and managers in Africa is considerably higher when estimates are formulated as a percentage of turnover rather than in monetary value. This Chapter confirms these findings with a randomized experiment carried out in Madagascar with 436 firm owners and managers and provides additional evidence that the observed gap in estimates between these two answer formats is caused by a measurement error on the part of survey respondents. Experience in running a business appears to mitigate error but without eliminating it completely.*

2.1 Introduction

Microeconomic research on corruption commonly uses survey data to measure bribery (Reinikka and Svensson, 2006 ; Sequeira, 2012). Despite evidence that respondents to surveys are not always candid when discussing sensitive behaviour such as bribery (Tourangeau and Yan, 2007), only a limited number of studies have intended to estimate the extent to which this lack of candour affects the reliability of bribery indicators constructed from survey data (Azfar and Murrell, 2009 ; Clausen *et al.*, 2010 ; Kraay and Murrell, 2016 ; Jensen and Rahman, 2011).

Using data from the World Bank's *Enterprise Surveys* carried out in

15 countries in sub-Saharan Africa between 2006 and 2007¹, Clarke (2011) noticed that a slight change in the answer format to a question about the cost of bribery considerably affects the responses obtained from respondents.

Average estimates by firm managers of the amount requested by public officials to firms similar to theirs in order to make sure that “things get done” lie between 2.5 percent and 4.5 percent of turnover for these 15 countries². With only a few exceptions, *Enterprise Surveys* implemented before 2005 requested respondents to estimate this amount as a percentage of turnover (Clarke, 2011). Since 2005, surveyees have been offered the options of answering the question either in monetary terms or as a percentage of turnover. Clarke’s striking observation is that the average estimates in percentage of turnover are 4 to 15 times higher than estimates in local currency for the 15 sub-Saharan countries investigated. Firm managers who estimated a positive amount of bribes and expressed this amount as a share of turnover reported an average amount of bribes between 4 percent and 8 percent of turnover in most countries. Those who estimated a positive amount of bribes in monetary value evaluated them on average at 0.5 percent to 1.0 percent of turnover³.

In his paper, Clarke convincingly dismissed the possibility that observable or unobservable firm characteristics could explain this gap. He also showed that the higher estimates of bribery for firms answering as a percentage of turnover could not result from the influence of extreme values or of more frequent interactions with public officials.

Interestingly, Clarke noted that the response format also appear to influence answers to less sensitive questions. Respondents to *Enterprise Surveys* carried out in sub-Saharan Africa in 2006 and 2007 consistently reported lower losses due to load-shedding and crime, as well as lower security spending when they expressed these amounts in monetary value rather than as a percentage of sales⁴.

Clarke concluded that the only plausible explanation for the difference in the magnitude of bribery estimated in monetary value and as a per-

¹The fifteen countries are Angola, Botswana, Burundi, Democratic Republic of the Congo, Gambia, Ghana, Guinea-Bissau, Guinea-Conakry, Kenya, Mauritania, Namibia, Rwanda, Swaziland and Tanzania.

²The question was worded as follows: “*We’ve heard that establishments are sometimes required to make gifts or informal payments to public officials to get things done with regard to customs, taxes, licenses, regulations, services, etc. On average, what percentage of total annual sales or estimated annual value do establishments like this one pay in informal payments/gifts to public officials for this purpose?*” (The World Bank, 2016a).

³Clarke mentioned that this difference is statistically significant at 5 percent for all countries where at least five firms responded to the question as a percentage of turnover and at least five firms responded in monetary value.

⁴Although statistically significant, it should be noted that the difference in estimates between the two answer formats is smaller in size for these other costs compared to bribery.

centage of turnover is that firm owners and managers tend to overestimate percentages.

Enterprise Survey questions allowing responses in monetary value or as a percentage of turnover, including the one on bribes paid to public officials, explicitly mention both accepted answer formats. Respondents should therefore be in a position to select the answer format they favour⁵. As Clarke (2011) pointed out, however, it is not clear to what extent the choice of the answer format is due to respondent preferences, interviewer preferences, question wording, or questionnaire layout.

Therefore, it may well be that respondents' choice of answer format is a function of their answer. In particular, businesspeople who want to report less bribes could be more inclined to express this amount in monetary value, whereas those wanting to report a larger amount are keen to report it as a percentage of turnover for convenience. This behaviour could explain the observed relationship between the answer format and estimates of bribery.

This paper intends to reveal whether firm owners and managers are truly influenced by the answer format when estimating the magnitude of bribery by randomly assigning to respondents the two competing answer formats. The experiment was designed as part of a business survey implemented by the NGO Transparency International in November 2014⁶. The main objective of the survey was to identify constraints to setting up and running firms operating in Antananarivo, the capital city of Madagascar.

The rest of the paper is organised as follows: Section 2.2 describes the survey, Section 2.3 assesses the influence of the answer format on firms' estimates of the magnitude of bribery, Section 2.4 aims at explaining this influence with an empirical model and Section 2.5 offers concluding remarks.

⁵The answer as a percentage of turnover is usually favoured by respondents to *Enterprise Surveys* when the two response options are available. For all fifteen *Enterprise Surveys* assessed in Clarke (2011), respondents who estimated a positive amount of bribes were over 70 percent to answer the question as a percentage of turnover.

⁶Although more focused on the topic of corruption than the World Bank's *Enterprise Surveys*, the Transparency International survey questions matching those of the *Enterprise Surveys* were systematically phrased in the same way in order to make the results as comparable as possible. An *Enterprise Survey* was carried out in Madagascar between November 2013 and May 2014, a few months before Transparency International's survey. This *Enterprise Survey* has the same specificity as those carried out in sub-Saharan Africa in 2006 and 2007, i.e. estimates of the annual amount that firms need to pay in gifts and other informal payments to officials to "get things done" are higher when they are reported as a percentage of turnover. Respondents who answered the question in monetary value and provided a positive estimate of bribery evaluated this cost to be 2,080,000 Ariary on average (excluding extreme values distant from more than three standard deviations from the mean value), equivalent to 1.3 percent of their turnover. Those who estimated positive bribes as a percentage of turnover (74 percent of respondents overall) gave an average estimate of 8.6 percent (again outliers excluded). The difference in estimates between the two answer formats is significant at 1 percent.

2.2 The data

The survey used for this research interviewed 436 business owners and managers from Madagascar about their experience and perception of corruption in their country (Lesné and Rakotomamonjy, 2015⁷). The first phase of the survey targeted 247 firms created within two years preceding the survey in order to identify the general constraints for setting up a business in Madagascar. The second phase surveyed 189 firms already established for at least two years and with at least ten employees. Both phases of the survey were administered in face-to-face by the same team of 10 interviewers⁸. Most questions were common to the two phases of the survey.

Two versions of the survey questionnaire were randomly allocated to the respondents. The first asked respondents to estimate the average share of the annual turnover of firms similar to theirs that those firms must spend, on average, on gifts and other informal payments to public officials to “get things done”⁹. The other version of the questionnaire asked respondents to formulate this amount in monetary terms¹⁰.

Respondents who had to estimate bribes as a percentage of turnover (*monetary value*) were also instructed to estimate ten other amounts of interest in percentage (*value*) throughout the questionnaire¹¹.

Two questions asked firm owners and managers about their annual losses due to load-shedding and crime, to be estimated in monetary value or as a percentage of their turnover. Six other questions asked respondents about bribes paid by their firm for power and water hook-ups or to issue building permits, title deeds or import licenses during the two years preceding the survey. These amounts had to be expressed by the respondent either in monetary value or as a percentage of the total cost of those procedures. Another question asked respondents to estimate the monetary value or the average percentage of the cost of litigation that firms like theirs have to spend, on average, to win a case in court. Finally, one question asked firm owners and managers about their perception of the frequency of load-shedding in the 12 months preceding the survey, to be answered in number of days or as a percentage of days in the year. The question on bribery was asked toward the end of the survey, after all these questions¹².

⁷The Transparency International report written by Lesné and Rakotomamonjy (2015) is annexed to this thesis (see Appendix B).

⁸Pages 30-31 of Lesné and Rakotomamonjy (2015) present the survey methodology.

⁹The exact question was: On average, what percentage of annual turnover do firms like yours pay in informal payments and gifts to public officials to “get things done”?

¹⁰The exact question was: On average, how much do firms like yours pay annually in informal payments and gifts to public officials to “get things done”?

¹¹Interviewers were instructed to ask respondents, if necessary, to rephrase their answer in the format provided by the version of the questionnaire that was allocated to them.

¹²Most of these questions were only asked to respondents who had previously admitted

Table 2.1 shows the characteristics of the respondents and their firms according to the version of the questionnaire administered to them¹³. Descriptive statistics confirm that the observable average characteristics of the two groups of respondent are statistically equivalent.

2.3 The influence of the answer format on estimates of bribes and other costs

2.3.1 Average estimates of bribes per answer format

On average, survey respondents estimated that firms similar to theirs must spend 6.2 percent of their turnover in informal payments and gifts to public officials annually, to “get things done”¹⁴. Translated into percentage of turnover, the average estimate of respondents whose version of the questionnaire required an answer in monetary value is 7.7 times lower than the average amount reported by respondents who had to answer the question as a percentage of turnover, a difference significant at 1 percent (Table 2.2).

These results are in line with Clarke’s (2011) observations based on *Enterprise Surveys* carried out in sub-Saharan Africa in 2006 and 2007. Owners and managers of firms operating in Madagascar provide a much higher estimate of the magnitude of bribery as a percentage of turnover than in monetary value¹⁵.

at least one recent interaction with the corresponding public service. Only the questions on bribery, load-shedding frequency, and firm losses due load-shedding were asked to all respondents. The response rate to each of these questions, with the exception of those asked indiscriminately to all respondents and the one asking about firm losses due to crime, never exceeds 12 percent of the survey sample. For this reason, only questions that were asked to all respondents and the question about losses resulting from crime are used in the analyses presented in the rest of this Chapter.

¹³Given the relatively small sample size of the second phase of the survey, Transparency International decided to focus on the version of the questionnaire expressing amounts as a percentage of turnover in order to obtain sufficient statistical accuracy for some of its indicators. As a result, of the questionnaires allocated to the 189 firms who took part in the second phase, 60 percent were of the percentage type and 40 percent were of the monetary value type. This paper takes into account this specificity of the sampling design by systematically including in the analyses a weighting of observations corresponding to the inverse of their likelihood of being drawn. This correction was applied using the *Stata svy* environment and the *pweight* weighting option (StataCorp, 1985). For the first phase of the survey, both versions of the questionnaire were allocated to the 247 respondents on a strict parity basis, and no correction was required.

¹⁴A similar question is asked in the standard *Enterprise Survey* questionnaire, the only difference being that Transparency International’s survey question requires a specific answer format (monetary value or percentage of turnover) whereas the *Enterprise Survey* questionnaire allows for both. As for the *Enterprise Surveys*, extreme values – over or under three standard deviations from the mean – are discarded from the analysis.

¹⁵The ratio between average estimates formulated as a percentage of turnover and in

As both sub-samples are similar in all respects except for the questionnaire version that was assigned to them, a first conclusion drawn from this experiment is that the magnitude of bribery as measured with survey reports from firm owners and managers is highly sensitive to whether estimates are formulated in monetary terms or as a percentage of turnover.

2.3.2 The distribution of estimates of bribery per answer format

The distribution of estimates of the magnitude of bribery is very asymmetrical. The proportion of respondents who believe that bribery is totally non-existent is high among those who agreed to answer the question: 25.0 percent for the version of the questionnaire requesting an answer in monetary value and 39.4 percent for the version asking for an answer as a percentage of turnover¹⁶.

Estimates of bribes expressed in monetary value, once converted as a share of turnover, appear to be heavily concentrated under 1 percent, unlike estimates formulated by respondents in percentage of turnover which are much more disparate (Figure 2.1). Estimates as a percentage of turnover also reach higher values¹⁷.

The gap between estimates of bribery expressed in monetary terms and as a percentage of turnover is noticeable for both low and high estimates, as illustrated by the first panel of Figure 2.2 which displays percentiles of strictly positive estimates of bribery for the two versions of the questionnaire. The ratio between answers as a percentage of turnover and in monetary value for each percentile of the distribution of positive estimates is presented in the second panel of Figure 2.2. This ratio is systematically higher than one, confirming that the difference in estimates due to the answer format is not limited to a specific part of the distribution of answers.

monetary terms (7.7) is similar to that of the *Enterprise Survey* carried out in Madagascar in 2013 (6.8). It should be noted, however, that this ratio obtained with *Enterprise Surveys* omit null responses as they are not attributable to one or the other of the answer formats. If the analysis of the Transparency International survey data is similarly limited to strictly positive estimates of corruption, the ratio of the average estimates of bribery as a percentage of turnover and in monetary value increases to 9.6.

¹⁶The difference in the proportion of null estimates in the two versions of the questionnaire is statistically significant at 10 percent.

¹⁷High estimates of bribery as a percentage of turnover is not unique to the Transparency International survey. Among the 15 *Enterprise Surveys* carried out in Sub-Saharan Africa in 2006 and 2007 mentioned in Clarke (2011), all but one (Guinea Bissau) display a least one estimate of bribery as a percentage of turnover equal or higher than 30 percent.

Table 2.1: Characteristics of respondents and their firms, per questionnaire version

Proportional share or Average value	Monetary value	Percentage	Difference is null	All sample	Number of observations
Respondent owns the company	51.5%	45.7%	0.235	48.6%	432
Business sector : Retail trade	35.7%	41.3%		38.5%	
Business sector : Manufacturing	13.1%	13.0%	0.464	13.0%	435
Business sector : Services	51.3%	45.8%		48.5%	
Firm has less than 2 years	62.3%	61.8%	0.913	62.1%	436
Number of employees (in logarithm)	1.94	2.00	0.667	1.97	436
Firm's turnover (in billion Ariary)	1.01	0.95	0.885	0.98	297

Tests used for categorical variables are based on Pearson's χ^2 statistic with Rao and Scott's (1984) correction. Tests for continuous variables are Adjusted Wald F tests. P-values are reported.

Table 2.2: Average estimates of bribes, per questionnaire version

Estimates as a share of turnover	Average estimate	Linearised Standard error	Number of observations
Answers in monetary value	1.19	0.43	56
Answers as a percentage of turnover	9.20	1.41	110
All Answers	6.17	0.95	166

The p-value of the Adjusted Wald test for the difference between estimates of bribery as a percentage of turnover and in monetary value is inferior to 0.001.

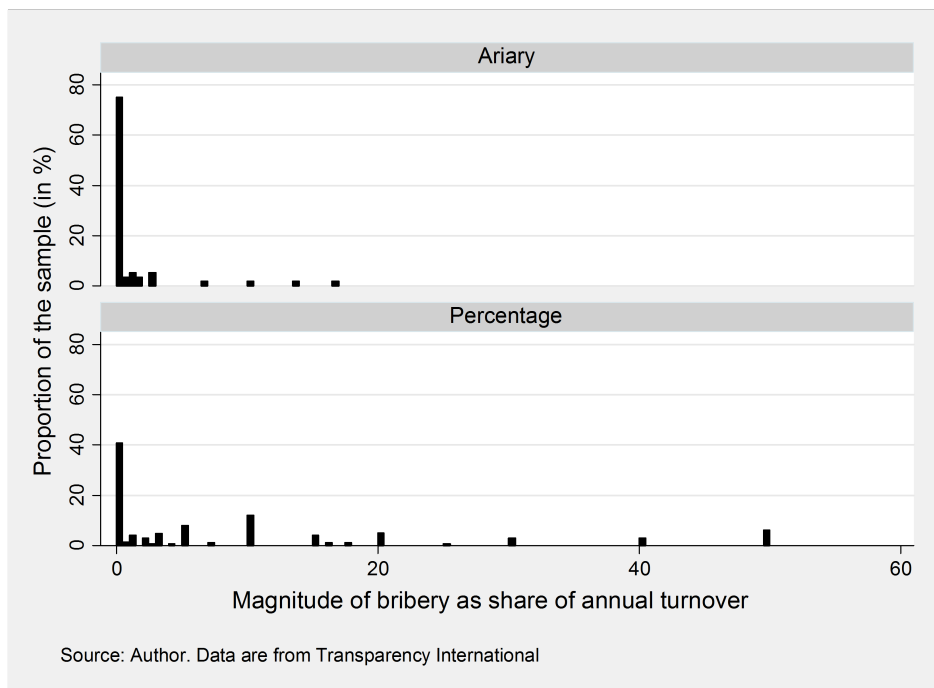


Figure 2.1: Frequency distribution of bribe estimates, per answer format

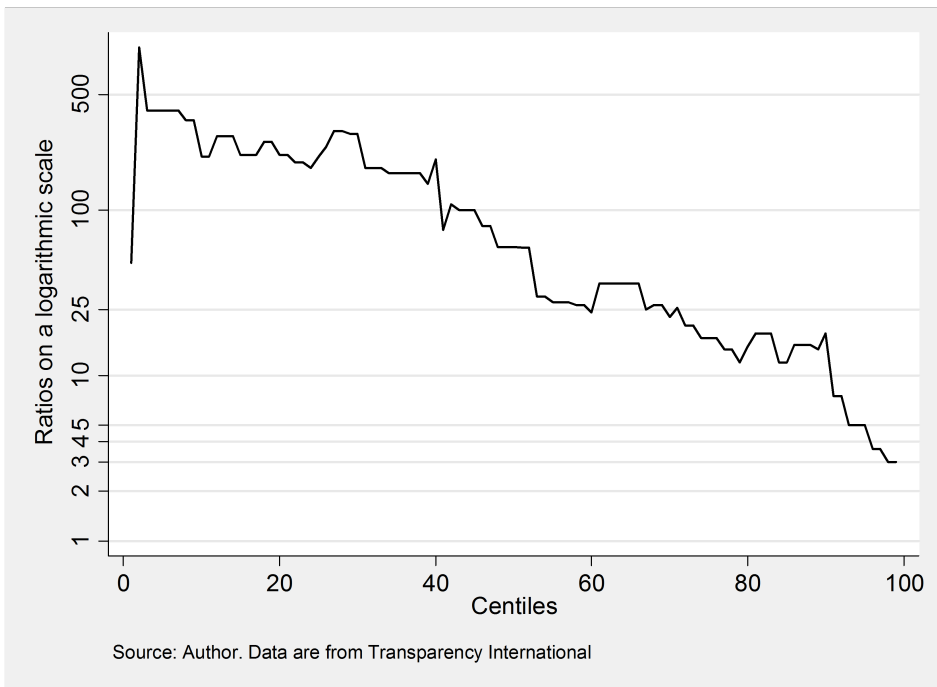
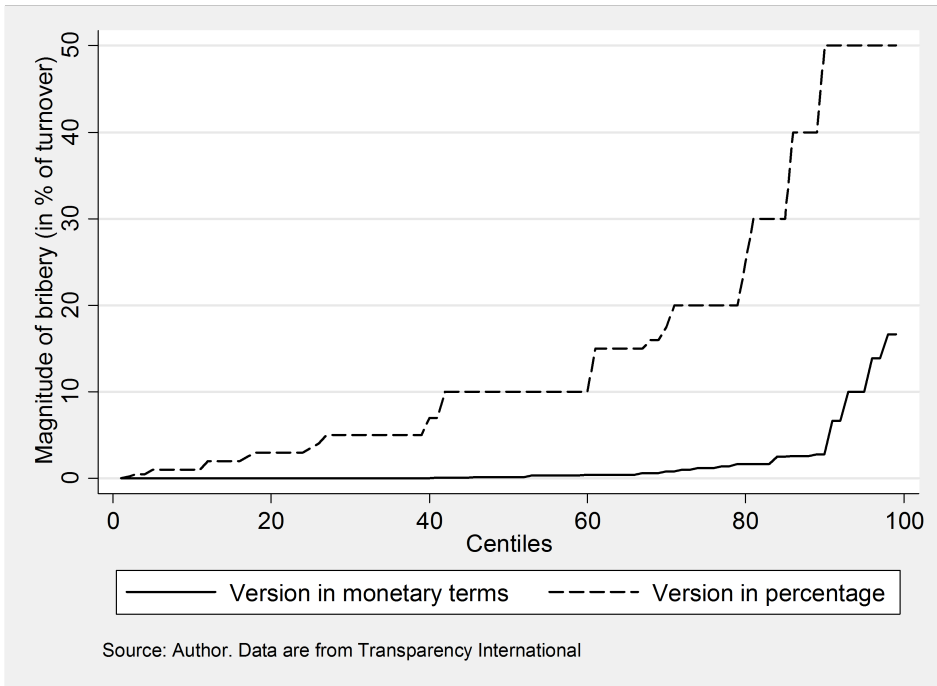


Figure 2.2: Percentiles of bribe estimates, per answer format (*first panel*) and ratio between estimates as a percentage of turnover and in monetary value, per centile of the distribution of estimates (*second panel*)

Although the gap is noticeable across the entire distribution of estimates, it appears to be more pronounced for firms reporting a positive but low level of bribes. The ratio of average estimates expressed as a percentage of turnover and in monetary value, excluding zero estimates, decreases from 210 to 18 between the first and the ninth decile of the answer distribution.

2.3.3 The influence of the answer format on estimates of other costs

The observed gap between the average estimates in monetary terms and as a percentage of turnover is not specific to bribes paid by firms to public officials. It is also apparent for firms' annual losses due to load-shedding and crime¹⁸. Those losses are of a higher magnitude than bribery: 11.1 percent and 10.1 percent of average firm turnover for load-shedding and crime, respectively, compared to 6.2 percent for bribery. Losses due to crime estimated as a percentage of turnover are 2.7 times higher than when estimated in monetary value¹⁹. This ratio is 6.0 for losses due to load-shedding²⁰, to be compared with a ratio of 7.7 for bribery (Figure 2.3).

The observation that the answer format also affects estimates of less sensitive costs than bribery led Clarke (2011) to conclude that the sensitivity of the topic of corruption - or the phrasing of the question - cannot alone explain the difference in estimates. Clarke nonetheless noted from *Enterprise Surveys* data that despite being statistically significant, the difference in estimates is generally smaller for these other costs. As Figure 2.3 shows, this is also the case for the Transparency International survey.

More than the sensitivity of the question topic, it may be its abstractness that explains the influence of the answer format on estimates. Losses caused by theft, vandalism, fraud or scams may be less frequent, more striking and therefore more set in respondents' minds than losses caused by power cuts - difficult to measure because they affect many dimensions of the firm's activity - or bribery, which is for many firms of common occurrence.

¹⁸While the question on bribery asked respondents to estimate the amount of bribes paid by firms "similar to theirs", load-shedding and crime questions relate to costs incurred by the firm itself.

¹⁹Unlike bribery and losses due to load-shedding, the estimation of firm losses due to crime was preceded by a question asking managers if they incurred losses from theft, vandalism, fraud or scams during the 12 months prior to the survey. Approximately half of the managers (49.7 percent) gave a positive answer to this question. They alone had to estimate their firm losses due to crime. The observable characteristics of firm owners and managers who see themselves as victims of criminal acts and of their businesses are similar to the average of respondents, except for a higher proportion of sole proprietorships and businesses operating in the trade sector among the victims.

²⁰Estimates of losses due to load-shedding and estimates of losses due to crime expressed as a percentage of turnover and in monetary terms are significantly different at 1 percent.

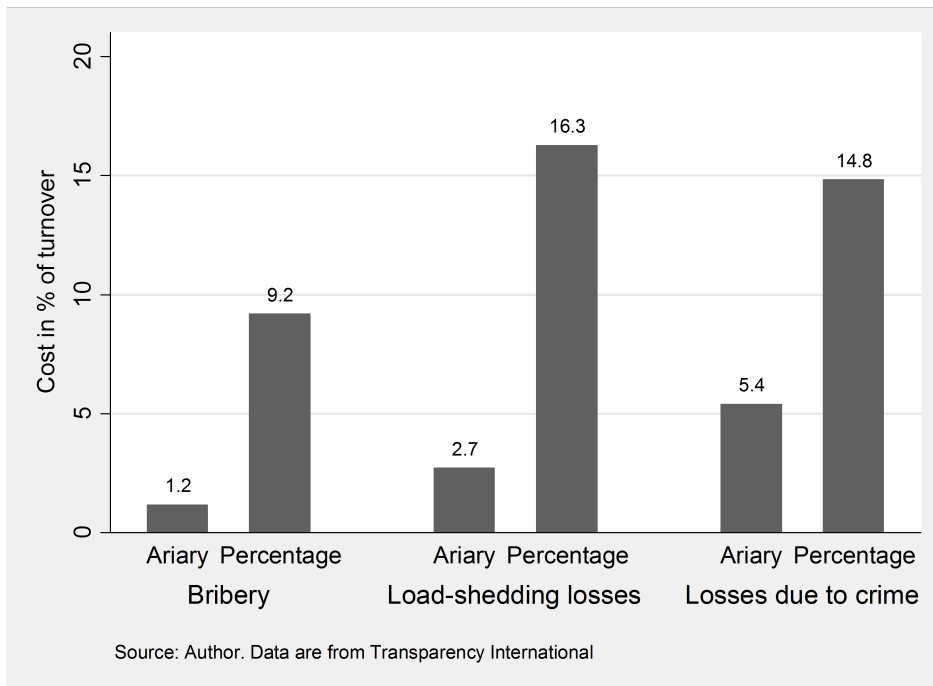


Figure 2.3: Average firm costs, per answer format

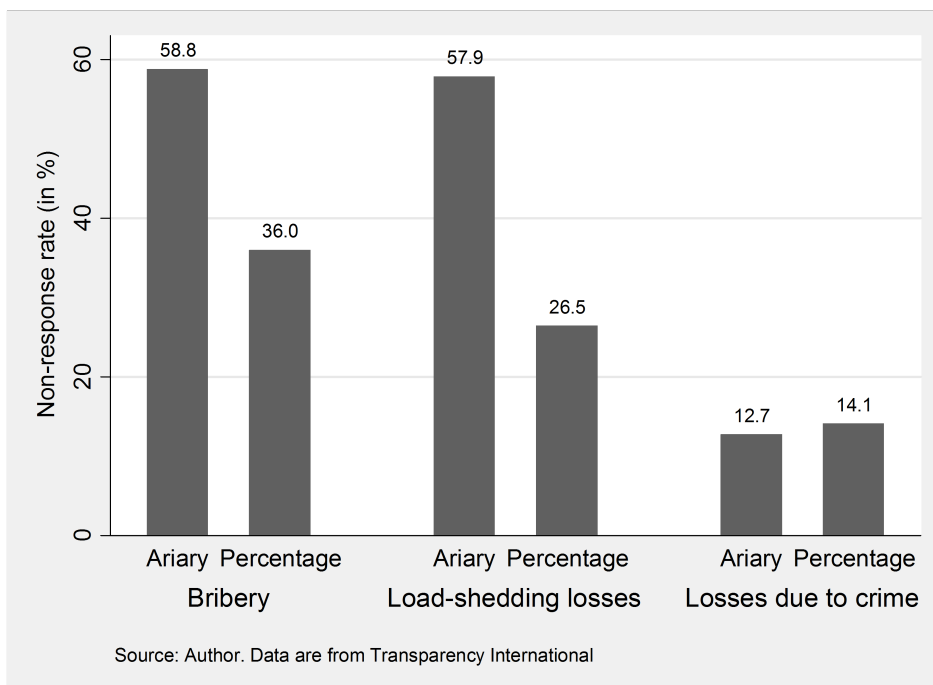


Figure 2.4: Non-response rates to questions about costs, per answer format

2.3.4 The influence of the answer format on the absence of response

The question on bribery exhibits a high non-response rate: 47.4 percent of surveyees chose not to answer that question²¹. Non-response, justified by the respondent either as refusal to answer or ignorance of the correct answer, is higher for the questionnaire version asking respondents to estimate bribery in monetary terms (58.8 percent versus 36.0 percent). The difference in non-response rates between the two versions of the questionnaire is significant at 1 percent for this question (Figure 2.4).

The influence of the answer format on the response rate is even more pronounced for the question about firm losses caused by load-shedding. The non-response rate for the monetary version of the questionnaire is more than twice (57.9 percent versus 26.5 percent) that of the version in percentage. In contrast, the proportion of respondents who did not answer the question on firm losses due to crime in the two versions of the questionnaire is almost identical: 12.7 percent for the version of the questionnaire in monetary terms and 14.1 percent for the questionnaire in percentage. Non-response to this question about crime losses is also much less common than for the other two questions asking about firm losses caused by load-shedding and bribery.

As previously suggested, firm owners and managers may have a more accurate idea of their losses due to criminal acts, compared to how much power cuts and bribery have cost their firm. This may account for at least part of the observed difference between the response rates to these questions.

For questions about bribery and load-shedding losses, the answer format has a significant influence on the decision to provide an answer. Some firm owners and managers apparently prefer to decline answer those questions in monetary terms, even though they would probably have provided an answer if they had been asked to formulate it as a percentage of turnover.

Evaluating losses due to load-shedding and estimating the magnitude of bribery – two already demanding cognitive processes – might require even more thought in monetary value than as a percentage of turnover. This additional reasoning effort could discourage some surveyees from answering these questions. Consistent with this, Iarossi (2006) proposed that “*[i]t might be easier for respondents to provide answers in categories or percentages rather than in absolute values*”. Preference for this answer format is confirmed by the slightly higher level of cooperation experienced by interviewers from surveyees who responded to the version of the questionnaire in percentage²².

²¹The non-response rate to the same question in the 2013 *Enterprise Survey* carried out in Madagascar is 79.7 percent. Given their sensitive nature, questions assessing perceptions of bribery often exhibit high non-response rates.

²²The level of cooperation, defined as the respondent’s willingness to answer sincerely all the survey questions, was noted by the surveyors at the end of their interviews on a

2.4 An empirical model

2.4.1 What we have learned so far

On average, firm owners and managers estimated bribes paid to public agents by firms similar to theirs to be 7.7 times higher when they formulated their answer as a percentage of turnover rather than in monetary value.

A significant difference is observed throughout the distribution of positive estimates, but in a magnitude that decreases as estimates of bribery rise. Also, the difference in estimates as a percentage of turnover and in monetary value is not specific to the question asking survey respondents to estimate how much firms similar to theirs must pay in bribes to “get things done”. Estimates as a percentage of turnover are also significantly higher than estimates in monetary value for firm losses due to load-shedding and crime. The more abstract the measured concept is, the larger is the gap between estimates as a percentage of turnover and in monetary value.

Respondents generally favour the answer format in percentage. The non-response rate to the bribery and load-shedding questions is significantly lower for this version of the questionnaire.

2.4.2 Where may the difference in estimates come from?

The influence of the answer format on estimates of the magnitude of bribery may be due to respondents overestimating amounts expressed as a percentage of turnover, underestimating them in monetary value, or a combination of both types of error²³. The first type of error may originate from the fact that some business owners and managers are not comfortable in manipulating percentages, as Clarke (2011) suggested. The second type of error may result from the fact that some survey respondents answering in monetary value are not exhaustive in their estimations, merely focusing on a few cases where bribes or other costs were particularly noticeable, leaving out information that may be relatively harder to gather for the respondent, although still relevant for the overall estimation requested by the question.

scale from 0 (no cooperation) to 10 (full cooperation). The average cooperation score for surveyees who had to answer the questionnaire in monetary terms was 7.3 and 7.7 for those who answered the questionnaire in percentage. The difference is significant at 10 percent.

²³Interviewers rated similarly their perceived reliability of estimates produced by respondents in percentage and in monetary value. Using a calculator was no more frequent among respondents of one version of the questionnaire than the other. Paper and pen were use more often by respondents who were allocated the questionnaire in monetary terms (5.5 percent versus 2.3 percent, significant at 10 percent). Conversely, a larger share of respondents in percentage did consult their records compared to respondents in monetary terms (19.2 percent versus 13.1 percent, significant at 10 percent).

Firm owners and managers with less experience in running a business may be more subject to making errors when estimating the magnitude of bribery in monetary value or as a percentage of turnover, being perhaps less used to juggling figures. The first phase of the Transparency International survey specifically targets newly-created firms, providing a useful framework to test this hypothesis.

2.4.3 The model

Using Transparency International's survey, I examine whether experience in running a business influences the relationship between the answer format and estimates by business owners and managers of the amount of bribes paid annually by firms similar to theirs.

Since a significant share of respondents estimated that firms do not need to pay any bribes, a two-part model for mixed discrete-continuous outcomes is appropriate. Two-part models are limited dependent variable models exhibiting a non-trivial mass of observations reaching a value that is the lower bound those observations can possibly assume.

In my two-part model, the probability of observing a strictly positive outcome is modelled using a binary choice model. The second part of the model fits a regression model on the continuous range of positive outcomes. This two-part model is a flexible alternative to the Tobit model in some instances when the latter is unsuitable (Cragg, 1971). This is the case when a key assumption of the Tobit model does not hold. In a Tobit model, the same mechanism must explain both the binary outcome (positive versus zero) and the magnitude of the effect on positive outcomes. Consequently, any explanatory variable that affects positively the probability of obtaining a non-zero outcome must also have a positive effect throughout the range of non-zero outcomes (Wooldridge, 2010).

As shown in the previous section, the proportion of zero outcomes is higher for the version of the questionnaire asking surveyees to estimate bribes as a percentage of turnover. Conditional of the estimation being strictly positive, estimates of the magnitude of bribery as a percentage of turnover are higher, on average, than estimates in monetary terms. Therefore, in this case, the common mechanism hypothesis of the Tobit model is unlikely to hold. Two-part models, also called hurdle models in the case of count variables (Cameron and Trivedi, 2013), allow for different processes to explain the probability of a positive versus zero outcome and to model the function explaining strictly positive outcomes.

The two-part model used in this Chapter combines a probit model with a linear regression model on strictly positive estimates of bribery. Both parts are modelled using as explanatory variables the firm's sector (retail trade, manufacturing, services) and the logarithm of the number of employees. The same explanatory variables were used in Clarke (2011) as a base model

to control for firms' observable characteristics when assessing differences in estimates of bribery in monetary value and as a percentage of turnover on *Enterprise Surveys* data.

Columns 1 and 2 of Table 2.3 show the coefficients of the probit regression of the zero versus positive estimates of bribery and the OLS regression on positive estimates as a function of the base model explanatory variables. Column 3 reports average marginal effects. Retail trade firms estimate bribes as a percentage of turnover that are 4.4 percentage points higher, on average, than firms operating in the services and manufacturing sectors (significant at 10 percent). The size of the firm, measured by the logarithm of the number of employees, is not a significant predictor of bribes.

Unsurprisingly, asking respondents to estimate bribes as a percentage of turnover rather than in monetary value increases significantly their average estimation. Columns 4 to 6 of Table 2.3 display the coefficients of the probit and OLS regressions as well as average marginal effects for all explanatory variables from the base model to which is added a dummy variable indicating the version of the questionnaire assigned to the respondent (augmented model). Answering as a percentage of turnover increases estimates of the amount of bribes paid by 7.7 percentage points, all other things held equal. The null hypothesis that the average marginal effect of the answering format on estimates of bribery is 0 is rejected at 1 percent²⁴.

Adding a binary variable coding 1 if the firm has been created less than two years ago, and 0 if the firm has two years or more gives us the full model presented in columns 1 to 3 of Table 2.4. Being the owner or the manager of a newly created firm, a proxy indicator for the respondent's experience in running a firm, does not affect the likelihood of respondents admitting the existence of bribery. It does, however, significantly increase the estimation of the magnitude of bribery for those respondents who estimated a positive amount of bribes. The average marginal effect for this variable is large, comparable in size to that of the questionnaire version: respondents owning or managing a new firm estimate bribes to be 7.6 percentage point higher, *ceteris paribus*, than respondents whose firm had been established at least two years before the survey was carried out.

If respondents' experience in running a business is correctly measured by their firm being at least two years old, this result could mean that, all other things held equal, respondents with less experience estimate more bribes. Alternatively, this result could simply come from the fact that new firms pay more bribes than older firms.

²⁴In addition, the augmented model confirms the unsuitability of the Tobit model as an estimation model in this present case since the version of the questionnaire has an opposite effect on the propensity to admit bribery and on the estimation of bribes conditional on the respondent admitting the existence of bribes.

To decide between those two differing interpretations, an interaction term between the version of the questionnaire and the “new firm” binary variable is added to the full model. Since assessing the statistical significance of an interaction term in a non-linear model is not straightforward (Ai and Norton, 2003; Greene 2010), I focus on the second step of the two-step model, i.e. on the outcomes of the linear regression run on strictly positive estimates of bribery²⁵. As Table 2.4 shows, the interaction term is large in magnitude and statistically significant. Among respondents admitting that firms like theirs must pay bribes, owners and managers of newly created firms who answered as a percentage of turnover provided estimates of bribery that are 11.8 percentage points higher than those who answered the question in monetary terms, *ceteris paribus*. This is almost twice the average estimation of the magnitude of bribery in the sample (6.2 percent).

With the interaction term, the “new firm” binary variable is no longer significant on its own, suggesting that the positive effect of that variable in the full model was not due to the fact that the cost of bribery is larger for younger firms than for older ones. The questionnaire version variable is still highly significant even after the inclusion of the interaction term, but the magnitude of the average marginal effect has been reduced in half, from 13.4 to 6.3 percentage points. Although the business experience of respondents as measured by the two-year cut-off for their firm’s age appear to explain part of the gap between estimations of bribery as a percentage of turnover and in monetary terms, the answer format is still strongly associated with the magnitude of estimates even for older firms.

The gap in estimates of bribery as a percentage of turnover and in monetary terms is wider for new firms. This is also the case for the estimation of firm losses due to crime, as shown by Figure 2.5. The ratio between estimates of crime costs expressed as a percentage of turnover and in monetary value is 3.1 for new firms and 1.9 for order firms²⁶. However, for firm losses caused by load-shedding, the ratio of average estimates as a percentage of turnover and in monetary terms is not larger for new firms (5.9) than for old firms (6.3).

²⁵The proportion of strictly positive estimates of bribery among surveyees who did not decline to answer the question is superior for the questionnaire in monetary terms for both younger and older firms, in a magnitude that is comparable (79.6 percent versus 70.9 percent for new firms, and 82.9 percent versus 71.5 percent for older firms). This result indicates that the interaction term is unlikely to play a significant role in the first part of the two-part model.

²⁶Interestingly, an adjusted Wald test does not reject the null hypothesis of equality of average estimates for crime losses as a percentage of turnover and in monetary value when the sample is limited to firms already created two years prior to the survey.

Table 2.3: Empirical results for the base and augmented models

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Base Model Probit Coefficients	Base Model OLS Coefficients	Base Model Average marg. effects	Augmented Model Probit Coefficients	Augmented Model OLS Coefficients	Augmented Model Average marg. effects
questionnaire (in %)				-0.451** (0.228)	14.23*** (2.092)	7.682*** (1.635)
log(employees)	0.119* (0.0712)	0.0633 (0.867)	0.444 (0.610)	0.141* (0.0727)	-0.782 (0.732)	0.0202 (0.561)
sector: services	-0.258 (0.333)	6.060** (2.952)	3.298 (2.109)	-0.246 (0.335)	5.224** (2.631)	2.714 (1.999)
sector: retail trade	0.0396 (0.342)	6.037* (3.469)	4.367* (2.566)	0.0172 (0.344)	6.660** (3.190)	4.741* (2.470)
Constant	0.310 (0.354)	3.971 (3.470)		0.563 (0.378)	-2.340 (3.158)	
R^2		0.0225			0.2823	
McFadden R^2	0.0225			0.0430		
Observations	166	166	166	166	166	166

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The two-part model was estimated with Stata (Belotti *et al.*, 2015).

The dependent variable is the estimation by respondents of bribes paid annually by firms “similar to theirs”, expressed as a percentage of turnover.

Table 2.4: Empirical results for the full model

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Full Model Probit Coefficients	Full Model OLS Coefficients	Full Model Marginal effects	Full Model with interaction Probit Coefficients	Full Model with interaction OLS Coefficients
questionnaire (in %)	-0.450* (0.228)	13.37*** (1.972)	7.125*** (1.566)	-0.528 (0.392)	6.276*** (2.085)
log(employees)	0.131 (0.120)	2.296 (1.506)	2.018* (1.144)	0.131 (0.120)	2.050 (1.374)
sector: services	-0.241 (0.338)	3.777 (2.557)	1.687 (2.017)	-0.246 (0.336)	3.786* (2.285)
sector: retail trade	0.0236 (0.353)	4.066 (2.855)	2.935 (2.273)	0.0200 (0.351)	4.656* (2.555)
newfirm	-0.0386 (0.367)	11.76** (4.716)	7.623** (3.588)	-0.116 (0.521)	4.175 (3.711)
newfirm*questionnaire				0.112 (0.479)	11.78*** (3.513)
Constant	0.600 (0.511)	-13.43** (5.732)		0.661 (0.567)	-8.413* (4.871)
R^2		0.3425			0.3856
McFadden R^2	0.0430			0.0433	
Observations	166	166	166	166	166

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The two-part model was estimated with Stata (Belotti *et al.*, 2015).

The dependent variable is the estimation by respondents of bribes paid annually by firms “similar to theirs”, expressed as a percentage of turnover.

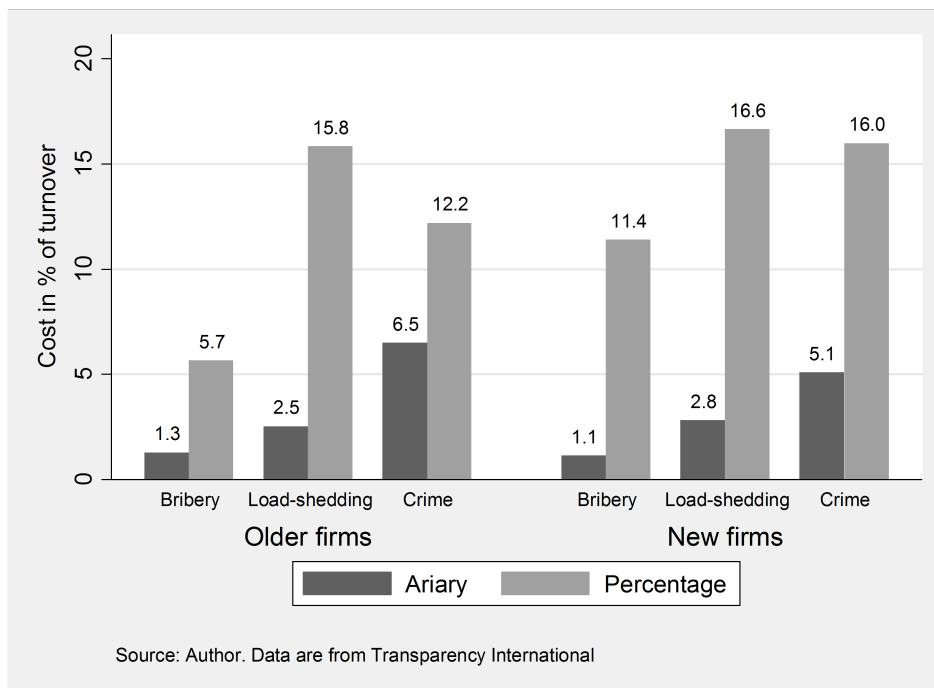


Figure 2.5: Cost estimates by new and older firms, per answer format

2.4.4 Selection

Following Clarke (2011), to enable comparisons between the estimates of magnitudes of bribery and other costs from the two versions of the questionnaire, I converted estimates expressed in monetary value as a percentage of turnover using the firm’s own annual turnover as reported by the firm owner or manager during the survey²⁷.

A concern is that some respondents may under-report their firm’s turnover, particularly if they fear that the information they provide would be shared with the tax authorities. If so, their estimates of bribery converted into percentage of turnover would be biased downwards. This under-reporting of turnover would have the effect of reducing the observed gap between the average estimates of bribery and other costs expressed in monetary value and as a percentage of turnover. Without this bias, the gap between estimates in monetary terms and as a percentage of turnover could possibly be wider than the one observed.

A more problematic issue raised by the conversion is that some respondents may estimate bribes for firms that are systematically smaller in size, despite the question asking them to evaluate how much *firms similar to theirs* have to pay annually in bribes to “get things done”. This bias is unlikely to explain the observed gap between estimates of bribery as a percentage of turnover and in monetary terms, as a similar gap – although smaller in magnitude – is noticeable for estimations of crime and load-shedding costs borne by the firm. Those costs, when estimated as a percentage of turnover, relate not to other firms’ turnover as for the bribery question but to the firm’s own turnover.

The conversion was not possible for estimates of bribery and other costs when respondents in monetary terms who estimated a positive amount were unable or unwilling to reveal their firm’s turnover to the interviewer. To maintain comparability, sample observations for which no reporting of the firm’s turnover is available (139 observations) have been dropped from all regressions and computations of the magnitude of bribery and other costs²⁸.

²⁷For firms created less than two years before the survey, the survey asked respondents to estimate their average monthly turnover instead of annual turnover.

²⁸A less conservative approach is to leave out only those observations for which the conversion was necessary but not possible due to the respondents failing to report their firm’s turnover. For respondents who answered in percentage, their firm’s turnover is not of use in the analyses. The firm’s turnover is not required either when respondents in monetary terms reported a zero magnitude or did not provide an estimation. Results remain largely unchanged when only the 22 observations for which the conversion was necessary but not possible are dropped instead of the 139 observations for which no turnover data are available. The only noticeable difference is that the ratio between average estimates of firm losses due to load-shedding as a percentage of turnover and in monetary value becomes larger for new firms (7.3) than for older firms (6.4).

Sample selection issues may occur if availability of data about turnover is non-random. Also, while the experiment has randomly allocated the two versions of the questionnaire (monetary value versus percentage of turnover) to two sub-sample of surveyees with identical average characteristics, some respondents have declined responding to the question. As noted in the previous section, the non-response rate to the bribery question is significantly lower for the version of the questionnaire in percentage. The same difference in the non-response rate of the two versions of the questionnaire has been noticed for the question about the cost of load-shedding, whereas the non-response rate to the question about the cost of crime borne by the respondent's firm is not significantly different for one version of the questionnaire compared to the other.

Interestingly, the gap in estimates in monetary value and as a percentage of turnover is relatively smaller for the question asking respondents to estimate their firms' losses due to crime. Might it be then that firm owners and managers who failed to answer the bribery question in monetary terms would have estimated a lower-than-average estimate of bribery as a percentage of turnover, thus explaining the difference observed between the two answer formats²⁹?

To evaluate the influence of selection on the observed difference in the magnitude of bribery estimated in monetary value and as a percentage of turnover, I apply a Heckman correction to the full version of the two-part model including the interaction term between the questionnaire version variable and the "new firm" binary variable. Selection may arise because some respondents refrained from answering the bribery question or because they did not want to or could not provide information about their firm's turnover.

A probit model with sample selection (Van de Ven and Van Praag, 1981) is performed on the first part of the two-part model and estimated with a maximum-likelihood estimator³⁰. A binary variable capturing whether the survey respondent is the owner of the firm is used as an exclusion restriction. The logic behind adding this variable in the selection equation is that some respondents who are not owners but employees of their firm could be unwilling to reveal sensitive information such as the firm's turnover or how much bribes need to be paid without knowing whether the owner of their firm would agree with this disclosure. Respondents who are owners of their firm are significantly (at 5 percent) more likely to provide information on their

²⁹This hypothesis is consistent with the fact that the ratio between estimates as a percentage of turnover and in monetary value is slightly lower for the *Enterprise Survey* carried out in Madagascar, as business leaders who took part in this survey may have had the choice of the answer format for this question.

³⁰The *heckprob* command in Stata.

turnover and to make an estimation of the amount of bribes firms similar to theirs have to pay annually to public officials, on average, to “get things done” (Table 2.5).

The correlation coefficient between the error terms of the selection and outcome regressions (ρ) is not significantly different from 0 at conventional levels³¹, which is evidence that selection is not a threat to the results obtained on the probit part of the two-part model.

The Heckman selection model applied to the OLS part of the two-part model and estimated with maximum likelihood, again with the owner variable as the exclusion restriction, fails to converge. Moreover, the two-step version of the Heckman selection model is not suitable for a complex survey dataset (see footnote 13). A solution to this problem is to randomly drop 40 surveyees from the large firm component of the survey to which the percentage version of the survey questionnaire had been allocated in order to redress comparability between the two versions of the questionnaire. The two-step approach can then safely be applied to this modified dataset.

In order to use all available information efficiently, this process is repeated multiple times with a new random sub-sample of 40 observations being dropped each time and added back again to the sample after the two-step Heckman selection model has been estimated. With 100,000 iterations, the average p-value obtained for the coefficient of the inverse Mills ratio is 0.71, indicating that selection is also unlikely to be a confounding factor for statistical results obtained with the second part of the two-part model.

³¹For numerical stability during the optimization process and to ensure that the correlation coefficient ρ is confined within the $[-1,1]$ range, Stata includes $\text{atanh}(\rho)$, the inverse hyperbolic tangent of ρ , instead of ρ when estimating a probit model with sample selection. Significance tests over ρ must be applied to $\text{atanh}(\rho)$. Since $\text{atanh}(0) = 0$, the reported test for $\text{atanh}(\rho) = 0$ is equivalent to the test for $\rho = 0$ (StataCorp, 2011).

Table 2.5: Coefficients of the probit part of the two-part model with sample selection

VARIABLES	(1) Outcome equation	(2) Selection equation
questionnaire (in %)	-0.737** (0.321)	0.631*** (0.200)
log(employees)	0.127 (0.107)	-0.0196 (0.0778)
sector: services	-0.223 (0.296)	0.0544 (0.203)
sector: retail trade	-0.0211 (0.309)	0.0766 (0.212)
newfirm	-0.138 (0.464)	-0.00975 (0.274)
newfirm*questionnaire	0.203 (0.396)	-0.189 (0.259)
owner		0.312** (0.139)
Constant	1.393** (0.555)	-0.748** (0.365)
Atanh(rho)	-0.974 (1.492)	
Observations	431	431

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

2.4.5 An additional test: load-shedding frequency

If estimates of bribery vary depending on the answer format due to a measurement error, this error should affect any type of percentage versus absolute value calculations, not just those involving firm turnover.

One of the questions in the Transparency International survey asked respondents to estimate the number of load-shedding days over the 12 months period preceding the survey³². Those who had to estimate the magnitude of bribery as well as business losses due to crime and load-shedding as a percentage of turnover had to answer this question as a percentage of working days in the year. Concretely, this calculation requires dividing the number of load-shedding days experienced during the year by 3.13³³.

Firm owners and managers estimated an average of 76.5 days of load-shedding affecting their business over the 12 months period preceding the survey, or 24.4 percent of the total number of working days in the year. Those responding as a percentage of days produced a higher estimate (28.5 percent or 89.3 days) than those responding in number of days (20.2 percent or 63.3 days). The adjusted Wald test rejects at 1 percent the null hypothesis of equality of the mean estimates of load-shedding frequency as a percentage of days and in number of days.

As for the magnitude of bribery and firm losses due to load-shedding, the non-response rate is higher for respondents in number of days, 9.4 percent versus 3.2 percent for those answering as a percentage of days (a difference significant at 5 percent). The proportion of zero estimates is statistically equivalent: 1.4 percent for respondents in number of days and 0.9 percent for respondents as a percentage of days.

The ratio of the estimated frequency of load-shedding expressed as a percentage of days and in number of days is significant, although of a lower magnitude (1.4) than for the bribery, crime and load-shedding costs. This result is consistent with the hypothesis of a computational error causing the difference in estimates.

Less experienced firm owners and managers, who started their business in the 24 months prior to the survey, estimated load-shedding frequency about twice as high in percentage of days as in number of days (Figure 2.6), a difference statistically significant at 1 percent. For firms at least two years old, the answer format does not influence the average estimate of

³²Load-shedding or *délestage* in French - the planned shut-down of the power supply due to consumption exceeding the production capacity - is a major problem in Madagascar. The World Bank's 2016 *Doing Business* report attributed the lowest possible score - 0 out of 8 points - for reliability of the power supply and transparency of tariffs from the perspective of businesses operating in Madagascar (The World Bank, 2016b).

³³This figure is obtained by subtracting from the 365 days in the year 52 days corresponding to non-working days (Sundays), and dividing by 100.

load-shedding frequency. This frequency is estimated to be 25.0 percent of the number of working days in the year for those who answered in number of days, compared with 26.3 percent for estimates in percentage of days³⁴.

Even for this rather simple calculation, the answer format significantly influences estimates of less experienced owners and managers. This result suggests that experience makes businesspeople more competent to formulate such estimates. Experience is not, however, a perfect cure for miscalculations. As shown in the previous section, the difference in estimates of the magnitude of bribery, firm losses due to load-shedding and firm losses due to load crime in monetary value and as a percentage of turnover are significant both statistically and economically even for firms older than two years.

The survey question about load-shedding frequency provides additional insight on the comparative reliability of each answer format. Actual data on the number of load-shedding days recorded in Antananarivo during the year 2014 could be obtained from *Jiro sy Rano Malagasy* (JIRAMA)³⁵, the only company supplying power in Antananarivo. As it was not possible to obtain the same data for the months of November and December 2013, the year 2014 is used as a *proxy* for the frequency of load-shedding during the twelve months prior to the survey carried out by Transparency International between the 3rd and 28th of November, 2014³⁶.

From JIRAMA records, the number of working days on which at least one scheduled power cut occurred in Antananarivo was 74, or 23.6 percent of working days. This figure is slightly lower than the average estimate by firm owners and managers of 76.5 load-shedding days affecting their business over the 12 month period preceding the survey. The real number of load-shedding days is well below the average estimate in percentage (89.3 days), and significantly higher than the average estimate in number of days (63.3 days).

It is worth noting that load-shedding on a given day does not necessarily impact all neighbourhoods throughout the city. For this reason, it is likely that a number of surveyees who estimated a number of days below 74 or 23.6 percent of the total number of working days nonetheless overestimated the number of load-shedding days affecting their business. This is consistent with the fact that firms with at least 10 employees provide an average estimate of the number of load-shedding days affecting their business that is higher than the average estimation obtained from newly created firms, which are generally of a smaller size and operating from a single workplace (80.5 versus 73.7 days, respectively).

³⁴The p-value of the adjusted Wald test for the difference in estimates is 0.77.

³⁵I thank JIRAMA for those data.

³⁶According to informed JIRAMA technicians I interviewed, there is no evidence of a different frequency of load-shedding in the months of November and December 2013 compared to November and December 2014.

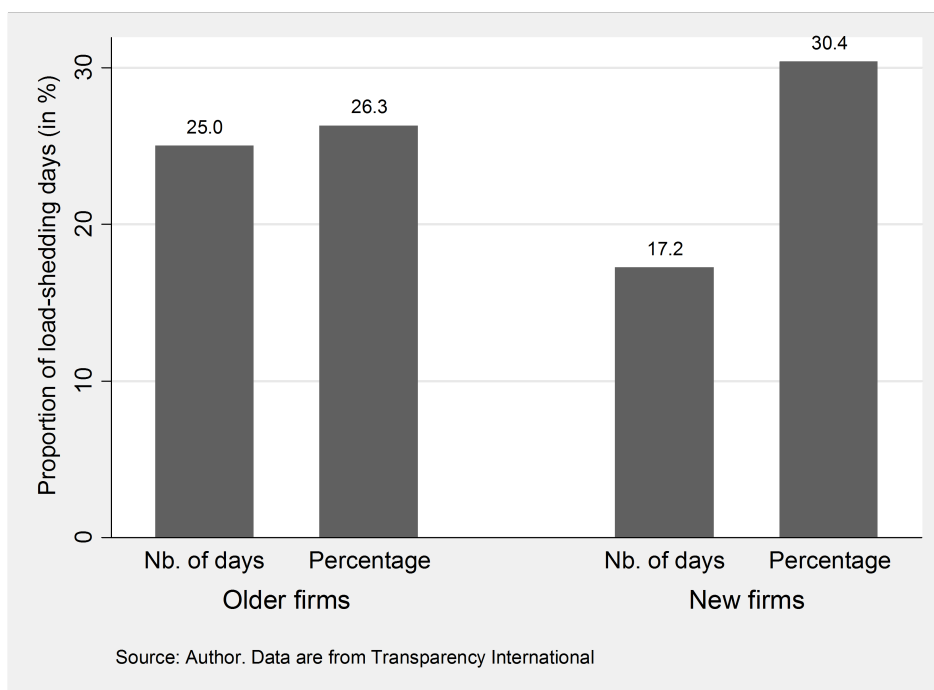


Figure 2.6: Estimation of the proportion of load-shedding days in the year by new and older firms, per answer format

An informative statistic that can easily be computed is the proportion of respondents who overestimated with certainty the number of load-shedding days in the year, i.e. the proportion of firm owners and managers who estimated a number of load-shedding days higher than 74 or 23.6 percent of the total number of working days.

Approximately one-fourth (28.2 percent) of respondents who estimated load-shedding frequency in number of days produced an assessment higher than the actual number of load-shedding days in Antananarivo city. In comparison, about half (51.4 percent) of firm owners and managers who answered the question as a percentage of the number of working days in the year overestimated with certainty the number of load-shedding days affecting their firm. This result confirms Clarke's (2011) insight that some survey respondents tend to systematically overestimate percentages. This evidence, however, does not exclude the possibility that respondents to business surveys may also tend to underestimate amounts when formulating them in absolute value.

2.5 Conclusion

Why do business owners and managers, especially the ones with less experience in running a business, are so much misjudging the magnitude of bribery? A possible explanation is that some respondents to business surveys tend to systematically overestimate amounts in percentages, as suggested by Clarke (2011). An alternative hypothesis is that certain respondents answering in monetary value are not exhaustive in estimating bribes, focusing only on a few payments so as not to have to think too long about their answer, or for lack of interest in producing a reliable answer. Experience in running a business appears to mitigate this inclination to error but without eliminating it entirely.

This research paper is unable to determine which of the two answer formats tested produces the most reliable estimates, only suggesting that some respondents – particularly the less experienced ones – most likely overestimate percentages. Providing a definite answer to this question would require a better understanding of the cognitive mechanisms involved when survey respondents estimate amounts. In this respect, the non-response rate certainly has an important role that needs to be better understood, especially to determine whether there is a trade-off between a higher response rate and more reliable answers.

However, this research is able to confirm the existence of a systematic bias in estimates by firm owners and managers of the magnitude of bribery, and also of other quantities of interest such as firm losses due to load-shedding and crime, and even the frequency of load-shedding. It appears that the difference between estimates in percentage and in absolute

value is particularly high for abstract concepts that are difficult to quantify. For bribery more specifically, the difference in estimates as a percentage of turnover and in monetary terms is observed for high and low estimates alike, although the difference appears more pronounced in relative terms for positive but small estimates.

The study of the influence of the answer format on estimations of bribery in business surveys has clear implications for research on the determinants and effects of corruption. Results of microeconomic studies using business survey data may be significantly affected by measurement error related to the format in which the survey questions are answered. As this research paper shows, such measurement error may affect businesspeople differently depending on their characteristics such as their experience in running a business. Studies using business survey data finding a negative correlation between the longevity of firms and the share of firm turnover paid in bribes may face invalid conclusions if no proper attention is given to the influence of the response format on estimates of bribes.

Chapter 3

Is Silence an Admission of Guilt?

***Abstract:** Reticence of businesspeople to openly talk about corruption may jeopardise the reliability of corruption-based indicators derived from surveys. This Chapter introduces a new indicator of corruption risk in public procurement assessing compliance with legal contracting rules. Together with a survey of 434 businesspeople carried out in Madagascar, this indicator is used to evaluate how experience of corruption affects decisions from firms to take part in business surveys and to answer survey questions about corruption. I conclude that experience of corruption is positively associated with the likelihood of firm owners and managers denying that firms similar to theirs have to offer gifts or make illegal payments to public officials to secure public contracts. One additional public contract suspected of corrupt practices secured by survey respondents is estimated to increase their probability of estimating a zero magnitude of bribery in public procurement by 0.8 percentage points, for an average rate of zero estimates of 15.7 percent in the sample. Experience of corruption appears to have no influence on respondents choosing to take part in the survey or to answer questions about corruption. The consequence of such strategic behaviour by firm owners and managers is that bribery is likely underestimated in business surveys.*

3.1 Introduction

Business owners and managers are sometimes reluctant to participate in surveys about their professional activity due to lack of time or interest, or because they refuse to disclose to the interviewer private information of relevance for their business.

This reticence is exacerbated when surveys deal with a sensitive issue

like corruption. The wish to avoid mentioning personal involvement in illegal and immoral acts may lead some firm owners and managers to refuse to take part in surveys about corruption if they are aware of their purpose. Those who have been involved in acts of corruption and agree to take part in a corruption survey may also be more inclined than others to refuse to answer questions specifically about corruption. If so, silence from surveyees would be implicit admission of guilt.

Following this reasoning, a number of business surveys interpret the refusal to answer a sensitive question about corruption as evidence of involvement in corrupt acts. Using *Enterprise Surveys* data, the World Bank's *Bribery incidence indicator*, which measures the percentage of surveyed firms who experienced at least one demand for a bribe pursuant to obtaining six different public services, permits or licences, is an example of such a survey (World Bank, 2016a). Refusal to answer any of the six questions making up the indicator is believed to be an implicit affirmation from survey respondents that they have received at least one demand for a bribe¹.

Jensen *et al.* (2010) provided elements that support this interpretation by revealing that some firms operating in repressive institutional environments use non-response as a protection mechanism against potential breach of the confidentiality of their responses.

However, it may also well be that some corrupt firm owners and managers are tempted to expressly deny involvement in corruption, if they wish not to appear guilty. In this case, they would answer questions about bribe payments in the negative rather than refrain from answering them. Using data from World Bank surveys carried out in Bangladesh and Sri Lanka, Clarke *et al.* (2015) found that respondents they identify as reticent, who are more likely than others to understate their personal involvement in corruption, refuse to answer questions about corruption less often than do candid respondents.

Clarke *et al.* estimated that the non-response rate to the four questions on corruption in their survey questionnaire would increase by 2 to 8 percentage points if there were no reticent respondents in their surveyed sample. The authors' explanation for this result is that some firm managers who have personal experience of corruption are inclined to lie, denying they were involved in such acts, rather than not answering the question.

In this respect, the practice of interpreting refusal to answer as an affirmative answer, as the World Bank does with some of its *Enterprise Surveys* indicators, is questionable. It is also worth noting that lack of response to the six questions making up the *Bribery incidence indicator* for reasons other

¹According to the World Bank's *Indicator Description* guide (December 2016 version), this choice of considering a refusal to answer as an affirmative answer was made "[f]or purposes of computation" (World Bank, 2016a).

than refusal to respond is not interpreted by the World Bank in the same way. For example, firms stating that they do not know whether or not they have received a bribe demand are excluded from the computation of the indicator, unlike respondents explicitly refusing to answer the question who are believed to have received at least one demand for a bribe. It is dubious to interpret differently these reasons for lack of response, as the boundaries between the statements “I do not know” and “I do not wish to answer” is tenuous (Shoemaker *et al.*, 2002). Finally, although refusal by firm owners and managers to answer questions about their personal experience of corruption (*item non-response*) is considered admission of guilt, refusal to take part in the survey altogether (*unit non-response*) is not thought the same, even though this choice might also reveal reticence from surveyees to be asked about their experience of corruption².

The challenge of obtaining objectively verifiable information on the corruption experience of firm owners and managers asked to take part in business surveys makes it difficult to assess the validity of such practices. This Chapter proposes a new indicator of corruption risk in public procurement that accounts for breaches and circumventions of legal procurement rules. This indicator provides a count of the number of corruption-prone contracts won by firms, a proxy indicator for their experience of corruption in public procurement. Applying this indicator to firms which were awarded public contracts in Madagascar between 2013 and 2014, I am able to estimate how experience of corruption influences firms’ owners and managers in their decision to take part in a public procurement survey and, for those who participate, how their personal involvement in acts of corruption affects their answers to a question asking them about the magnitude of bribery in public procurement.

The rest of the Chapter is organised as follows: Section 3.2 explains the background of the study, Section 3.3 presents the corruption risk indicator and Section 3.4 describes the survey. Section 3.5 introduces the empirical strategy and interprets the results of the survey in light of the corruption risk indicator. Section 3.6 provides robustness checks and Section 3.7 concludes.

3.2 Corruption in Public Procurement

3.2.1 Public procurement: a sector vulnerable to corruption

Public procurement refers to the purchase of goods and services by public entities, referred to in this Chapter as contracting authorities. Public procurement is widely recognised as a sector that is highly vulnerable to corruption

²Firms included in the initial sample of *Enterprise Surveys* who do not wish to participate are simply replaced by willing participants (The World Bank, 2009).

in both developed and developing countries (Søreide, 2002). Corruption is a serious danger when too much discretion is left to public officials in selecting contractors and when accountability mechanisms are either non-existent or ineffective. Except for civil servants pay, public procurement is the main channel for allocating public funds in most countries.

Legal provisions can reduce opportunities for corruption by providing limits to the decision-making power of each public official involved in awarding contracts. Criminal and administrative penalties for failure to comply with legal procurement procedures, together with effective complaint mechanisms, can also deter temptations from public officials to break the rules (Kühn and Sherman, 2014).

Corrupt practices in public procurement are well documented (Hegstad *et al.*, 2010). Those practices are associated with recurring patterns for which alarm signals, sometimes called *red flags*, can be identified³. Examples of *red flags* indicators are a very low number of bidders for a designated contract, a very short time limit for submitting bids, or multiple contracts suspiciously awarded to the same firm by the same contracting authority over a short period of time.

These procurement risk indicators have been the subject of limited studies, mainly focused on assessing their validity as a measure of corruption risk (Ferwerda *et al.*, 2017 ; Kenny and Musatova, 2010). A notable exception is Auriol *et al.* (2016), who tested a model of entrepreneurial choices in a corrupt environment using procurement data from Paraguay and classifying as corruption-prone all public contracts awarded through emergency procedures which significantly reduce legal safeguards to corruption.

3.2.2 Assessing the scope of the problem in Madagascar

Public procurement in Madagascar is severely affected by corrupt practices. According to the 2013 World Bank's *Enterprise Survey* in Madagascar⁴, 43 percent of managers who secured or intended to secure a public contract in the year preceding the survey believed that similar firms to theirs must make illegal payments to public officials in order to secure contracts.

Transparency International's *Corruption in Antananarivo's Public Services* (CAPS) survey, which interviewed 436 firm owners and managers operating in Antananarivo in November 2014 confirmed these facts. About two-thirds of respondents (69 percent) who took part in at least one public tender during the two years prior to the survey reported that the public procurement process in their sector is unfair (Lesné and Rakotomamonjy, 2015).

³See Ferwerda *et al.* (2017) for a retrospective of the notion of *red flag* in procurement.

⁴Survey carried out from October 2013 to May 2014 with 532 firms interviewed.

3.2.3 The public procurement law in Madagascar

Despite evidence of pervasive corruption in public procurement in Madagascar, the Public Procurement Code in force in the country contains numerous provisions aimed at ensuring compliance with the principles of free access to public procurement, equal treatment for bidders and transparent procedures (Lesné and Hanitra, 2016)⁵.

These provisions include rules limiting the value contracts may have for each combination of contract category (works, supplies, services or intellectual services) and contracting method. The three main contracting methods regarding public procurement in Madagascar are open tendering, consultation and direct purchasing, in decreasing order of publicity requirements and stringency of other procurement rules (see Tables 3.1 and 3.2).

Stringent rules make the procedure more cumbersome for the contracting authority but ensure a level of competition that is compatible with sound management of public funds. Contracting authorities which refuse to comply with these legal rules are liable to sanctions. As in other weak governance environments⁶, however, sanctions are rarely applied in practice. The relatively comprehensive legal framework is undermined by poor performance in the application of the law (Lesné and Hanitra, 2016).

3.3 An indicator of corruption risk in public procurement

3.3.1 A *red flag* indicator of effective competition

When applied to public procurement, the concept of *red flag* refers to the identification of irregularities which are distinctive of corrupt practices. I use this approach to measure corruption risk, for lack of more direct corruption measurement tools, in order to assess how the experience of corruption affects participation in surveys and respondents' inclination to answer specific questions about their experience and perception of corruption.

The *red flag* indicator created for this Chapter relates more specifically to compliance with legal bidding rules on the part of contracting authorities in charge of awarding contracts. At the contract level, the indicator codes 0 if the value of the contract is within the limits set by the law for its category and the contracting method chosen by the contracting authority, and 1 otherwise.

⁵The Transparency International report written by Lesné and Hanitra (2016) is annexed to this thesis (see Appendix C).

⁶Madagascar is ranked 145 out of 175 countries in the 2016 Transparency International *Corruption Perception Index* (CPI) with a score of 26 out for a maximum score of 100.

Table 3.1: Maximum contract value (in Ariary) per contracting method and contract category

	Consultation	Direct purchasing	Any contract exceeding the maximum amount authorised for a consultation must be the subject of an open tender .
Works	Road building and repair	7 million	Any contract exceeding the maximum amount authorised for a consultation must be the subject of an open tender .
	Usual/recurring road maintenance	7 million	
	Other works	5 million	
Supplies	80 million	1 million	
Services	25 million	1 million	
Intellectual services	25 million	1 million	

Source : *Lesné and Hanitra (2016)*

Table 3.2: Legal rules for publicity and award of public contracts, per contracting method

Contracting Method	Publicity	Award
Open tender	<p>Publishing a notice of public invitation to tender in the <i>Journal des marchés publics</i> (Public Procurement Journal) and in at least one approved national daily newspaper at least thirty days before the final date for submitting bids.</p> <p>Publication by posting in a visible, publicly accessible place at least ten days before the date for submitting proposals.</p>	<p>Without negotiating and based on objective criteria previously communicated to bidders, the contracting authority chooses the lowest-priced bid among those submitted, except for bids eliminated for being technically unsatisfactory.</p> <p>The order is awarded to the bidder offering the lowest price. To be valid, the consultation must compare proposals from at least three bidders.</p> <p>The contracting authority awards the contract to the service provider or supplier of its choosing by simply issuing an order form without requiring a minimum number of bidders.</p>
Consultation	<p>Publication by posting in a visible, publicly accessible place at least ten days before the date for submitting proposals.</p>	<p>The order is awarded to the bidder offering the lowest price. To be valid, the consultation must compare proposals from at least three bidders.</p> <p>The contracting authority awards the contract to the service provider or supplier of its choosing by simply issuing an order form without requiring a minimum number of bidders.</p>
Direct purchase	No publicity formality.	

Source : *Lesné and Hanitra (2016)*

It is legally possible for contracting authorities to use consultations and direct purchasing in Madagascar, but only within a value cap explicitly defined in the Public Procurement Code. It is easier for public procurement officers to call on consultations or direct purchasing to award public contracts to a bidder from whom they receive a bribe or a favour. An invitation to tender requires convening a committee at the level of the contracting authority who collectively decides on the bid to be selected. A consultation is easier to manipulate, since the choice of contractor is left to the one public official responsible for awarding the contract. Direct purchasing is even less constraining, since the lack of any publicity requirements leaves public officials free to deal directly with the firm of their choosing.

Failure to comply with legal bidding procedures is a proven driver of corruption in public procurement (Kühn and Sherman, 2014). Consultations and direct purchasing for contracts of a value higher than the ceiling allowed by the law is symptomatic of corrupt practices, which is what the *red flag* indicator developed for this Chapter intends to capture. It is nonetheless important to stress that this indicator does not measure corruption so much as the risk of corruption. Using a less restrictive contracting method than the one required by law may have other causes than corruption, including willingness from contracting authorities to speed up the award process, or ignorance of the legislation on the part of public officials responsible for awarding the contracts.

3.3.2 Computing the *red flag* indicator for Madagascar

The Public Procurement Regulatory Authority (*Autorité de Régulation des Marchés Publics* - ARMP), the public body responsible for controlling and monitoring public procurement in Madagascar, requires contracting authorities to disclose every contract they award so that the Treasury can disburse the funds needed to pay for the services. At the beginning of each year, ARMP posts on its website a list of all public contracts awarded the previous year, which includes, for each contract, the name of the contracting authority and that of the contractor, the purpose of the contract, its category, value and contracting method.

According to ARMP, 34,930 public contracts were awarded in Madagascar by contracting authorities in the years 2013 and 2014. Malagasy public entities disbursed 639 billion Ariary for these contracts, equivalent to USD 242 million. In terms of category, 77 percent of these public contracts were for supplies, 14 percent for services, 6 percent for works and 3 percent for intellectual services.

The average value of those 34,930 contracts is 18 million Ariary (USD 6,900). Contract values are noticeably wide-ranging. Half of the contracts are worth under 2 million Ariary, corresponding to approximately 750 USD, while the average value of the 3,500 most expensive contracts, the ninth

decile of the distribution of contract values, is 155 million Ariary (USD 59,000).

The proportion of contracts awarded by a method that does not comply with the Public Procurement Code is 59 percent. Non-compliant contracts are relatively more common for intellectual services (74 percent) and services (67 percent) than for works (38 percent) and supplies (59 percent).

The fact that most public contracts are awarded under conditions that do not comply with legal requirements can be explained by the lack of monitoring and the near absence of effective sanctions whenever a breach in the procurement procedure is unveiled. The poor application of the law encourages some public officials to overstep legal rules to their benefit.

These 34,930 contracts were awarded to 3,378 private companies. The average number of contracts won by these 3,378 firms which do not comply with legal requirements regarding the contracting method chosen by the contracting authority, and thus labelled at risk of corruption, is six. One in ten (10 percent) of these firms secured over 15 contracts classified as *red flag*, while half of them (51 percent) obtained less than three *red flag* contracts (Figure 3.1). The number of *red flag* contracts secured is negatively correlated with the size and age of firms and positively associated with the likelihood of the firm operating in the trade sector (see Appendix 3.A).

3.4 The Survey

3.4.1 Background and methodology

Determining how experience of corruption affects firm's behaviour when answering corruption questions requires two elements: an indicator revealing corrupt behaviour by firms and a survey aiming at collecting their views on corruption.

The first of these two elements is the *red flag* indicator, which classifies public contracts according to whether or not they comply with the provisions of the public procurement law defining the appropriate contracting methods according to the value and category of the contract. The second element, the survey, was carried out in Madagascar between September and November 2015 by the NGO Transparency International. The main purpose of this survey, which interviewed owners and managers of 434 Madagascar-based companies was to better understand how public procurement in Madagascar takes place in practice⁷.

⁷Firms were informed of the general purpose of the survey, but not of the fact that the questionnaire would ask them about their experience and perception of corruption. However, in view of the reputation of Transparency International in the field of anti-corruption, it is likely that a number of firm owners and managers interviewed anticipated that the survey would deal with this topic.

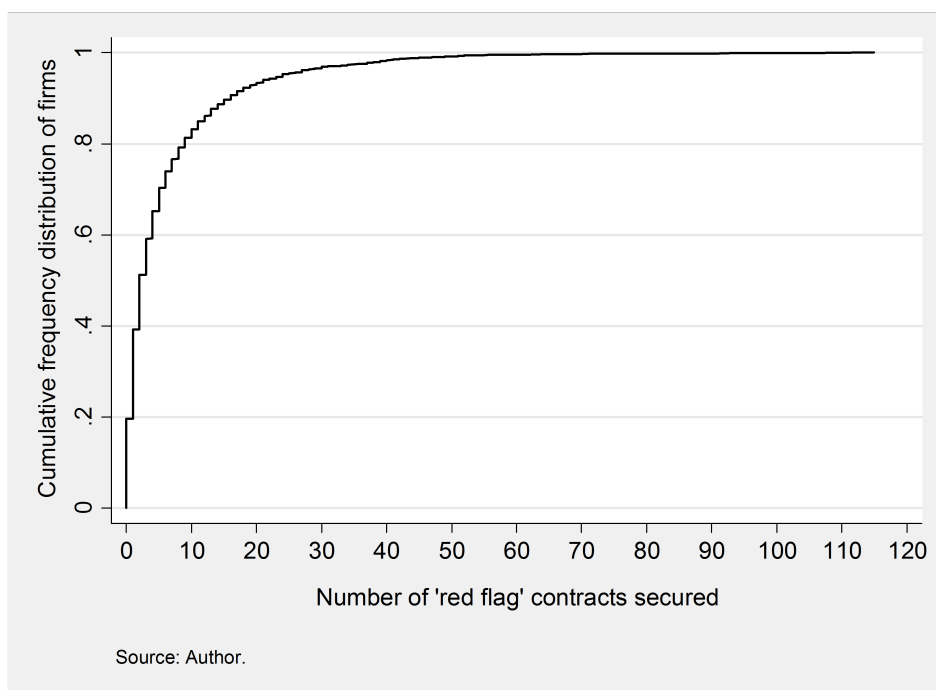


Figure 3.1: Cumulative frequency distribution of firms, by number of *red flag* contracts secured

The survey questionnaire, administered online and by phone⁸, had twelve questions, only one of which dealt explicitly with corruption. This question asked respondents to estimate the percentage of the overall value of a public contract that firms similar to theirs have to spend, on average, in informal payments and other gifts to secure that contract.

The corruption question was asked in the last part of the survey in order to reduce reticence of respondents by letting them first discuss less sensitive topics, such as payment deadlines or training of officials responsible for public procurement. The decision to include only one question on corruption in the survey questionnaire was also made to encourage candour, by avoiding too much focus on corruption in the survey so as not to create suspicion among respondents regarding the motive for the study.

The self-administered online questionnaire and the questionnaire administered by interviewers⁹ over the phone were identical in all respects. Although no “I do not know” or “I do not want to answer” option was proposed in the online questionnaire, there was a mention at the beginning of the survey that respondents could skip to the next question if they could not or did not wish to answer a question. Interviewers administering the phone survey were instructed not to offer these non-response options, but to accept them if the respondent spontaneously brought up either one of them.

3.4.2 The sample

The survey population is constituted by the 3,378 private firms that secured at least one public contract in 2013 or 2014 in Madagascar¹⁰. The list of public contracts awarded during this period and the names of the firms which secured them was obtained from ARMP’s website.

As ARMP only provides the name of contracting firms, additional information was collected from the Madagascar National Statistics Institute (*Institut national de la statistique malgache* - INSTAT). These data include the firm’s head office address, contact phone number, legal form, date of incorporation, staff numbers (by category), and main business sector.

⁸By default, the survey was administered online, with the software tool *Esurvey* (www.esurveycreator.com). When surveyees claimed not having an email address which their unique web link to the online survey could be sent to during their first phone contact with Transparency International, they were given the option of being surveyed by phone.

⁹The same two surveyors contacted and interviewed firms by phone.

¹⁰Ten state-owned firms listed among the entities having secured public contracts in 2013 and 2014 were omitted from the study.

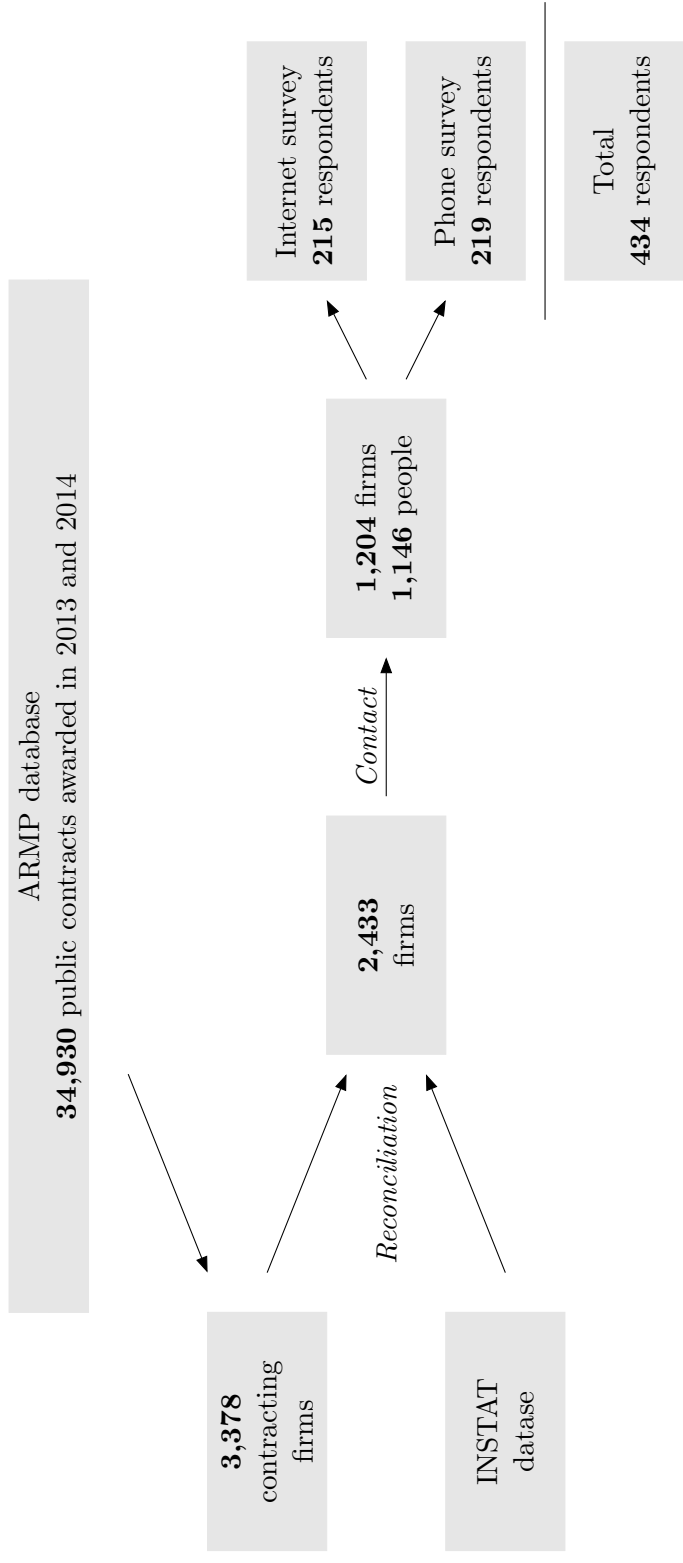


Figure 3.2: Stages in obtaining the survey sample

The list of public contractors and the INSTAT database were merged successfully for 2,433 companies, a matching rate of 72 percent¹¹. Thanks to INSTAT phone data, 1,146 firm owners and managers¹² of 1,204 firms¹³ were successfully contacted¹⁴, of which 215 did complete the online survey¹⁵. This figure represents 39 percent of firms who provided a valid email address enabling them to receive a unique, personal link to the survey. In addition, 219 firms without an email address took part in the phone survey, making a total of 434 respondents. Figure 3.2 summarises the different stages in drawing the survey sample.

3.4.3 Main results

Appendix 3.B summarizes results for all survey questions for the overall sample and each administration method separately. The average magnitude of bribery reported by survey respondents is 24.6 percent of contract value, 21.4 percent for the self-administered online survey and 29.9 percent for respondents interviewed by phone. A quarter of respondents (25.9 percent) who provided an estimation, or 15.7 percent of all survey respondents, reported that firms similar to theirs are never required to make gifts or informal payments to public officials in order to secure contracts. This proportion is 17.6 percent and 39.8 percent, respectively, for respondents who accepted to provide an estimation of the magnitude of bribery in public procurement surveyed online and by phone.

The issue of non-response is of particular concern for question 10. The response rate to all questions of the survey is 90 percent or over, with the exception of question 10, the only question asking respondents directly about

¹¹Errors in the ARMP transcription of the names of contractors likely explain some mismatches between the two databases, together with some firms missing completely from the INSTAT database.

¹²Interviewers routinely asked on the phone to reach the person most empowered to answer procurement-related questions within the firm, usually its owner or manager.

¹³When a respondent owned or managed several firms that secured at least one public contract in 2013 or 2014, the survey covered all of these firms. Two firms were identified as belonging to the same respondent when they shared the same telephone number in the INSTAT database (47 cases), or when the same email address was supplied when these firms were first contacted (18 cases).

¹⁴A telephone number was mentioned for 1,545 contracting firms in the INSTAT database. However, a significant proportion of these telephone numbers were found to be out of order or erroneous.

¹⁵Two reminder emails, with follow-up calls, were sent to firms who had not yet completed the survey, seven and fourteen days respectively after a first email was sent with their link to the web questionnaire. Surveyees who did not complete the online survey despite both reminders were not given the option of completing the survey by phone, unlike those who said they did not have access to an email address when they were first contacted.

their perception of corruption. The response rate to this question is just over 60 percent (see Appendix 3.B)¹⁶. In addition to the sensitive nature of the question, this low response rate may also be explained by its wording and response format, which are more complex than those of the other questions. Question 10 is also the only one asking respondents to assess the behaviour of *businesses similar to theirs* rather than their own firm¹⁷.

3.5 Experience of corruption and survey behaviour

3.5.1 Empirical strategy

I am interested in determining how the experience of corruption may affect decisions by owners and managers of contracting firms to participate in a survey about public procurement and to answer questions about their perception of bribery in public contracting.

Corruption experience is measured by the number of contracts secured by firms that were allocated with a contracting method disallowed by the law (so-called *red flag* contracts). Since this indicator is constructed at firm-level, the unit of analysis is the firm¹⁸.

As demonstrated in the first Chapter of this thesis, indicators for the magnitude of bribery generated from business survey data can be very sensitive to the way survey questions are phrased. In order to avoid misleading conclusions, I follow Clarke *et al.* (2015), Azfar and Murrell (2009) and others in focusing on whether respondents reported any bribes rather than on the amount of bribes they reported.

Since agreeing or refusing to take part in a survey, responding or not to a question about corruption, or estimating a positive versus zero magni-

¹⁶The response rate to the corruption question is significantly lower for the phone survey (44.8 percent) than the online survey (76.7 percent). This result is consistent with the literature on social desirability bias (Tourangeau and Yan, 2007), which predicts that answering sensitive questions is not as easy in direct contact with an interviewer, even by phone, as via a self-administered questionnaire. The response rate to the two administration methods is similar for the other eleven questions (Appendix 3.B). Caution is nonetheless required when comparing response rates to the internet and telephone components of the survey as the method of administering the questionnaire is possibly endogenous to the perception and experience of corruption. Only firm owners and managers who claimed they did not have an email address during their first phone contact with the interviewers were given the option of completing the survey by phone.

¹⁷For the sake of comparability, question 10 was purposely phrased similarly as the corresponding question asking about the magnitude of bribery in public contracts in the *Enterprise Survey* standard questionnaire.

¹⁸For respondents owning or managing more than one firm, the survey referred to all those firms simultaneously. To correct for the redundancy of those observations in firm-level analysis, weights inversely proportional to the number of firms belonging to each respondent are applied in all subsequent analyses.

tude of bribery are all events that offer only two options, a binary response model such as the probit model is appropriate. The probability of the outcome of interest to be observed, conditional on a set of control variables, is modelled with the cumulative distribution function of the standard normal distribution, as follows:

$$Prob(y_i = 1 | \mathbf{Z}_i) = \Phi(\mathbf{Z}_i \delta) \quad (3.1)$$

With \mathbf{Z}_i a set of independent variables evaluated for firm i and δ the vector of associated coefficients. The regression model predicts a positive outcome ($y_i = 1$) if and only if $y_i^* > 0$, with y_i^* a latent variable estimated for firm i . While unobserved, this latent variable can be modelled as a linear function of the set of independent variables \mathbf{Z}_i and an error term ε_i .

Among the independent variables is obviously the number of *red flag* contracts awarded to the firm. To account for the size effect associated with the overall number of contracts obtained by the firm, the probit model also includes as a control variable the number of contracts secured which contracting method comply with the legal rules. These contracts are called *white flag* by analogy with *red flag* corruption-prone contracts¹⁹.

In order to capture non-linearities in the effect of the number of *red flag* and *white flag* contracts on y_i^* , squared terms of both these variables and their interaction are added to the model. This specification is called the *basic model* in the rest of this Chapter.

An alternative specification, called the *extended model*, also includes a series of variables that control for firm characteristics. These variables are the firm's age in years, its number of employees (per groups²⁰) and the firm's main line of business²¹. In addition, dummy variables identify the survey administration method²² (online vs. phone), and the interviewer in charge of carrying out the questionnaire when the survey was administered by phone.

¹⁹The variable of the number of contracts compliant with legal rules was preferred to the total number of contracts secured by the firm to avoid multicollinearity with the number of *red flag* contracts. The Pearson correlation coefficient between the *red flag* and *white flag* variables is 0.68 for an average Variance Inflation Factors (VIF) of 1.87.

²⁰The four groups are 0 employees, 1 to 4 employees, 5 to 9 employees and 10 or more employees. These categories are taken from the INSTAT database, except for the last one originally broken down into six subcategories whose frequency did not exceed 2 percent of the sample and which were grouped together for better statistical power.

²¹The main line of business is classified into five groups: business services (34.2 percent), wholesale trade (20.0 percent), construction and public works (14.2 percent), retail trade (12.6 percent) and transport (6.5 percent), to which is added an "other" category that includes another 12.6 percent of firms.

²²Regressions combine all the data gathered by phone and internet. Chow tests applied to the basic and extended models conclude that the coefficients of the variables of interest from regressions carried out separately for each administration method are not statistically different at conventional levels.

The *extended version* of the latent variable model is the following:

$$y_i^* = \alpha + \beta_1 \text{redflag}_i + \beta_2 \text{whiteflag}_i + \beta_3 (\text{redflag}_i^2) + \beta_4 (\text{whiteflag}_i^2) + \beta_5 (\text{redflag}_i * \text{whiteflag}_i) + \mathbf{X}_i\boldsymbol{\gamma} + \varepsilon_i \quad (3.2)$$

With redflag_i and whiteflag_i the number of contracts secured by firm i that respectively breach and comply with legal contracting rules and $\mathbf{X}_i\boldsymbol{\gamma}$ the vector of additional control variables and associated coefficients. The regression model is estimated with maximum likelihood.

3.5.2 Survey participation

The number of firm owners and managers who agreed to take part in the survey was 434 out of a total of 1,146 contacted, or just over one-third (38 percent). As it can be seen from columns (1) and (2) of Table 3.3, the number of *red flag* contracts secured by firms does not appear to influence their likelihood of taking part in the survey, with or without the additional control variables of the extended model.

If the number of *red flag* contracts is a good measure of corruption in public procurement as experienced by surveyed firms, this experience does not appear to be a significant criterion for firm owners and managers to agree or refuse to take part in a survey on public procurement²³.

This result is consistent with Tourangeau and Yan (2007) who noted that while many researchers consider that topic sensitivity poses a threat to achieving high unit response rate, evidence in support of this belief is scarce.

3.5.3 Item non-response

Let us now evaluate the relationship between the number of corruption-prone contracts secured by a firm and the probability of that firm's owner or manager not answering the question asking about the magnitude of bribery in public procurement. Looking first at the *basic model*, which contains as explanatory variables only the number of *red flag* and *white flag* contracts secured by the firm, as well as the square of these variables and their interaction, there appears to be a positive, significant (at 5 percent) relationship between the probability of item non-response and the number of contracts at risk of corruption obtained by firms. However, this relationship is not robust to the inclusion of the additional control variables of the *extended model*, in particular to the addition of the dummy variables that control for the survey administration method and surveyors (Table 3.3, columns 3-4).

²³It is worth noting that the role of the surveyor on the participation decision is not negligible. The participation rate is significantly lower for one of the two interviewers who administered the survey by phone (30 percent), compared to the other surveyor (43 percent) and the online participation rate (39 percent).

Table 3.3: Regressions (average marginal effects)

VARIABLES	(1)		(2)		(3)		(4)		(5)		(6)	
	Participation Basic Model	Participation Extended Model	Participation Basic Model	Participation Extended Model	Non-response Basic Model	Non-response Extended Model	Non-response Basic Model	Non-response Extended Model	Zero estimation Basic Model	Zero estimation Extended Model	Zero estimation Basic Model	Zero estimation Extended Model
<i>nb redflag</i>	0.00269 (0.00272)	0.00343 (0.00278)	0.00854** (0.00436)	0.00343 (0.00278)	0.00192 (0.00451)	0.00192 (0.00451)	0.00722** (0.00290)	0.00192 (0.00451)	0.00722** (0.00290)	0.00838*** (0.00294)	0.00722** (0.00290)	0.00838*** (0.00294)
<i>nb whiteflag</i>	0.00298 (0.00402)	0.00411 (0.00408)	0.000589 (0.00716)	0.00411 (0.00408)	0.00281 (0.00712)	0.00281 (0.00712)	-0.000269 (0.00465)	0.00281 (0.00712)	-0.000269 (0.00465)	-0.00145 (0.00467)	-0.000269 (0.00465)	-0.00145 (0.00467)
firm age		0.00330* (0.00181)		0.00330* (0.00181)	0.00263 (0.00287)	0.00263 (0.00287)		0.00263 (0.00287)		-0.00148 (0.00204)	0.00263 (0.00287)	-0.00148 (0.00204)
staff nb [1 5[		0.0325 (0.0350)		0.0325 (0.0350)	0.0921* (0.0512)	0.0921* (0.0512)		0.0921* (0.0512)		-0.0393 (0.0365)	0.0921* (0.0512)	-0.0393 (0.0365)
staff nb [5 10[		0.138* (0.0811)		0.138* (0.0811)	0.0832 (0.110)	0.0832 (0.110)		0.0832 (0.110)		-0.0292 (0.0806)	0.0832 (0.110)	-0.0292 (0.0806)
staff nb [10 +]		-0.231*** (0.0451)		-0.231*** (0.0451)	0.0904 (0.142)	0.0904 (0.142)		0.0904 (0.142)		0.419*** (0.128)	0.0904 (0.142)	0.419*** (0.128)
sector: corporate services		0.00189 (0.0505)		0.00189 (0.0505)	0.0589 (0.0759)	0.0589 (0.0759)		0.0589 (0.0759)		0.0584 (0.0556)	0.0589 (0.0759)	0.0584 (0.0556)
sector: freight transport		0.0604 (0.0695)		0.0604 (0.0695)	0.00674 (0.1000)	0.00674 (0.1000)		0.00674 (0.1000)		0.0830 (0.0807)	0.00674 (0.1000)	0.0830 (0.0807)
sector: other		0.0266 (0.0589)		0.0266 (0.0589)	-0.0882 (0.0863)	-0.0882 (0.0863)		-0.0882 (0.0863)		0.0438 (0.0660)	-0.0882 (0.0863)	0.0438 (0.0660)
sector: retail trade		-0.0198 (0.0626)		-0.0198 (0.0626)	0.100 (0.0989)	0.100 (0.0989)		0.100 (0.0989)		0.0318 (0.0696)	0.100 (0.0989)	0.0318 (0.0696)
sector: wholesale		0.0100 (0.0556)		0.0100 (0.0556)	0.100 (0.0866)	0.100 (0.0866)		0.100 (0.0866)		0.0472 (0.0613)	0.100 (0.0866)	0.0472 (0.0613)
surveyor 1 (telephone survey)		0.00777 (0.0342)		0.00777 (0.0342)	0.290*** (0.0523)	0.290*** (0.0523)		0.290*** (0.0523)		0.00473 (0.0384)	0.290*** (0.0523)	0.00473 (0.0384)
surveyor 2 (telephone survey)		-0.107*** (0.0355)		-0.107*** (0.0355)	0.345*** (0.0628)	0.345*** (0.0628)		0.345*** (0.0628)		0.0770 (0.0494)	0.345*** (0.0628)	0.0770 (0.0494)
Observations	1,204	1,146	463	1,146	442	442	463	442	463	442	463	442

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Therefore, it appears that experience of corruption, as measured by the number of contracts at risk of corruption obtained by the firm, has no effect on the likelihood of a firm owner or manager who participates in the survey agreeing to answer a question about corruption in public procurement. These findings reject both hypotheses that respondents with greater experience of corruption are more inclined to refuse addressing corruption issues in business surveys (Jensen *et al.*, 2010) and the opposite proposition that corrupt firm owners and managers are more likely than others to respond to corruption questions, so as not to “appear guilty” (Clarke *et al.*, 2015).

3.5.4 Zero versus positive estimates of bribery

Refusing to take part in surveys or to answer questions about corruption do not seem to be strategies used by firm owners and managers to conceal their experience of corruption. Despite this, it is clear that respondents to business surveys do not always disclose their true experience of corruption.

Column (5) of Table 3.3 displays average marginal effects of the variables of the *basic model* on the likelihood of survey respondents estimating a zero magnitude of bribery in the process of securing public contracts for firms similar to theirs (versus not answering the question or estimating a strictly positive magnitude).

The number of *red flag* contracts secured by a firm has a positive, significant effect on the likelihood that the firm’s owner or manager denies the existence of bribery in public procurement. The proportion of zero estimates of the magnitude of bribery in public procurement in the overall sample is 15.7 percent. One additional contract identified as corruption-prone secured by a firm is associated with an additional 0.72 percentage point of probability of that firm providing a zero estimate of bribery, all other things held equal.

The number of secured contracts that complied with competitive rules (*white flag*) are not associated with the probability of a zero response to the question asking respondents to estimate the magnitude of corruption in public procurement for firms similar to theirs.

Including the additional control variables of the extended model (column (6) in Table 3.3) reinforces the statistical significance and slightly increases the magnitude of the average marginal effect of one additional *red flag* contract to 0.84 percentage points.

A detailed account of the marginal effects of the extended model reveals that the influence of securing one additional *red flag* contract on the probability of a zero response is greater when the respondent’s initial number of *red flag* contracts is low (Figure 3.3).

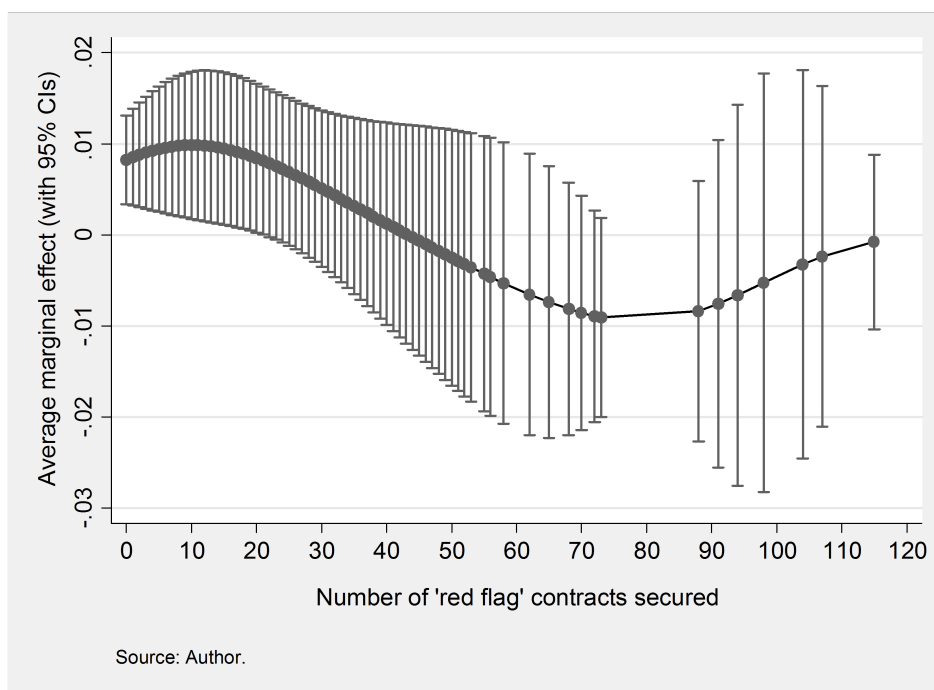


Figure 3.3: Average marginal effects of *red flag* contracts on the likelihood of respondents providing a zero estimate of bribery, per initial number of *red flag* contracts secured by firms (*extended model*)

This result is not surprising as it is reasonable to expect that an additional experience of corruption has a greater influence on the behaviour of a respondent when it is unusual in the first place. The average marginal effect scales down when the number of *red flag contracts* initially secured by the firm is over 11, becoming non-significant at 5 percent with more than 22 *red flag contracts*. It should be noted, however, that 94.6 percent of contracting firms secured less than 23 *red flag contracts* over the period considered.

3.6 Robustness checks

3.6.1 Selection

These results may be affected by selection if the sample of survey respondents is not random. Selection may occur due to mismatching between the ARMP contractors list and the INSTAT business database, or because of unsuccessful attempts to contact firms, eliminating from the analysis surveyees whose behaviour is systematically different from those in the sample.

Reconciliation of the ARMP and INSTAT datasets required for contacting public contractors was successful for 72 percent of firms which secured at least one public contract in 2013 or 2014. Only information about the number of *red flag* and *white flag* contracts they secured and the value of those contracts is available for contractors not mentioned in the INSTAT database.

The number of corruption-prone contracts secured by a firm is positively correlated with the likelihood that reconciliation was successful (first column of Appendix 3.C). The effect is small, however: one additional *red flag* contract increases the likelihood of reconciliation by 0.4 percentage points. The total value of contracts secured by the firm is also positively but weakly related to the likelihood of reconciliation: 10 million additional Ariary (about USD 3,800) increase this probability by 0.1 percentage point. In contrast, the number of *white flag* contracts secured has no effect on the probability of the matching being successful.

Contractors who were successfully contacted by phone are in a higher-than-average proportion large companies and firms operating in wholesale trade, corporate services or freight transport. The number of *red flag* and *white flag* contracts secured are not significant criteria associated with the likelihood of contact (second column of Appendix 3.C).

A Heckman selection model is used to test selection in relation to participation in the survey among contractors who were matched successfully with the INSTAT database²⁴ (third and fourth columns of Appendix 3.C).

²⁴The Heckman model fails to converge when applied to regressions explaining non-response and zero estimates to the corruption question, even when the number of exclusion restrictions is lowered to one. However, the absence of a selection problem at the

In addition to the variables of the *extended model*, the selection regression includes as exclusion restrictions the gender and nationality of the surveyee as well as dummies for the firm’s legal form. The Heckman model rejects the existence of a selection bias, with a p-value of 0.994 for the t-test of $\text{atanh}(\rho)$ - the hyperbolic tangent of ρ , the correlation coefficient between the error terms of the selection and outcome regressions - being equal to 0.

3.6.2 Exclusion of respondents not confirming contracts

The first survey question asked respondents if they were awarded at least one public contract in 2013 or 2014. This is the case since these firms are mentioned as public contractors in ARMP database. The question was meant to evaluate if respondents were aware and candid about this fact.

About 84 percent of respondents confirmed their firm secured at least one public contract in 2013 or 2014. All but five of the 68 respondents not confirming this fact completed the online survey²⁵ (Appendix 3.B).

Findings are robust to the exclusion of respondents who did not confirm that their firm secured public contracts in 2013 or 2014²⁶. Regressions for non-response and zero response to the corruption question excluding these respondents are presented in Appendix 3.D.

The influence of the number of corruption-prone contracts on a firm’s decision not to answer the corruption question is still statistically insignificant in the *extended model*. The likelihood of respondents denying that corruption exists in public procurement is still positively associated with the number of *red flag* contracts their firm secured, with an average marginal effect similar to the one obtained with the full sample.

3.6.3 Refinement of the *red flag* indicator

Public officials wanting to favour a firm for a public contract may prefer to circumvent rather than infringe the legal rules regarding contracting methods, particularly if they are afraid of the sanctions they might face if their favouritism were to be revealed. A modified version of the *red flag* indicator adds three identification criteria to that of blatant disregard for legal rules.

participation stage makes selection issues unlikely for a particular question of that survey.

²⁵It is possible that some respondents got confused by the term “public procurement” which has a formal connotation, although it actually refers to all purchases from public entities, not just large contracts put out for tender. The phone survey made it possible to clarify this point, something which could not be done for the online survey.

²⁶On average, those respondents secured 4.5 *red flag* contracts compared to 7.4 for respondents who confirmed that their firm secured at least one public contract, a difference significant at 1 percent. The number of *white flag* contracts obtained by both groups of respondents is not significantly different at conventional levels. Not acknowledging being a contracting firm is unlikely to be a strategy used by corrupt firms to hide their behaviour.

The contract value is just under thresholds for consultation/tender

The contracting method – open tender, consultation or direct purchase – should be determined by the value and category (supplies, intellectual services, services or works) of the contract. Estimating the value of the contract is under the responsibility of the contracting authority. This authority must make a sincere, reasonable assessment based on its actual needs and the rates usually charged for these services (Lesné and Hanitra, 2016).

A contract with a value slightly below the contracting thresholds for consultation or open tender often betrays a will to modulate the value of the contract in order to maximize it, while taking care not to break the contracting rules applying to that particular contract. This practice is common in Madagascar, as illustrated by Figure 3.4 for the case of supply contracts.

As indicated in Table 3.1, supply contracts are to be awarded by open tender if the contract value is higher than 80 million Ariary. Lower-value supply contracts may be awarded via a consultation. Figure 3.4 shows that a large number of contracts for supplies are awarded just below the open tender threshold, suggesting that the value of many of these contracts has not been determined objectively but so as to avoid an open tender. This practice is not, however, necessarily caused by corruption. A public official may wish to resort to a consultation in order to avoid the administrative burden of an open tender or to expedite the procedure. In any case, circumvention of competitive bidding rules is a definite sign of mismanagement, itself symptomatic of a corruption risk.

In addition to contracts in blatant breach of legal rules regulating contracting methods, the refined indicator of corruption risk in public procurement classifies as corruption-prone contracts with a value of less than 5 percent under the maximum limits for open tender or consultation. For all categories, 1,202 public contracts awarded in 2013 or 2014 are of a value less than 5 percent under the maximum limit for open tender or consultation.

The contract is suspected of being artificially split

Another way of circumventing competitive bidding rules is to split the contract into several smaller contracts with a value lower than the maximum limit of the desired contracting method.

Contracts awarded by a contracting authority for the same purpose and secured by the same contractor in the same year are considered at risk of corruption in the refined version of the *red flag* indicator if their combined value exceeds the legal threshold of the contracting methods chosen for all these smaller contracts²⁷.

²⁷In order to do this, I classified the 34,930 contracts into 30 separate groups according to the description of their purpose provided in the ARMP database.

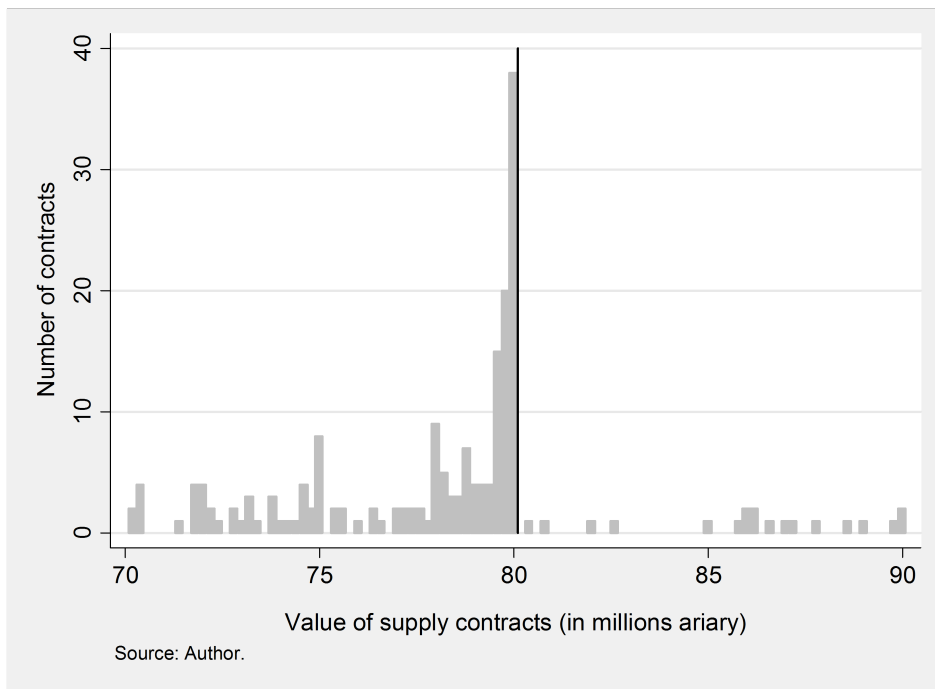


Figure 3.4: Distribution of contracts for supplies by their value, for contract value between 70 and 90 million Ariary

2,039 public contracts, or 6 percent of all public contracts awarded in 2013 and 2014, are suspected of being artificially split according to this detection method and classified as corruption-prone²⁸.

The contract is awarded via an exceptional purchase mechanism

As explained in the Madagascar Public Procurement Code, so-called exceptional procedures allow the competitive bidding rules normally required to be waived. These exceptional purchase mechanisms are the limited tender and the over-the-counter contract (*gré à gré*). A limited invitation to tender differs from an open invitation to tender in that applicants authorized to bid are pre-selected by the contracting authority. A *gré à gré* is negotiated directly between the contracting authority and the firm of its choosing, no matter the value of the contract.

Recourse to exceptional procedures by contracting authorities must be approved by the ARMP prior to the award of the contract, and only for reasons permitted by law. However, as Auriol *et al.* (2016) showed, contracting authorities may also request exceptional procedures with the sole purpose of avoiding regular competitive bidding rules. Since determining whether this recourse is justified or not is not possible with the ARMP data, I decided for this refined version of the *red flag* indicator to classify as corruption-prone all contracts awarded via an exceptional procedure.

Out of the 34,930 contracts awarded in 2013 and 2014, 144 were attributed with an exceptional procedure, 104 of them by limited tender and 40 by *gré à gré*. These contracts are often of large value. The median value of contracts awarded via an exceptional procedure is 200 million Ariary to compare with 2 million Ariary for contracts attributed with a regular contracting method. Half of these exceptional contracts (50 percent) are for public works and 34 percent for supplies. Finally, almost all these contracts (97 percent) originate from public authorities located in the capital city, compared to 55 percent for regular contracts.

Results of the refined *red flag* indicator

The refined *red flag* indicator identifies 21,928 corruption-prone contracts out of 34,930, i.e. a proportion of 62.8 percent. This is 1,359 more contracts

²⁸In order to make the refined *red flag* indicator robust to the various contract-splitting schemes, each firm that secured a contract suspected of being artificially split is assigned an additional *red flag* count of $1/n$ for this contract, with n being the number of contracts affected by the split. Without this correction, a firm with a contract split into three lower-value contracts, for example, would be considered to have more experience of corruption than a company with a contract divided into two lower-value contracts, even if the overall value of these contracts is the same.

than the first version of the *red flag* indicator. The two versions of the indicator are nonetheless highly correlated, with a Pearson's linear correlation coefficient of 0.92.

Findings remain largely unchanged with the refined *red flag* indicator (Appendix 3.E). The experience of corruption still has a robust influence on the probability of respondents providing a zero response to the corruption question. The scale of the effect is virtually identical to that of the original *red flag* indicator. The average marginal effect of one additional *red flag* contract secured by firms on their probability of estimating a zero magnitude of corruption in public procurement is 0.85 percentage point in the *extended model*, to compare with 0.84 percentage points with the original indicator.

3.7 Conclusions and implications

Researchers are usually convinced that reticence of survey respondents to express a sincere opinion about corruption contributes to bias downwards estimates of corruption obtained from survey data.

This bias is difficult to estimate, however, due to the difficulty of measuring both reticence and corruption. It is therefore not surprising that academic work on the effect of reticence on indicators of corruption has so far generated contradictory results (Jensen *et al.*, 2010; Clarke *et al.*, 2015).

This Chapter suggests a new proxy indicator for measuring corruption in public procurement. This measurement tool is used to evaluate how the experience of corruption from firm owners and managers affect their choice to take part in surveys and answer questions asking about their experience and perception of corruption.

Experience of corruption in public procurement is measured at firm-level by the number of contracts secured by the firm that failed to comply (or circumvented) legal rules regarding contracting methods. Applied to contracts awarded in Madagascar in 2013 and 2014, this indicator shows that the experience of corruption is not a significant criterion for firm owners and managers to take part in surveys and to respond to a question asking them about their experience and perception of corruption in public procurement. However, firms which secured a larger number of suspicious public contracts are more likely to explicitly deny the existence of corruption in public procurement contracts for which they can bid. Securing one additional corruption-prone contract increases the likelihood of respondents producing a zero estimate of bribery by 0.84 or 0.85 percentage points, depending on the version of the proxy indicator used. This is a sizeable effect since the proportion of zero estimates in the sample of respondents is 15.7 percent.

Denying the existence of corruption might be one way for corrupt firms to reduce the risk of disclosing their illegal practices to the organisation carrying out the survey and to public authorities. These respondents may

also be tempted to lie in order to influence the overall survey results, notably to reduce the average estimation of bribery in public procurement in their business sector.

The consequences of such strategic behaviour is that corruption is likely underestimated in business surveys²⁹. The higher the share of corrupt firms in the surveyed sample, the greater the negative bias, a finding that is a particular threat to international comparisons of corruption levels based on survey data. Further research is needed, however, to confirm these findings and to improve further our understanding of respondents' answering behaviour to business surveys.

²⁹Chapter IV provides an quantification of the size of the bias resulting from respondents lying in their estimation of the magnitude of bribery.

Chapter 4

Identifying Reticent Respondents with Indirect Questioning

***Abstract:** In this Chapter, I propose an alternative method to Azfar and Murell (2009) for detecting reticent respondents in firm surveys and for correcting indicators of corruption from the bias associated with the presence of reticent respondents in the survey sample. This method uses two questions asking respondents to estimate how much bribes they paid and how much bribes firms similar to theirs pay on average. Applying this method to a firm survey in Madagascar, I find that the frequency of bribery is underestimated by as much as 47 percent if the issue of reticence is not taken into account.*

4.1 Introduction

A well-known issue with firm survey data on bribery is that respondents are not always candid when answering sensitive questions about this illegal and socially undesirable behaviour. Firm owners and managers may believe that questions about bribery are too intrusive, or that providing an honest answer may harm them. They may be reluctant to report the true extent of their involvement in corrupt acts because they are afraid of retaliation from public authorities or because they fear social disappointment from the interviewer or third parties. Some determinants of candour are related to respondents' personal characteristics, including whether they have anything to hide (Tourangeau and Yan, 2007 ; Schaeffer, 2000), while others are linked to the socio-political environment in which firms operate (Jensen *et al.*, 2010).

I follow Azfar and Murrell (2009) in defining in this context a reticent respondent as “*one who gives knowingly false answers with a nonzero probability when honest answers to a specific set of survey questions could lead to the inference that the respondent might have committed a sensitive act*”.

Reticent respondents’ answering behaviour to sensitive questions is systematically different from that of candid respondents. Because reticent respondents have the tendency to under-report socially undesirable behaviour, indicators of bribery are likely to be downward biased the more reticent respondents in the sample of surveyed firms.

Determining the size of this bias requires a method to identify reticent respondents in order to isolate their answers from those of candid respondents. Until recently, such a method was unknown. For lack of a proper detection method of reticent respondents, survey researchers have developed various techniques to correct their survey-based indicators of bribery from the measurement bias caused by reticence. One such technique used by the World Bank with its *Enterprise Surveys* is to interpret refusal from respondents to answer questions about their personal experience of bribery as implicit admission of guilt. As revealed in Chapter III, this *ad-hoc* practice may generate more damage than benefits by driving indicators even further away from what they initially intended to measure.

In 2009, Azfar and Murrell proposed an innovative approach to identify reticent respondents and to correct indicators of bribery accordingly, based on the randomised response questioning (RRQ) method.

The RRQ survey technique was first introduced by Warner (1965) with the aim to reduce reticence to honestly answer sensitive questions by adding a random component to respondents’ answers which allows them to answer honestly while keeping their true behaviour concealed. In its most basic form, the RRQ method asks respondents to toss a coin each time before answering a series of sensitive questions implying a positive response if the respondent actually has had experience of the sensitive behaviour subject to under-reporting. The respondent’s answer then partly depends on the outcome of the toss. If the coin comes up heads, respondents are asked to respond sincerely. If tails come up, respondents must always answer positively, whatever their true answer is. Everyone except the respondent is left unclear about whether a positive answer is the result of the coin tossing or an actual admission of the sensitive behaviour.

However, because the two coin sides each have a 50 percent probability of being drawn, it is straightforward to compute the actual frequency of genuine positive answers in the sample of surveyed firms by subtracting from the actual number of “Yes” answers the additional positive answers resulting from the probability of tossing the coin heads.

Recent meta-analyses of RRQ studies have concluded that the RRQ technique has had limited success in reducing reticence in surveys (Lensvelt-Mulders *et al.*, 2005). Respondents appear to be reticent even when answer-

ing randomised response questions. A non-trivial number of survey respondents do not follow the RRQ procedure by choosing to answer “No” even if their toss of the coin requests them to answer “Yes”.

Based on this observation, Azfar and Murrell (2009) reversed the logic of the RRQ procedure so as not to reduce reticence but to identify respondents whose response behaviour indicates that they are reticent. They labelled as reticent respondents 10 percent of their sample of 514 Romanian businesses, those who answered systematically “No” to seven randomised response questions despite the probability of obtaining seven tails in seven tosses being extremely low. They later presented evidence that respondents they identified as reticent behave systematically differently from other respondents in terms of how they respond to questions about corruption.

According to Azfar and Murrell, respondents who answered “Yes” to at least one of the seven randomised response questions, but less often than what the probabilities would predict, are also likely to be reticent. Estimating the actual share of reticent respondents in their sample of Romanian firms to be 35 percent, and with the conservative assumption that reticence is uncorrelated with the respondent’s experience of bribery, they found that the frequency of bribery would be 19.9 percent if only candid respondents were to be surveyed instead of 14.9 percent when the reticence bias is ignored.

Using the same technique to identify reticent respondents, Clausen *et al.* (2010) also found that reticent respondents to a survey in Nigeria acknowledged they paid bribes to public officials significantly less often than respondents believed to be candid. Clarke *et al.* (2015) identified similarly large under-reporting of bribery from reticent respondents to firm-level surveys in Sri Lanka and Bangladesh. Without reticent respondents in the sample of surveyed firms in these two countries, at least 22 percent of managers whose firm had recently been inspected would report that tax inspectors have expected or asked them for bribes during their inspection. Looking at the survey data without excluding reticent respondents, only 11 percent of managers of inspected firms acknowledged such illegal payments.

While the idea of using randomised response questioning to identify reticent respondents is an undeniable breakthrough in the field of survey-based corruption measurement, this method has important drawbacks. First, it requires surveyors to explain to all surveyees individually the rules of the randomised response questioning and respondents to toss a coin before answering every randomised response question. This increases the length and complexity of the survey, with a higher risk of respondents deciding to break off the survey before its end. In Clausen *et al.* (2010), the surveyors who administered the questionnaire of the Nigeria firm survey determined after the interview whether, in their opinion, the respondent understood the randomised response instructions. Surveyors reported that as much as 14 percent of respondents did not understand how to answer randomised response questions. Respondents who were perceived by surveyors as not

having understood the functioning of the randomised response questioning procedure were many to respond “No” to most or all randomised questions. While Clausen *et al.* (2010) rightfully discarded these observations from their subsequent analyses of answering behaviour from reticent and candid respondents, confusion over randomised response instructions on the part of survey respondents causes a non-negligible loss of information. It is even possible that some respondents are reluctant to answer randomised questions either because they do not understand the instructions or the objective of the procedure, without also being reluctant to honestly answer simpler questions asking them about their experience or perception of corruption.

A second limit of RRQ to detect respondents reticent to answer questions about corruption is that randomised questions usually ask respondents about sensitive behaviour unrelated to corruption. An example is Azfar and Murrell (2009) for which one of the seven randomised questions used to detect reticence asks respondents whether they ever made a misstatement on a job application. Others randomised questions relate to personal and business tax fraud. Some respondents who feel uneasy to report bribery because they pay bribes regularly may feel fine discussing other topics they consider less sensible, possibly because they are not involved in those other socially reprehensible acts. Because reticence is context-specific, using information about sensitive behaviour unrelated to corruption may not be a successful way to identify reticent respondents to corruption-related questions.

Azfar and Murrell (2009) considered that only those respondents who answered “No” to all their seven randomised questions could be safely classified as reticent. Determining how likely other respondents are reticent requires to know the actual prevalence of the behaviours evaluated in all randomised questions for the population of firms, an information that is rarely available. Clarke *et al.* (2015) used instead the number of “No” answers for their measure of reticence. Indetermination about the correct way to deal with the whole set of respondents who answered too many times “No” according to coin tossing probabilities is another limit of the RRQ method.

Finally, correcting indicators of bribery from the bias associated with the presence of reticent respondents in the sample raises a last issue. Azfar and Murrell (2009) and others removed reticent respondents from the computation of their corrected indicators, assuming that reticence and guilt are uncorrelated. This is unlikely to be true as shown in Chapter III. Reticent respondents are more likely to have paid bribes than candid respondents, in which case the correction proposed by Azfar and Murrell is imperfect.

In this Chapter, I propose an alternative technique to detect reticent respondents and correct corruption indicators from the reticence bias using direct and indirect questioning. I apply this technique on a firm survey in Madagascar. The Chapter is organised as follows: sections 4.2 to 4.5 introduce the detection technique, section 4.6 presents the survey and section 4.7 a corrected indicator for the frequency of bribery. Section 4.8 concludes.

4.2 Direct versus indirect questioning

The innovative method for detecting reticent respondents I propose in this Chapter involves two different approaches for asking questions about bribery in surveys: direct questioning and indirect questioning. In this section, I briefly present these two approaches.

4.2.1 Direct questioning

To determine how much bribes a given population of firms need to pay, on average, when interacting with public officials, a researcher may carry out a survey on a representative sample of this population of firms and ask their owner or manager about the amount of bribes personally paid by their firm.

The magnitude of bribery, the average amount of bribes paid by all firms, can then be estimated by computing the average amount of bribes reported by the surveyed firms. The phrasing of this question is referred to as “direct questioning” as it requests respondents to answer the question based on their own experience.

The World Bank’s *Enterprise Surveys*, for example, rely on direct questioning to evaluate the proportion of firms who pay bribes to obtain public services such as a water, power or telephone connection, a construction permit or a licence to import goods or to operate their business.

Some respondents perceive direct questioning to be intrusive or threatening and as a consequence may be reluctant to answer such questions truthfully. To reduce reticence, survey researchers have developed over time various reticence-reducing techniques applied to the design and conduct of surveys on sensitive topics, including the randomised response questioning (RRQ) method presented in the introduction of this Chapter.

4.2.2 Indirect questioning

Another commonly used technique to reduce reticence is to ask sensitive questions indirectly (Fisher and Tellis, 1998). In this case, survey questions do not ask about the respondent’s own experience of the behaviour subject to under-reporting but about their perception of the behaviour of individuals similar to them. One of the first applications of indirect questioning in corruption surveys was made in the 1998 World Bank’s *Ugandan Industrial Enterprise Survey* designed and carried out by Reinikka and Svensson. In one of the chapters of the 2001 book *Uganda’s Recovery* edited by Reinikka and Collier, Svensson presented the methodology he and Reinikka adopted to improve the accuracy of corruption data collected with this survey. Indirect questioning was notably favoured over direct questioning in order to encourage respondents to answer honestly by ensuring that their answers were not self-incriminating (Svensson, 2001).

Like RRQ, indirect questioning gives respondents the opportunity to distance themselves from their answers. Indirect questioning allows firm executives to acknowledge the existence of bribery in their sector of activity without requiring them to admit to having personally paid any bribes.

Asking questions about bribery indirectly is now standard practice in corruption surveys. The World Bank's *Enterprise Surveys* questionnaire contains several questions about bribery that are asked indirectly. One of them asks firm owners and managers to estimate the amount of bribes paid annually by firms like theirs. The exact phrasing of the question is:

We've heard that establishments are sometimes required to make gifts or informal payments to public officials to "get things done" with regard to customs, taxes, licenses, regulations, services etc. On average, what percent of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose?

Each respondent is requested to report his or her own estimation for the magnitude of bribery for the set of firms that are similar to theirs. An estimator for the magnitude of bribery in the population of firms is the average estimate of the magnitude of bribery supplied by all sampled firms.

4.2.3 Is indirect questioning successful in reducing reticence?

Using data from a survey of 144 construction firms in Afghanistan, Clarke (2012) showed that firms that do not bid for government contracts, possibly because they are averse to paying bribes, are more likely than bidding firms to state that firms like theirs make informal payments or gifts to "get things done" with public entities. For Clarke, this result can be explained by the fact that firms, when asked to answer questions phrased indirectly, do it literally. They answer indirect questions using their perception of how much firms similar to theirs pay in bribes and not only their own experience.

Despite the fact that respondents seem to estimate what other firms pay in bribes, estimates of a zero magnitude of bribery is usually common in firm surveys. In the survey of construction firms in Afghanistan, only 38 percent of firms that bid on government contracts reported a strictly positive magnitude of bribery in relation to these contracts (Clarke, 2012). A zero magnitude of bribery means that not a single firm similar to the respondent's firm has paid any bribes, which may seem particularly unlikely in countries like Afghanistan known to be strongly affected by corruption.

Respondents who are reticent to report how much bribes they paid may also be reticent to estimate what other firms typically pay in bribes (Clarke *et al.*, 2015). Azfar and Murrell (2009) actually found that respondents are equally reticent to answer direct and indirect questions about bribery, suggesting that "asking about others does not decrease reticence".

4.3 Using indirect questioning to detect reticence

In their 2009 paper, Azfar and Murrell noted that the randomised response questioning (RRQ) procedure is not effective in eliminating reticence, despite the fact that this survey technique was initially proposed to allow respondents to answer sensitive questions honestly while ensuring confidentiality. Based on this observation, they reversed the logic of RRQ so as not to reduce reticence but to identify reticent respondents. I follow the same approach with indirect questioning to detect which respondents are reticent and to correct indicators of bribery from the measurement bias caused by reticence.

4.3.1 The frequency versus magnitude of bribery

In Chapter II, I showed that indicators for the amount of bribes paid by firms (i.e. the magnitude of bribery) can be very sensitive to the way the survey questions are phrased. Asking firms to estimate how much bribes firms similar to theirs pay annually either as a percentage of their turnover or in monetary terms considerably affects their answers. Survey respondents with at least two years of experience in running a business are more consistent in their estimates of the magnitude of bribery formulated either as a percentage of turnover and in monetary value than their less experienced counterparts.

Because of this, I follow Clarke *et al.* (2015), Azfar and Murrell (2009) and others in evaluating the share of respondents who paid at least one bribe (i.e. the frequency of bribery), rather the average amount of bribes paid.

4.3.2 The cost-benefit analysis of an honest answer

Firm owners and managers are sometimes reluctant to discuss sensitive issues relating to their business operations. They may find it uneasy to be asked about their experience of a socially undesirable and legally reprehensible behaviour like bribery, especially if they have something to hide.

The decision of answering a question about bribery can be modelled in the framework of the rational choice theory in which surveyees operate a cost-benefit analysis comparing the benefits and the costs of providing an honest answer to the question (Krumpal, 2013). Among the benefits are the satisfaction of respecting social norms of honesty and cooperation, an interest in voicing concerns about the issue of corruption or the will to contribute meaningfully to the survey. The costs of an honest answer for firms are the social prejudice of admitting to an interviewer their involvement in corrupt acts or the threat of legal sanctions or other forms of negative retaliation such as a worsening relationship with public officials.

Respondents choose to answer the question honestly if their perceived gains outweigh their costs. In contrast, reticent respondents believe they have too little to gain from disclosing socially undesirable behaviour to the

interviewer compared to the costs of revealing this information. Because they fear that their answer might be interpreted as an explicit or implicit admission of wrongdoing, reticent respondents seek to distance themselves as much as possible from the eventuality of involvement in corrupt acts.

4.3.3 Strategic answers to indirect questions

Indirect questions ask respondents to estimate how much firms *similar to theirs* pay in bribes, on average. In Chapter III, I showed that firms that secure more contracts identified at risk of corruption tend to deny more frequently than less corrupt firms the existence of bribery in public procurement. An interpretation of this result is that respondents involved in corruption may choose to deny the existence of bribery altogether for fear of self-incrimination, even if the question does not ask them explicitly about their personal experience of bribery¹.

In Chapter III, I also showed that the experience of corruption in public procurement is not related to the likelihood of surveyees refusing to participate in a survey about this topic or to answer a sensitive question about the average percentage value of public contracts paid in bribes by firms similar to theirs. Non-response is therefore unlikely to be a strategy used by corrupt respondents to hide their behaviour.

In that respect, respondents with personal experience of corruption appear to act very much like reticent respondents, knowingly lying to direct but also to indirect questions about corruption when honest answers could lead to the interpretation that they have been involved in corrupt acts.

4.3.4 Correcting the frequency of bribery from the reticence bias with respondents' answers to indirect questioning

Despite recent evidence challenging this view (Clarke, 2012), answers to indirect questions asking respondents to estimate the average amount of bribes paid by firms *like theirs* have long been interpreted as if they reflected respondents' own experience of corruption. An example is Svensson (2003) who looked for correlates to the probability of firms in Uganda having to pay a positive amount of bribes, deriving this probability of a positive payment from an indirect question asking surveyees to estimate how much

¹A more subtle way to hide personal experience of corruption is to underestimate the amount of bribes paid by similar firms while still estimating a strictly positive magnitude of bribery. This strategy is clearly suboptimal as reticent respondents are bothered even by a slight probability of appearing corrupt. It may however be used by sophisticated respondents who understand that stating that not a single firm similar to theirs has paid any bribes may seem insincere.

bribes firms similar to theirs *typically pay each year*². If they are answered literally, no information about the proportion of firms paying bribes can be deducted from indirect questions asking about the magnitude of bribery, unlike questions asking directly to respondents how much bribes they paid.

Direct questioning can serve as a basis to estimate the frequency of bribery in a population of firms. Unfortunately, the issue of reticence threatens the reliability of such survey-based indicators. Some respondents who report that they did not pay any bribes are sincere while others are not truthful. Because the utility of respondents to provide an honest estimation, the result of the cost-benefit analysis which defines reticence, is not observable, one cannot easily determine which estimates are trustworthy.

While indirect questioning is unable to provide an estimation for the frequency of bribery, it does generate useful information about the reticence status of respondents. Sincere respondents to an indirect question asking them to evaluate the average amount of bribes paid by firms similar to theirs compute their estimation of the magnitude of bribery using a certain number of firms as references. These references may obviously include their own firm, but also likely involve a number of their competitors or business partners of which they possess a certain degree of knowledge about their operations. This knowledge can be first-hand evidence but also mere hearsays if they are perceived by respondents to be sufficiently credible. Respondents may have different views about the minimum number of firms they must know enough in terms of their experience of bribery to generate a credible estimation for the average amount of bribes paid by all firms similar to theirs³.

As discussed in the previous section, indirect questioning does not appear to be an effective method to foster candour. Respondents who are reticent to estimate how much bribes their firm paid are also likely unwilling to honestly estimate the average amount of bribes paid by other firms. As the model presented in the next section reveals, respondents who report a zero average amount for bribes paid by firms similar to theirs - or alternatively that not a single firm similar to theirs paid any bribes - are very likely to be reticent respondents. The more firms respondents use as references, the less likely those who report a zero magnitude of bribery are sincere⁴.

²The exact question was: "Many business people have told us that firms are often required to make informal payments to public officials to deal with customs, taxes, licenses, regulations, services, etc. Can you estimate what a firm in your line of business and of similar size and characteristics typically pays each year?" (Fisman and Svensson, 2007).

³This minimum number of reference firms also depends on the heterogeneity in terms of how much firms pay in bribes: respondents need less reference firms if they believe that all firms must pay more or less the same amount of bribes than in the case of a large variability in firms' experience of bribery.

⁴If indirect questioning actually reduces reticence, this detection method of reticent respondents based on indirect questioning fails to identify respondents who lie when responding to the direct question but do answer honestly the indirect question.

4.4 A model of response behaviour

A survey asks N firm owners and managers about the amount of bribes they paid to public agents when performing an administrative procedure they all had to complete. The survey also asks each of these N firms to evaluate the average amount paid by all surveyed firms, them included. The former question is called “direct”, while the later is referred to as “indirect”.

4.4.1 Direct questioning

The estimation by respondent $i \in \{1, \dots, N\}$ of the amount of bribes he/she paid, denoted cor_i^D , is defined as follows:

$$cor_i^D = \begin{cases} cor_i^*(X_i) + \varepsilon_i & \text{if } U(X_i, Y = D) \geq 0 \text{ and } \varepsilon_i \geq -cor_i^*(X_i) \\ 0 & \text{if } U(X_i, Y = D) \geq 0 \text{ and } \varepsilon_i < -cor_i^*(X_i) \\ 0 & \text{if } U(X_i, Y = D) < 0 \end{cases} \quad (4.1)$$

With $cor_i^*(X_i) \geq 0$ the real amount of bribes paid by firm i which is a function of its characteristics X_i . The error term ε_i of the estimation by respondent i of the amount of bribes $cor_i^*(X_i)$ he/she actually paid is a zero-expectation symmetric random variable⁵ of variance $\sigma_{\varepsilon_i}^2$.

$U(X_i, Y = D)$ or U_i^D is a function which evaluates the utility of respondent i to answer the direct question honestly. Firm characteristics X_i affect the benefits and costs of an honest answer, together with a vector Y of features of the survey and question. The vector D is the evaluation of Y when the question is direct. If the benefits for respondent i to answer honestly outweigh the costs of an honest answer, the utility U_i^D is positive or null⁶ and respondent i chooses to answer the direct question candidly.

Those respondents are aware that $cor_i^*(X_i)$, the actual amount of bribes paid cannot be a negative number. If their estimation $cor_i^*(X_i) + \varepsilon_i$ is strictly negative, respondents will adjust it by reporting instead a zero amount.

Reticent respondents to the direct question have a strictly negative utility U_i^D . No matter whether they actually paid bribes or not, reticent respondents will systematically report that they did not paid any bribes⁷.

⁵The distribution of the error term being centered at zero means that the estimation by respondent i of $cor_i^*(X_i)$ is not systematically biased, either positively or negatively.

⁶Without loss of generality, respondents answer honestly if their utility is null.

⁷For simplicity, I assume that reticent respondents never admit bribes. A more general model could allow for reticent respondents to sometimes admit bribes, in line with the definition of a reticent respondent proposed by Azfar and Murrell (2009). Reticent respondents who never admit bribes may be seen as displaying the highest level of reticence among reticent respondents. The model presented in this Chapter focuses on identifying respondents belonging to this sub-population of highly reticent respondents.

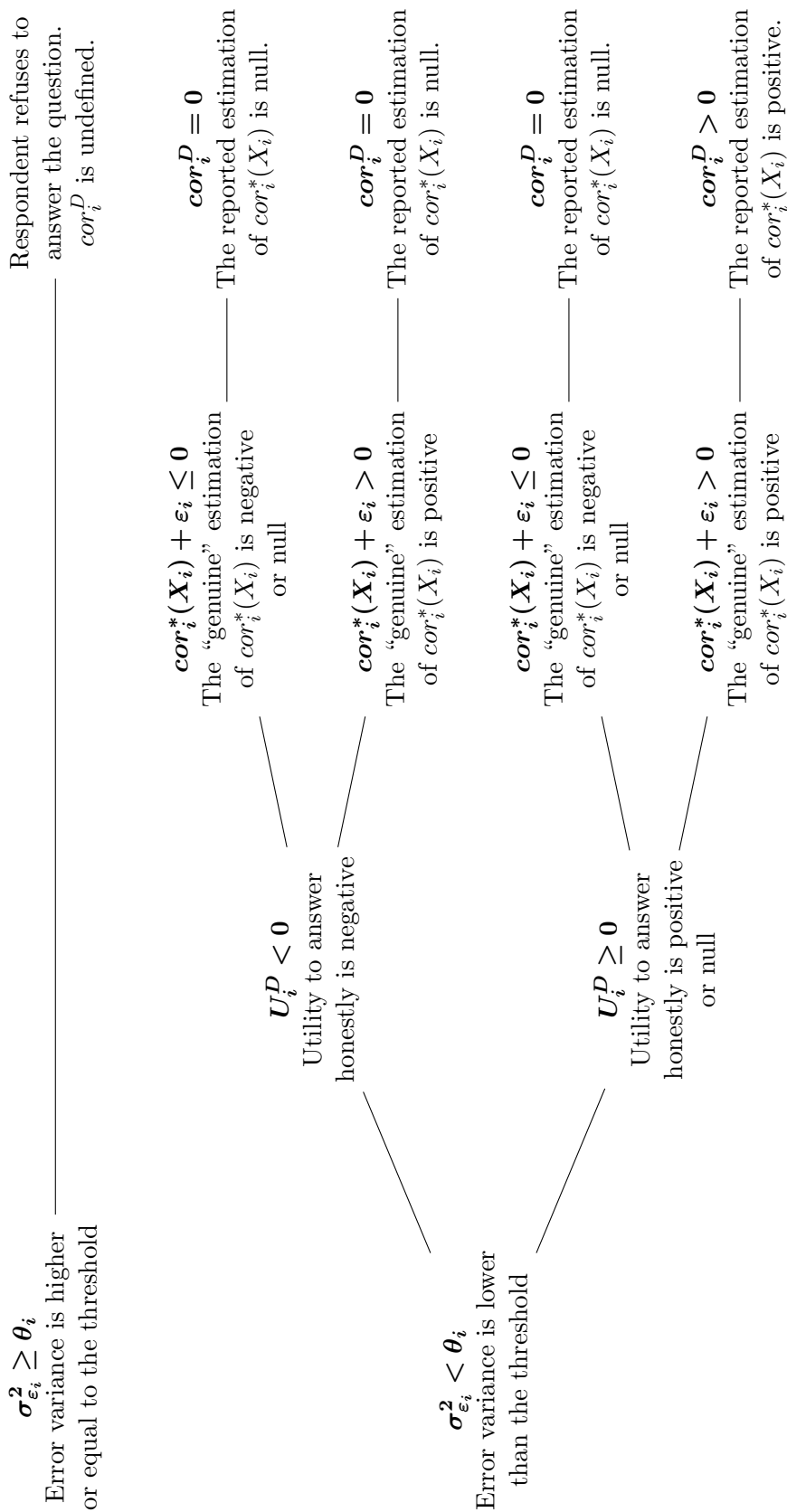


Figure 4.1: Outcome tree for cor_i^D

Finally, when the variance of the error term is higher than a threshold θ_i self-defined by respondent i ($\sigma_{\varepsilon_i}^2 > \theta_i$), cor_i^D is undefined and respondent i refrains from answering the question. The threshold θ_i can be interpreted as the highest level of uncertainty that is acceptable for respondent i to provide an credible estimation of the amount of bribes that he/she paid. From the N surveyed firms, only the subset M of firms whose error variance is below their self-defined threshold agree to answer the direct question. Figure 4.1 summarizes the process leading to the definition of cor_i^D by respondent i .

4.4.2 Indirect questioning

The indirect question asks all respondents to estimate the average amount of bribes paid by the whole set of N firms. Concretely, respondent $i \in \{1, \dots, N\}$ estimates how much bribes he/she paid as well as the amount of bribes paid by every other firms in N , and compute an average estimate for those N firms. This estimation, denoted cor_i^I , is defined as follows:

$$cor_i^I = \frac{1}{N} \left(cor_i^D + \sum_{j=1}^{N-1} cor_{ij}^I \right) \quad (4.2)$$

Firm j is any firm in N other than firm i . cor_{ij}^I is the estimation by respondent i of bribes paid by firm j , defined as follows, $\forall j \neq i \in \{1, \dots, N\}$:

$$cor_{ij}^I = \begin{cases} cor_j^*(X_j) + e_{ij} & \text{if } U(X_i, Y = I) \geq 0 \text{ and } e_{ij} \geq -cor_j^*(X_j) \\ 0 & \text{if } U(X_i, Y = I) \geq 0 \text{ and } e_{ij} < -cor_j^*(X_j) \\ 0 & \text{if } U(X_i, Y = I) < 0 \end{cases} \quad (4.3)$$

The variable $cor_j^*(X_j) \geq 0$ is the amount of bribes really paid by firm j which is a function of its characteristics X_j . $U(X_i, Y = I)$ or $U_i^I < 0$ is the utility function of respondent i to honestly estimate the amount of bribes paid by all firms in N . The arguments of this utility function are a vector of characteristics of firm i and the vector I of survey and question characteristics Y when the question is asked indirectly.

The estimation error by respondent i of the amount of bribes paid by firm j is written e_{ij} . This error term e_{ij} is a zero-expectation symmetric variable with variance $\sigma_{e_{ij}}^2$, $\forall j \neq i \in \{1, \dots, N\}$.

Whenever respondent i finds a strictly negative value for the amount of bribes paid by any firm in N , he/she corrects it by replacing this negative value with a zero estimate of bribes for that firm.

Respondent i answers the indirect question honestly only if he/she has a positive or null utility U_i^I . If this utility is evaluated to be strictly negative ($U_i^I < 0$), respondent i will always report a zero estimate for the average amount of bribes paid by the N firms.

As discussed in the previous section of this Chapter, indirect questioning has been introduced in corruption business surveys in order to reduce reticence from firms to reveal sensitive information. Providing an average estimate of bribes paid by firms in their line of business rather than how much they paid may encourage respondents to disclose useful information about the magnitude of bribery without admitting personal involvement in corrupt acts. In reality, it is doubtful whether indirect questioning is actually successful in reducing reticence of survey respondents to answer corruption questions honestly. In our utility framework, this means that the benefit-cost ratio of an honest answer to the indirect question is either higher or equal to that of the direct question. Some respondents who deliberately lie when answering the direct question may answer honestly the indirect question. Formally, $\forall i \in \{1, \dots, N\}$: $\Pr(U_i^I \geq 0) \geq \Pr(U_i^D \geq 0)$.

Under the assumption of independence of estimations by respondent i of the amount of bribes paid by each firm in N , the variance of his/her “genuine” estimation of the magnitude of bribery is: $\sigma_{\varepsilon_i}^2 + \sum_{j=1}^{N-1} \sigma_{e_{ij}}^2$.

Respondent i agrees to answer the indirect question as long as the variance of his/her estimation is lower than $N\theta_i$. If so, cor_i^I is defined. In the opposite case, $\sigma_{\varepsilon_i}^2 + \sum_{j=1}^{N-1} \sigma_{e_{ij}}^2 \geq N\theta_i$ and respondent i refuses to answer the indirect question. Only the subset L of firms in $\{1, \dots, N\}$ meet this response condition and agree to answer the indirect question.

Finally, I assume that respondent i is less uncertain of the amount of bribes he/she paid than what every other firm in N has paid: $\sigma_{e_{ij}}^2 > \sigma_{\varepsilon_i}^2, \forall j$.

4.4.3 Implications of the model

Direct questioning has a lower (or equal) non-response rate

Since $\forall j : \sigma_{e_{ij}}^2 > \sigma_{\varepsilon_i}^2$, we know that $\sigma_{\varepsilon_i}^2 + \sum_{j=1}^{N-1} \sigma_{e_{ij}}^2 > N\sigma_{\varepsilon_i}^2$. If the variance of the estimation error for the amount of bribes paid by respondent i is higher than the threshold of the response condition ($\sigma_{\varepsilon_i}^2 > \theta_i$), the variance of the estimation by respondent i of the average amount of bribes paid by the N firms is necessarily higher than $N\theta_i$. In words, respondent i never answers the indirect question if he/she also refuses to answer the direct question.

The reverse scenario is possible: $\sigma_{\varepsilon_i}^2 + \sum_{j=1}^{N-1} \sigma_{e_{ij}}^2 > N\theta_i$ with $\sigma_{\varepsilon_i}^2 \leq \theta_i$. In this case, respondent i agrees to answer the direct question. However, as the level of uncertainty of respondent i with regards to how much bribes firms in N other than his/hers have paid ($\sum_{j=1}^{N-1} \sigma_{e_{ij}}^2$) is relatively large, he/she refrains from answering the indirect question.

Therefore, the probability of respondent i refusing to answer the indirect question is at least as high as the direct question. This translates into a higher (or equal) non-response rate for this question as the set of M firms who agree to answer the direct question is at least as large as the set of L firms who accept to answer the indirect question among the N firms.

Direct questioning has a higher share of zero estimates

Two types of respondents report a zero estimate of bribery with direct questioning: those who sincerely believe they have not paid any bribes, and those who think they paid a positive amount of bribes but choose to lie deliberately by denying such payment. The probability of respondent i reporting no bribes paid by his/her firm, among the M respondents who agreed to answer the question, is the following⁸:

$$\Pr(\text{cor}_i^D = 0) = \Pr(U_i^D \geq 0) \Pr(\text{cor}_i^* + \varepsilon_i \leq 0 | U_i^D \geq 0) + \Pr(U_i^D < 0) \quad (4.4)$$

Similarly, the probability of respondent i to estimate a zero average of bribes for all firms in N , for those L respondents who accepted to answer the indirect question, can be written as follows:

$$\Pr(\text{cor}_i^I = 0) = \Pr(U_i^I \geq 0) \Pr(\text{cor}_i^I = 0 | U_i^I \geq 0) + \Pr(U_i^I < 0) \quad (4.5)$$

With:

$$\Pr(\text{cor}_i^I = 0 | U_i^I \geq 0) = \Pr(\text{cor}_i^* + \varepsilon_i \leq 0 | U_i^I \geq 0) \times \prod_{j=1}^{N-1} \Pr(\text{cor}_j^* + e_{ij} \leq 0 | U_i^I \geq 0) \quad (4.6)$$

Since $\Pr(\text{cor}_j^* + e_{ij} \leq 0) \leq 1$ for all j firms⁹, $j \neq i \in \{1, \dots, N\}$, the probability that $\text{cor}_i^I = 0$ conditional on $U_i^I \geq 0$ gets closer to 0 as N increases. As equation (4.6) shows, $\Pr(\text{cor}_i^I = 0 | U_i^I \geq 0)$ approaches zero at an exponential rate with respect to the number of firms N . With $N \rightarrow \infty$:

$$\Pr(\text{cor}_i^I = 0) = \Pr(U_i^I < 0) \quad (4.7)$$

As N grows large, it is more and more likely that all respondents who estimate the magnitude of corruption in N to be 0 (or alternatively, that respondents estimate that no firm in N has paid any bribes) are reticent.

To illustrate how likely an honest respondent would estimate a zero magnitude of bribery in N , let us first consider the situation in which not a single firm in N has actually paid any bribes.

⁸The arguments X_i and X_j are omitted from subsequent equations for reasons of space.

⁹ $\Pr(e_{ij} > 0) > 0, \forall j$ as $E(e_{ij}) = 0$ and $\sigma_{e_{ij}}^2 > 0$ since $\sigma_{e_{ij}}^2 > \sigma_{\varepsilon_i}^2$. With $\text{cor}_j^* \geq 0$, $\Pr(\text{cor}_j^* + e_{ij} > 0) > 0$ and $\Pr(\text{cor}_j^* + e_{ij} \leq 0) \leq 1, \forall j$.

If I assume all error terms $\{\varepsilon_i, e_{i1}, \dots, e_{i(N-1)}\}$ in (4.6) are continuous random variables independent of the level of utility U_i^I of respondent i to answer the indirect question, I can write $\Pr(\varepsilon_i \leq 0 | U_i^I \geq 0) = \Pr(\varepsilon_i \leq 0) = \Pr(\varepsilon_i < 0)$ and $\Pr(e_{ij} \leq 0 | U_i^I \geq 0) = \Pr(e_{ij} \leq 0) = \Pr(e_{ij} < 0), \forall j \neq i \in \{1, \dots, N\}$. I can thus rewrite equation (4.6) as:

$$\Pr(\text{cor}_i^I = 0 | U_i^I \geq 0) = \Pr(\varepsilon_i < 0) \times \prod_{j=1}^{N-1} \Pr(e_{ij} < 0) \quad (4.8)$$

Using the symmetry property of error terms, $\Pr(\text{cor}_i^I = 0 | U_i^I \geq 0) = (0.5)^N$. If $N = 10$, the probability of respondent i to estimate a zero magnitude of bribery in N if he/she answers the question honestly is $(0.5)^{10} \approx 0.1\%$. With $N = 20$, this probability is lower than 0.0001% (Figure 4.2).

However, if errors terms are not continuous but discrete variables with a strictly positive probability mass at 0 (estimation with no error), the probability of an honest answer to the indirect question being null is:

$$\Pr(\text{cor}_i^I = 0 | U_i^I \geq 0) = \left(\frac{1 + \gamma_{\varepsilon_i}}{2} \right) \times \prod_{j=1}^{N-1} \left(\frac{1 + \gamma_{e_{ij}}}{2} \right) \quad (4.9)$$

With γ_{ε_i} and $\gamma_{e_{ij}}$ the probability mass at 0 of ε_i and e_{ij} , respectively. With a 50 percent chance of respondent i correctly estimating the amount of bribes paid by all firms in N , the probability of honestly estimating that no bribes were paid by any firms in N is $(0.75)^N$. This probability is 5.6% with $N = 10$ and 0.3% if $N = 20$ (Figure 4.2).

Clearly, the probability of respondent i estimating a zero average of bribes for all firms in N decreases faster if at least one firm has paid bribes. The speed at which this probability tends to zero then depends on the proportion of corrupt firms (i.e. the frequency of bribery in N), the amount of bribes paid by corrupt firms as well as the variance of the error terms.

Even under conservative assumptions regarding the frequency of corruption in N as well as the proportion of respondents who make no error in estimating bribes, the probability of a zero estimate for the magnitude of bribery in N among honest respondents quickly reaches very low values as N increases. With N large, one can safely consider that all respondents providing a zero answer to the indirect question are reticent respondents.

Respondents providing a zero estimate of bribes to the direct question are either reticent or actually believe they did not pay any bribes, while respondents reporting a zero average estimate of bribes paid by all firms in N are all reticent respondents (providing N is sufficiently large). In addition, as indirect questioning was introduced in corruption surveys with the aim to reduce reticence, it is believed that $\Pr(U_i^I < 0) \leq \Pr(U_i^D < 0)$. The model therefore predicts that the proportion of null estimates among respondents is higher for the direct question compared to the indirect question when $N > 1$.

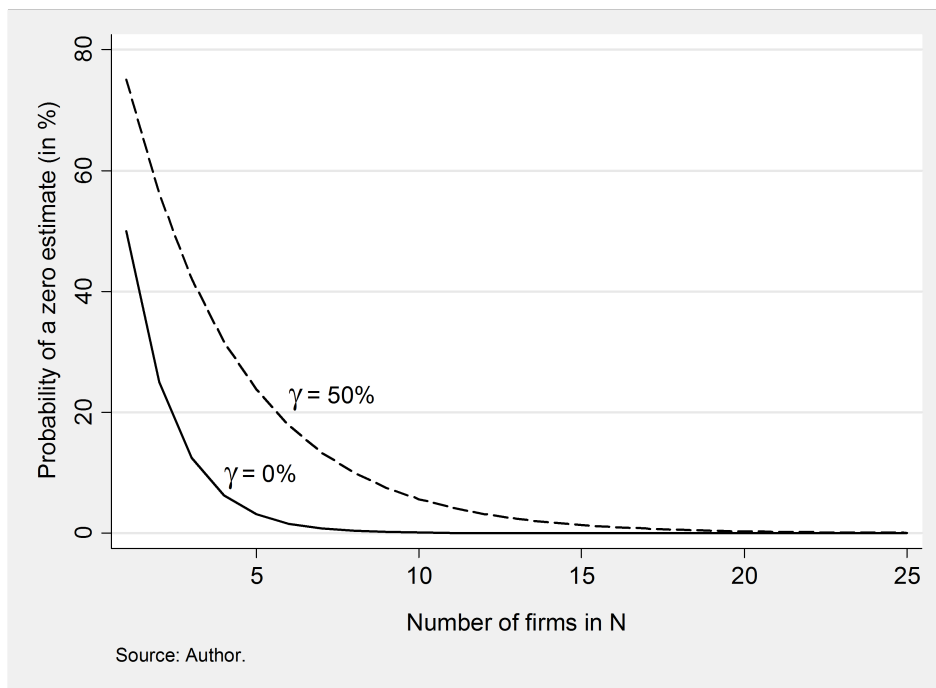


Figure 4.2: Respondent's probability to estimate a zero magnitude of bribery in N , by number of firms in N and by probability γ of the respondent making no error in estimating this magnitude (with the assumption that no firm in N actually paid any bribes).

4.5 Correcting the frequency of bribery of the measurement bias caused by reticence

The frequency of bribery is defined as the proportion of individuals in a designated population who paid bribes. This frequency can be estimated from a given survey sample by computing the number of survey respondents who reported having paid bribes, and dividing this number by the total number of surveyees except for those who did not provide the requested information. This computation may however be affected by measurement bias due to the presence of reticent respondents in the population and sample.

4.5.1 A probabilistic indicator for the frequency of bribery

Using the model framework introduced in the previous section, I define a probabilistic indicator for the frequency of bribery on a set of N firms:

$$Freq_{cor} = \frac{\Pr(cor_i^* > 0) + \sum_{j=1}^{N-1} \Pr(cor_j^* > 0)}{N} \quad (4.10)$$

This indicator is estimated using responses to the direct question from the subset of $M \in \{1, \dots, N\}$ firms who answered this question, including firm i .

$$\widehat{Freq}_{cor} = \frac{\Pr(cor_i^D > 0) + \sum_{j=1}^{M-1} \Pr(cor_j^D > 0)}{M} \quad (4.11)$$

With cor_j^D the estimation by respondent $j \neq i \in \{1, \dots, M\}$ of the amount of bribes he/she paid. Surveyees who refused to answer the direct question and, as such, were not included in the set $\{1, \dots, M\} \in \{1, \dots, N\}$, are left out as no information is available about their experience of bribery.

4.5.2 Identifying the reticence bias

From (4.1), we know that:

$$\Pr(cor_i^D > 0) = \Pr(U_i^D \geq 0) \Pr(cor_i^* + \varepsilon_i > 0 | U_i^D \geq 0) \quad (4.12)$$

If reticence were non-existent, cor_i^D would be a suitable estimator¹⁰ of cor_i^* since $E(\varepsilon_i) = 0$. With the decision process regarding non-response being independent from the amount of bribes respondents paid ($\theta_i \perp\!\!\!\perp cor_i^*$, $\forall i \in \{1, \dots, N\}$), estimating the frequency of bribery would straightforwardly rely on data collected from the subset of M respondents and equation (4.11).

¹⁰I must note that the correction operated by respondent i on cor_i^D when $\varepsilon_i < -cor_i^*$ generates a slight upward bias on cor_i^D , which is all the more important as $\sigma_{\varepsilon_i}^2$ is large.

Since $Pr(U_i^D \geq 0) + Pr(U_i^D < 0) = 1$, the “genuine” estimation by respondent i of the amount of bribes he/she paid can be written as follows:

$$\begin{aligned} Pr(cor_i^* + \varepsilon_i > 0) = & \\ & Pr(U_i^D \geq 0) Pr(cor_i^* + \varepsilon_i > 0 | U_i^D \geq 0) + \\ & Pr(U_i^D < 0) Pr(cor_i^* + \varepsilon_i > 0 | U_i^D < 0) \end{aligned} \quad (4.13)$$

Because $Pr(U_i^D < 0) > 0$, we have: $Pr(cor_i^* + \varepsilon_i > 0) > Pr(cor_i^D > 0)$. The positive probability of having reticent respondents in the survey sample generates a downward bias in our estimator \widehat{Freq}_{cor} .

The size of the reticence bias for respondent i is:

$$Bias_i(\widehat{Freq}_{cor}) = Pr(U_i^D < 0) Pr(cor_i^* + \varepsilon_i > 0 | U_i^D < 0) \quad (4.14)$$

Equation (4.14) provides two useful insights for correcting the reticence bias. The first insight is that only reticent respondents who believe they paid a positive amount of bribes are problematic. As discussed in the introduction of this Chapter, reticent respondents tend to avoid admitting involvement in corrupt acts, but are not always involved in such acts. That said, as shown in Chapter III, firms involved in corruption may be more likely than honest firms to behave as reticent respondents in business surveys. If so, and this is the second insight of equation (4.14), it is likely that $Pr(cor_i^* + \varepsilon_i > 0 | U_i^D < 0) > Pr(cor_i^* + \varepsilon_i > 0 | U_i^D \geq 0)$. Reticence is most plausibly positively correlated with bribery: reticent respondents possibly have more personal experience of bribery, on average, than candid respondents.

4.5.3 Correcting the reticence bias

By systematically denying payment of bribes for fear of self-incrimination, reticent respondents contribute to lower the estimation for the frequency of bribery obtained from respondents’ answers to the direct question. Correcting the reticence bias for the frequency of bribery requires identifying which respondents are reticent and editing their answers to the direct question so that they reflect their true experience of bribery.

Detecting reticent respondents

Reticence is an hidden characteristic of survey respondents. Because reticence is not random but a result of the cost-benefit analysis of formulating an honest answer, it can however relate to observable characteristics of respondents such as their age and level of education as well as the size and profitability of their firm. The key element to determining which respondents are reticent in a given survey sample is their response behaviour with

regards to the indirect question. As long as respondents estimate the magnitude of bribery based on a sufficiently large number of firms, only reticent respondents estimate that bribes are never paid by firms similar to theirs.

A first detection method of reticent respondents is to split the survey sample into two randomly defined groups of respondents. The direct question is asked only to one of these two groups, while the indirect question is only asked to respondents belonging to the other group. All respondents to the indirect question who estimated a zero magnitude of bribery are labelled reticent, in accordance with the findings of the model of response behaviour.

Regressing the response status (zero versus positive estimation of the magnitude of bribery) on observable characteristics of respondents to the indirect question informs us about the typical profile of a reticent respondent. Respondents to the direct question who reported that they did not pay any bribes whose characteristics match the most closely the profile of a reticent respondent are consequently identified as reticent. As the two groups of respondents to the direct and indirect questions are generated randomly, the proportion of reticent respondents to the indirect question is used to determine the number of reticent respondents to the direct question¹¹.

Another, simpler approach, is to ask the two questions consecutively to all survey respondents. The indirect question is asked first to detect reticent respondents, an information that is immediately used to discriminate reticent respondents from candid respondents among respondents who reported they did not pay bribes in the following (direct) question.

Editing the indicator for the frequency of bribery

Once reticent respondents to the direct question have been identified, the next step in correcting the estimator for the frequency of bribery from the reticence bias is to eliminate the unwanted influence of answers from reticent respondents on the frequency indicator computed from the survey sample.

One option is to remove all respondents identified as reticent from the computation of the indicator. This is the choice made by Azfar and Murrell (2009) when correcting their indicator for the frequency of bribery from reticence bias using data from a survey carried out in Romania. By doing so, they assumed that reticent respondents are no more likely than candid respondents to pay bribes. For Clarke (2012), treating reticent respondents as if they were not significantly different from honest respondents regarding their personal experience of corruption may lead to misleading results. In-

¹¹It is possible, although not obvious, that reticence is less acute for indirect questioning than for direct questioning. This means that some respondents who are reticent to answer the direct question would nevertheless accept the answer honestly to the indirect question. If this is the case, the number of reticent respondents to the direct question is underestimated with this method, all the more as indirect questioning is successful in reducing reticence.

deed, as shown in Chapter III, firms with more experience of corruption act more like reticent respondents than virtuous firms. It is then plausible that personal experience of bribery and reticence are in fact positively correlated. Simply removing reticent respondents from the computation of the indicator for the frequency of bribery - or similarly assigning to reticent respondents the same average probability of having paid bribes as the group of candid respondents - will not fully purge the indicator from the reticence bias.

An alternative approach is to use answers of candid respondents to the direct question to learn about the firm characteristics associated with the probability of paying bribes. With this explanatory model of bribe payment as a function of firm characteristics, it is then possible to define a probability of bribe payment for each respondent identified as reticent based on their own characteristics. Reticent respondents whose probability of having paid bribes is equal to or higher than 50 percent are classified as bribe payer.

4.6 The survey

I use a survey of 382 Malagasy firms to test the implications of the model and to apply the method I propose in this Chapter for identifying reticent respondents and correct an indicator for the frequency of bribery of the reticence bias. This survey was carried out by the anti-corruption NGO Transparency International in March 2016.

4.6.1 The scope and methodology of the survey

The main purpose of the survey was to learn about the corruption-related constraints associated with setting up a business in Antananarivo, Madagascar's capital city. The survey asked firm owners about the administrative procedure they went through to formally register their company and start up their business activities, and in particular whether bribes were requested by public officials at each step of this procedure.

The survey sample was drawn from databases of companies created in 2015 obtained from tax centres located in the first and fourth *arrondissements* (boroughs) of the city¹². These two databases contained information about 1,747 firms formally registered during the year 2015 in those two boroughs, including their postal address and phone number.

A team of 12 interviewers first attempted to contact all companies by phone to speak with their owner in order to propose them to take part in the survey. They introduced themselves as surveyors recruited by the NGO

¹²Centralised data for all newly created Malagasy firms were not publicly available. This required approaching each Antananarivo's *arrondissement* individually to obtain their data, which was possible for two out of a total of six boroughs.

Transparency International to carry out a survey investigating conditions for business creation in Madagascar, without specifying at this time that a large proportion of questions focused on payment of bribes. The survey was conducted with 382 business owners¹³ who were successfully contacted and who accepted to participate in the survey.

The survey questionnaire consisted of about 50 questions asking respondents about the requested documents and mandatory administrative formalities at each stage of the formal establishment of their firm, including how much they had to pay for these documents and formalities. In addition, the questionnaire incorporated a series of questions about characteristics of respondents and their firms, as well as questions on respondents' perception of the business environment and the effectiveness of the administration.

The typical process of setting up a business in Madagascar requires from the firm owner some evidence of their identity and a known physical address for their business, the registration of the company at the Madagascar National Statistics Institute (*Institut National de la Statistique* - INSTAT) as well an advance payment on the business income tax for the current fiscal year. Additional documents and formalities may be required depending on the firm's main activity. For example, a restaurant serving alcohol must obtain a specific liquor license issued by the Ministry of the Interior.

After questioning firm owners about each different stages of creating their business, interviewers asked them to estimate the total amount they had to spend to formalise their business, summing up the official cost of the procedure with any additional gifts or informal payments paid out. The following question, which asked more specifically about those bribes, was formulated in two different ways. With the first formulation, respondents were asked to estimate the total amount of "gifts and other informal payments" that their firm paid to complete their start-up administrative procedure (*direct questioning*). In the second case, respondents had to estimate how much firms *similar to theirs* need to pay, on average, to complete their own formalisation procedure¹⁴ (*indirect questioning*).

The survey sample was split into two randomly defined groups of respondents and each group received a version of the questionnaire containing one or the other version of this question. The only difference between these two versions of the questionnaire was the formulation of the question on

¹³In 65 cases out of 382 (17%), surveyors could not interview the firm owner but either the manager or a family member of the owner who confirmed having the required knowledge to answer questions about the creation process of the firm. Those respondents do not behave differently from firm owners in terms of how they answer questions about bribery. Consequently, the results I present in this Chapter combine these two sets of respondents.

¹⁴In addition, both formulations were preceded by a note read by the interviewer saying that it is common to hear that firms in Madagascar sometimes have to make informal payments or gifts to government officials to speed things up.

bribery. The allocation of the two versions of the questionnaire was perfectly equal, with 191 respondents to each version. As explained in the previous section, a suitable alternative to this random allocation would be to ask all respondents to first answer the indirect version of the question, and to answer the direct question immediately after. For this particular survey, a randomised set-up was favoured over this alternative survey design in order to test the implications of the model presented in section 4.4. A randomised experiment provides a more adequate research framework to assess the influence of the question format on the response rate and on the proportion of zero estimates in the sample by excluding the possible interference of the indirect question on later answers to the direct question.

4.6.2 Descriptive statistics

As Table 4.1 shows, respondents to the direct and indirect questions are similar in their average characteristics. About two-thirds (67.8%) of firms in the sample were registered in the first borough, which is the largest *arrondissement* of the city. Women make up slightly less than half of the sample (44.2%). Respondents are predominantly middle-aged (62.3% between 30 and 49 years old) and mostly have a higher education (53.7%). Sole proprietorship is by far the most common legal form adopted by new firms in Antananarivo (81.4%)¹⁵. Lastly, about half of surveyed firms operate in retail trade (43.7%). The second most important sector in terms of number of firms is services (27.2%), followed by transport (15.2%).

Since the observable characteristics of the firms who were allocated the two versions of the questionnaire are not statistically different from one another at conventional levels, it is straightforward to evaluate how the formulation of the bribery question affects their response behaviour.

4.7 Model testing and computation of the corrected indicator for the frequency of bribery

The survey allows first to test the predictions of the response behaviour model proposed in this Chapter. The correction methodology for an unbiased estimation of the frequency of bribery is then computed for this survey.

4.7.1 Testing the model

The model predicts that the non-response rate is higher for the indirect formulation compared to the direct formulation, and that the rate of zero

¹⁵Other legal forms are limited liability company (*Société à responsabilité limitée* - SARL) and limited company (*Société anonyme*- SA).

estimates of bribery is lower for the indirect formulation than for the direct formulation. These two implications of the model are observed in the data collected from the Madagascar firm survey.

Non-response

The proportion of respondents who did not provide an estimate for the average amount of bribes paid by firms similar to theirs when formally registering their activity is 38.2 percent. In comparison, the non-response rate to the direct question, which asked respondents to evaluate how much their firm paid to complete their registration process, is about twice as low (19.9%). The difference in proportions of non-respondents to the two questions is statistically significant at 1 percent (see Table 4.2). Interviewers have classified the reasons given by respondents for failing to answer the questions into refusal to answer (11.7%) and lack of sufficient knowledge (82.9%)¹⁶. Interestingly, the difference in the non-response rates to the two questions is statistically significant for the lack of sufficient knowledge, but not for the refusal to answer. This result confirms that reticence to answer the two questions is likely equivalent and that the higher non-response rate for the indirect question presumably results from the complexity for respondents to accurately estimate what other firms pay, as assumed by the model.

Zero estimates

A fundamental feature of the response behaviour model is that the proportion of respondents to answer zero to the bribery question is lower for the indirect formulation compared to the direct formulation. Including respondents who did not provide an answer to the question, the proportion of firm owners reporting that they did not pay any bribe at the time of the creation of their business (direct questioning) is 51.3 percent. Respondents who had to estimate instead the average amount of bribes paid by firms similar to theirs to set-up their business (indirect questioning) are “only” 26.2 percent to answer a null amount. As with the non-response rates, the difference in the zero response rates between the two formulations of the bribery question is statistically significant at 1 percent (Table 4.2). Excluding non-response, the proportion of respondents to estimate a strictly positive amount of bribes is 57.6 percent for the indirect question and 36.0 percent for the direct question¹⁷, a result compatible with the predicted implications of the model.

¹⁶In 6 out of 111 instances (5.4%) of non-response to the direct and indirect questions (3 cases each), surveyors failed to note the reason given by respondents for non-response or could not classify the reason as either refusal to answer or lack of sufficient knowledge.

¹⁷The difference in strictly positive estimates of bribes is also significant at 1 percent.

Table 4.1: Characteristics of respondents and their firms, per question version

Proportional share (in %)	Direct questioning	Indirect questioning	Difference is null	All sample	Number of observations
Proportion of firms registered in borough I	69.1	66.5	0.584	67.8	382
Proportion of female respondents	44.5	44.0	0.918	44.2	382
Proportion of respondents aged 20 to 29	21.7	19.0		20.3	
Proportion of respondents aged 30 to 39	31.8	34.2	0.839	33.0	379
Proportion of respondents aged 40 to 49	30.2	28.4		29.3	
Proportion of respondents aged 50 or more	16.4	18.4		17.4	
Proportion of respondents with higher education	57.0	50.5	0.210	53.7	374
Proportion of sole proprietorship firms	79.6	83.3	0.357	81.4	382
Proportion of firms in retail trade	41.9	45.6		43.7	
Proportion of firms in wholesale trade	4.7	3.7		4.2	
Proportion of firms in services	27.8	26.7	0.702	27.2	382
Proportion of firms in transport	14.1	16.2		15.2	
Proportion of firms in other sectors	11.5	7.9		9.7	

Tests are based on Pearson's χ^2 statistic. P-values are reported.

Table 4.2: Non-response rates and proportions of zero estimates, per question version

Indicator (in %)	Direct questioning	Indirect questioning	Difference is null	All sample
Proportion of non-response	19.9	38.2	< 0.001	29.1
<i>Lack of knowledge</i>	<i>14.7</i>	<i>33.5</i>	< 0.001	<i>24.1</i>
<i>Refusal to answer</i>	<i>3.7</i>	<i>3.1</i>	0.778	<i>3.4</i>
<i>Undefined reason</i>	<i>1.6</i>	<i>1.6</i>	-	<i>1.6</i>
Proportion of zero estimates	51.3	26.2	< 0.001	38.7

Tests are based on Pearson's χ^2 statistic. P-values are reported.

4.7.2 Reticent respondents to direct questioning

Respondents estimating that they did not pay any bribes when completing the procedure to formally register their business may do so for two reasons: first, because they really believe they did not pay any bribes, and second because they think they did pay bribes but lie because they are reticent. On the other hand, we know from the model that we can consider that all respondents who estimated that not a single firm similar to theirs paid any bribes (or alternatively that the average amount of bribes paid by these firms is null) are reticent. Because the sub-sample of respondents to the indirect question can be split into two groups of reticent and possibly candid respondents¹⁸, I can estimate using a regression model how respondents' characteristics affect their probability of being reticent. I can then predict which respondents to the direct question are likely reticent based on their own characteristics¹⁹.

Since being a reticent or a possibly candid respondent is a binary outcome, a limited dependent variable model - in this case a probit model - is appropriate. I use all descriptive variables described in the previous section as explanatory variables to explain the probability of respondents to the indirect question to provide a strictly positive estimate of the magnitude of bribery. Column (1) of Table 4.3 reports the results of this probit model estimated with maximum likelihood. The probability of being a reticent respondent appears to be lower for respondents with a higher education level, and also lower for sole proprietorship firms. The McFadden R^2 of this regression run on 115 observations²⁰ is 0.164.

I then employ this empirical model to identify which respondents who reported that they did not pay bribes to the direct question share the most commonalities with reticent respondents to the indirect question. The proportion of reticent respondents to the indirect question (42.4%) - those who estimated that no firm similar to theirs paid any bribes - is assumed to be the same as the proportion of reticent respondents to the direct question²¹.

¹⁸Like Azfar and Murrell (2009) and others, I use the term "possibly candid" rather than "candid" to label respondents who are not identified as reticent to emphasize that sophisticated reticent respondents who estimate a positive magnitude of bribery to the indirect question are unidentified by the detection technique I propose. Similarly, if indirect questioning reduces reticence with respect to direct questioning, some reticent respondents to the direct question may answer honestly the indirect question, and for this reason be wrongly classified as candid respondents.

¹⁹If the questionnaire includes both direct and indirect questions, this step is unnecessary as all respondents must reveal their response behaviour to the indirect question.

²⁰From the 191 respondents who were asked the indirect question, 73 chose not to answer. In addition, age and education data were missing for three respondents to this version of the questionnaire, making a total of 115 observations for this regression.

²¹As mentioned earlier, if indirect questioning is successful in reducing reticence, the proportion of reticent respondents to the direct question is underestimated.

Table 4.3: Empirical model for detecting reticent respondents and correcting the indicator for the frequency of bribery

VARIABLES	(1) Detection	(2) Correction
borough (first)	-0.394 (0.302)	-0.129 (0.338)
respondent gender: female	0.298 (0.271)	0.0903 (0.278)
respondent age: 30 to 39	-0.304 (0.361)	-0.826** (0.406)
respondent age: 40 to 49	-0.384 (0.406)	-0.497 (0.394)
respondent age: 50 or more	-0.114 (0.427)	-0.761* (0.455)
respondent education: higher	-0.972*** (0.330)	-0.420 (0.312)
firm status: proprietorship	-0.889** (0.419)	-0.999** (0.395)
firm sector: retail trade	0.593 (0.546)	-0.505 (0.410)
firm sector: wholesale trade	1.138 (0.742)	0.297 (0.807)
firm sector: services	0.910 (0.579)	0.0974 (0.449)
firm sector: transport	-0.624 (0.664)	0.113 (0.463)
Constant	0.914 (0.791)	1.899*** (0.611)
McFadden R^2	0.164	0.102
Observations	115	107

Coefficients are reported
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Among the 93 respondents to the direct question who said they did not pay bribes for which regression data are available²², 40 respondents (43.0%) with the highest probability of being reticent according to the empirical model are labelled reticent and the remaining 53 (57.0%) as possibly candid.

4.7.3 A frequency of bribery excluding reticent respondents

The number of respondents who reported having paid a positive amount of bribes divided by the total number of surveyees who were asked the direct question, including those who did not answer the question, is 28.8 percent. This is a naive estimation of the frequency of bribery in that it does not account for the measurement bias caused by reticence.

Having identified reticent respondents to the direct question, I can produce an improved indicator for the frequency of bribery corrected from the bias due to the presence of reticent respondents in the survey sample.

Removing reticent respondents altogether from the computation of the indicator, as discussed in section 4.5, is one possibility. This is the approach chosen by Azfar and Murrell (2009), Clausen *et al.* (2010), and Clarke *et al.* (2015) to correct their indicators for the frequency of bribery. Applying this indicator on the Madagascar survey using only answers from possibly candid respondents gives a frequency of bribery of 36.4 percent.

In addition, if I also exclude the five respondents whom I was unable to determine whether they are reticent or possibly candid (see footnote 22), the estimate for the frequency of bribery is 37.5 percent. This corrected indicator for the frequency of bribery is 30.2 percent higher than the naive estimate.

This result is very similar to what Azfar and Murrell (2009) found with their survey of Romanian firms²³. This approach to correct the frequency of bribery from the reticence bias assumes that reticence and personal experience of bribery are uncorrelated. This assumption is unlikely to be true, as discussed in section 4.5.

4.7.4 An unbiased estimator for the frequency of bribery

If reticence and bribery are positively correlated, simply removing respondents identified as reticent from the definition of the frequency of bribery is insufficient to obtain unbiased estimates. A more effective approach is

²²Five respondents to the direct question who estimated they did not pay bribes did not provide information about either their age or their level of education. Consequently, the probability of being reticent could not be computed for these five respondents.

²³Their naive estimate for the frequency of bribery was 14.9 percent. Assuming 35 percent of reticent respondents in the sample, their estimate of bribery using only reports from the candid respondents was 19.9 percent. The frequency of bribery excluding reticent respondents is 33.6 percent higher than their naive estimate (Azfar and Murrell, 2009).

to determine the probability that reticent respondents did pay bribes, and compute an indicator for the frequency of bribery using probabilities of bribe payment from all respondents. In order to do this, I first identify the firm characteristics that are associated with bribe payment by regressing on the sub-sample of possibly candid respondents to the direct question a binary variable coding 1 if the respondent admitted paying bribes and 0 otherwise with a set of firm characteristics as independent variables²⁴. The model is estimated with a probit regression.

The results of this regression are presented in column (2) of Table 4.3. Younger respondents appear to pay bribes in a significantly larger proportion than older respondents. Sole proprietorships are less affected by bribe payment than firms registered under another legal status (limited liability company or limited company). Dummies for the firm's business sector are collectively insignificant²⁵, meaning that new firms from all sectors are affected by bribery in equal proportions, *ceteris paribus*.

In a second step, I predict the probability of reticent respondents to the direct question to have paid bribes according to their characteristics and the outcomes of the empirical model for bribe payment. The frequency of bribery among reticent respondents is estimated to be 60.0 percent, as compared to 48.7 percent for the set of possibly candid respondents (excluding non-response). This confirms that reticent respondents have a higher average probability of paying bribes and that the assumption of uncorrelatedness between reticence and experience of bribery does not hold.

With the imputation of predicted probabilities of bribe payment for reticent respondents, the frequency of bribery is now estimated to be 41.4 percent among all surveyees, including those who did not answer the direct question. I was unable to predict the probability of bribe payment for seven respondents to the direct question who reported they did not pay bribes as either information about their age or education level was missing²⁶. Removing these seven observations from the estimation, I find the frequency of bribery corrected from the reticence bias to be 42.4 percent.

This corrected frequency of bribery taking into account the positive correlation between reticence and experience of bribery is 47.2 percent higher than the naive estimation, and 13.1 percent higher than the estimation of the frequency of bribery obtained from only possibly candid respondents.

It should be noted that this estimator is a lower bound for the frequency

²⁴The firm characteristics used in this empirical model are exactly the same as the ones used for the detection model of reticent respondents, but they need not be.

²⁵The p-value of the F-test is 0.286.

²⁶It would be possible to predict probabilities of bribe payment for those respondents by replacing missing data for a particular independent variable by the sample average for that variable. If missing data are limited to a handful of observations as it is the case here, this imputation is unlikely to significantly modify the estimated frequency of bribery.

of bribery in the population of firms as it assumes that reticence is as likely for the indirect question as it is for the direct question. It also does not account for the possibility that sophisticated reticent respondents report a positive - although underestimated - magnitude of bribery to the indirect question as they understand that estimating that no firm similar to theirs has paid any bribes is unrealistic, and therefore suspicious.

4.8 Conclusions

In this Chapter, I propose an innovate method for detecting reticent respondents in firm surveys and for correcting indicators of corruption from the bias associated with the presence of reticent respondents in the survey sample. This method uses two questions asking respondents to estimate how much bribes they paid and how much bribes firms similar to theirs pay on average.

Applying this method to a survey of newly created firms in Madagascar, and assuming first that reticence and bribery are uncorrelated, I find that the frequency of bribery is underestimated by 30.2 percent if reticence is not taken into account, a bias that is very similar in size (33.6 percent) to what Azfar and Murrell found in their 2009 study with another method for detecting reticent respondents based on randomised response questioning (RRQ).

Despite similar results, the technique for identifying reticent respondents I propose in this Chapter is easier to implement than the approach based on RRQ first introduced by Azfar and Murrell (2009) and later reproduced by others. Among the benefits of my approach is that it does not use information that is unrelated to the issue under measurement, like the RRQ technique often does when asking respondents about “sensitive” behaviour other than bribery, such as tax fraud for instance. It also does not require respondents to take part in any coin tossing or similar procedure to conceal their true answers that they may not relate to or fully apprehend.

In this Chapter, I also suggest a more efficient way to correct indicators of bribery from the bias caused by reticence by allowing a positive correlation between reticence and experience of bribery. Applying this refined estimator on data from the Madagascar survey, I evaluate the unbiased frequency of bribery to be 42.4 percent. This figure is 47.2 percent higher than the naive estimation of the frequency of bribery that does not account for reticence. It is also 13.1 percent higher than the estimation that assumes uncorrelatedness between reticence and bribery.

Future research is needed to confirm these findings as well as the potential of indirect questioning to detect reticent behaviour. Similarly, more studies would be useful to better understand how reticence and corruption may be related and how corruption indicators can be corrected accordingly so that they generate unbiased estimates.

Chapter 5

General conclusion

Firm surveys are undoubtedly a useful tool to study corruption. They can reveal meaningful information about the experience and perception of corruption from firm executives. Of course, like any other measuring instruments, surveys have their own limitations. People may refuse to take part in surveys or to answer honestly questions they consider sensitive.

Since corruption is an illegal activity by its very definition, some firm owners and managers are reluctant to report their true experience and perception of this phenomenon. Another limitation of firm surveys as they are currently designed and implemented is that they rely on a set of assumptions that have not received sufficient attention on the part of researchers.

Some of these assumptions relate to the phrasing of corruption questions. Because of this, standard questions asking firm owners and managers about whether they had paid any bribes when interacting with public officials have not yet convincingly proven that they are able to measure bribery accurately. Based on the results of a firm survey I conducted in Madagascar, Chapter II of this thesis has confirmed earlier findings that a slight change in the way questions about corruption are asked can have a large effect on estimates of the size of corruption. The magnitude of bribery - the average amount of bribes paid by firms - estimated by firm owners and managers can be considerably higher when estimates are formulated as a percentage of turnover rather than in monetary value. This gap in estimates between these two answer formats is likely caused by systematic measurement error on the part of survey respondents. Experience in running a business appears to mitigate error but without eliminating it completely.

The *more is better* assumption, which states that the best wording for a corruption question is the one that produces the highest estimates is clearly proven wrong. While corruption is likely underestimated in firm surveys as some respondents are reticent to admit involvement in corrupt acts, deciding which formulation of a question is the most appropriate on the sole basis of its capacity to produce high estimates of corruption is wrong practice.

All indicators of corruption constructed from survey data are not equally affected by the issue of reticence. Indicators aiming at quantifying the magnitude of bribery are much more sensitive to the phrasing of survey questions than indicators estimating its frequency - the proportion of firms to pay bribes. In the current state of research, the frequency of corruption appears to be a more reliable indicator than the magnitude of corruption when those indicators are constructed from firm survey data.

Another example of the inadequacy of the *more is better* assumption to counter the undesirable influence of reticence is indirect questioning. Introduced to promote candour by allowing respondents to acknowledge the existence of corruption while avoiding self-incrimination, indirect questioning asks respondents about the average amount of bribes firms similar to theirs usually pay. This question is not to be interpreted as if estimates were about the actual amount of bribes paid by the respondent, as it has regrettably been the case for many years. Because indirect questioning has long been trusted to promote trustfulness and because estimates of bribery with indirect questioning are generally higher than when questions are asked directly, indirect questioning has become for better or for worse a standard way of phrasing corruption questions. This is so despite the fact that indirect questioning may not actually measure what it was designed for, i.e. an alternative way to identify the respondents' own experience of corruption.

The issue of reticence can not be simply dealt with by focusing on questions that are more "successful" than others at getting respondents to report more corruption, at the risk of moving further away from the manifestations of corruption that researchers are interested to measure.

Reticence requires more attention from researchers involved in the empirical study of corruption. One important aspect of reticence that is understudied is the relation between reticence and the experience of corruption.

Chapter III of this thesis looks at how firms' experience of corruption, as measured by an indicator of corruption-risk in public procurement assessing compliance with legal contracting rules, affects response behaviour to surveys. Using a survey of contracting firms I designed and carried out in Madagascar, I find that business owners and managers involved in corruption behave very much like reticent respondents. Experience of corruption is positively associated with the likelihood of respondents denying that firms similar to theirs have to offer gifts or make illegal payments to public officials but has no influence on them choosing to take part in the survey or to answer a sensitive question about corruption in public procurement.

Results of Chapter III also shed light on another commonly made assumption that respondents refraining from answering corruption questions are likely to be reticent. Testing this assumption on survey data from Madagascar, I find strong evidence against this interpretation of non-response.

Correcting indicators of corruption from the downward bias caused by reticence requires to be able to identify reticent respondents. Since Azfar

and Murrell (2009), one such detection method is available. This method based on randomised response questioning has, however, a number of drawbacks. In Chapter IV, I propose an alternative method for detecting reticent respondents in firm surveys using indirect questioning. With another survey of Malagasy firms, I confirm that the frequency of bribery is largely underestimated if the presence of reticent respondents in the survey sample is ignored. I also suggest an improved way to correct indicators for the frequency of bribery from the reticence bias that takes into account the likely positive correlation between reticence and experience of corruption.

Future research in the field of corruption measurement should promote systematic testing of underlying, and often overlooked, assumptions affecting the design and implementation of firm surveys. The *more is better* assumption that researchers have heavily relied on must cease to be the ultimate criterion for deciding on the best approaches to ask sensitive questions about corruption. Randomised and controlled experiments can provide useful insights about the relevance of such assumptions, as this thesis shows. More objective measures of corruption, such as the *proxy* indicator of corruption-risk in public procurement I designed and implemented for this thesis, while often difficult to obtain, can also provide substantial support to researchers to reveal the potential of survey questions to measure corruption accurately.

Altering the phrasing of a sensitive question to foster candour can significantly affect how survey respondents understand the question, not only how they answer it. Indirect questioning is a telling example of wrong practice in this regard. For this reason, question phrasing must be taken more seriously by researchers aiming at quantifying corruption using survey data. Caution is particularly required when interpreting respondents' answers - or their absence of response - to sensitive questions, as conventional wisdom can be misleading. As evidenced in this thesis, despite lasting but unsubstantiated belief among researchers that non-response is an admission of guilt, this interpretation appears to be invalid.

Finally, studies aiming at evaluating how cultural and contextual variations affect response behaviour of businesspeople would be of particular interest to determine whether the results of this thesis are specific to Madagascar or have a broader application. The innovative detection method of reticent respondents based on indirect questioning I propose in this thesis must be replicated in other contexts in order to confirm its potential. Likewise, the finding that owners and managers of firms suspected of corruption behave like reticent respondents when asked sensitive questions about corruption must be subject to further investigation. Better understanding how survey respondents answer corruption questions is instrumental to deepen our knowledge about the consequences of corruption for economic development.

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Appendices 3A to 3E

Appendix 3.A

Table 3.A: Descriptive statistics of the firms surveyed, per number of *red flag* contracts secured

Number of <i>red flag</i> contracts secured	Average firm age	Proportion of firms with fewer than 5 employees	Proportion of firms in the trade sector
0	12.45	78.52%	21.57%
1	10.53	89.44%	28.62%
[2-5[	10.19	93.34%	37.52%
[5-10[	9.93	92.22%	31.77%
[10-20[	10.39	91.93%	37.58%
20 or more	9.39	95.38%	45.03%
<i>R</i> ² of the OLS regression			
of the number of <i>red flag</i> contracts on the variable	0.0028	0.0067	0.0088
	Prob >F = 0.0051	Prob >F = 0.0000	Prob >F = 0.0000

Appendix 3.B

Table 3.B1: Summary results of the survey (all respondents)

Questions	Distribution of answers						Obs.
	Yes			No			
1. Was your firm a supplier to the government, a local authority or public institution in 2013 or 2014?	366 (84.3%)	48 (11.1%)	20 (4.6%)	434			
2. How would you rate the procedures for businesses to follow when bidding for a public contract?	Very simple 7 (1.6%)	Rather simple 55 (12.7%)	Rather difficult 228 (52.5%)	Very difficult 130 (30%)	No answer 14 (3.2%)	Obs. 434	
3. Generally speaking, would you say that there is free access to public procurement for all qualified firms?	Yes, certainly 208 (47.9%)	Yes, quite 72 (16.6%)	Not really 105 (24.2%)	Not at all 38 (8.8%)	No answer 11 (2.5%)	Obs. 434	
4. Generally speaking, would you say that public procurement procedures are transparent?	148 (34.1%)	67 (15.4%)	140 (32.3%)	57 (13.1%)	22 (5.1%)	Obs. 434	
5. Generally speaking, would you say that firms bidding for a public contract are treated equally?	157 (36.2%)	52 (12%)	123 (28.3%)	81 (18.7%)	21 (4.8%)	Obs. 434	
6. Generally speaking, would you say that procurement procedure deadlines are compliant?	211 (48.6%)	78 (18%)	86 (19.8%)	42 (9.7%)	17 (3.9%)	Obs. 434	
7. Generally speaking, would you say that procurement officials are adequately trained on the procedures?	188 (43.3%)	113 (26%)	69 (15.9%)	22 (5%)	42 (9.7%)	Obs. 434	
8. Generally speaking, would you say that public contracts are paid on time?	53 (12.2%)	28 (6.5%)	143 (33%)	200 (46.1%)	10 (2.3%)	Obs. 434	
9. How would you rate the fairness of the procurement process in your business sector?	Very fair 90 (20.7%)	Somewhat fair 132 (30.4%)	Rather unfair 134 (30.9%)	Very unfair 64 (14.8%)	No answer 14 (3.2%)	Obs. 434	
10. In your opinion, what percentage of the total value of a public contract do firms similar to yours usually have to spend on informal payments and other gifts to secure the contract?	0% 68 (15.7%)	] 0%, 10%] 43 (9.9%)	] 10%, 30%] 87 (20%)	] 30%, 100%] 65 (15%)	No answer 171 (39.4%)	Obs. 434	
11. If you were to lose a contract because the procedure was not implemented according to applicable rules, would you appeal to the Public Procurement Regulatory Authority (ARMP)?	Yes, certainly 135 (31.1%)	Yes, maybe 68 (15.7%)	Probably not 74 (17.1%)	Certainly not 122 (28.1%)	No answer 35 (8.1%)	Obs. 434	
12. Is your firm interested in becoming more involved in improving integrity in public procurement?	318 (73.3%)	53 (12.2%)	9 (2.1%)	10 (2.3%)	44 (10.1%)	Obs. 434	

Table 3.B2: Summary results of the survey (internet respondents only)

Questions	Distribution of answers						Obs.
	Yes			No			
1. Was your firm a supplier to the government, a local authority or public institution in 2013 or 2014?	152 (70.7%)	44 (20.5%)	19 (8.8%)	152 (70.7%)	44 (20.5%)	19 (8.8%)	215
2. How would you rate the procedures for businesses to follow when bidding for a public contract?	Very simple (0.5%)	Rather simple (11.2%)	Rather difficult (53%)	Very difficult (30.7%)	No answer (4.7%)	Obs.	215
	1	24	114	66	10		
3. Generally speaking, would you say that there is free access to public procurement for all qualified firms?	Yes, certainly (14.9%)	Yes, quite (27%)	Not really (41.9%)	Not at all (11.6%)	No answer (4.7%)	Obs.	215
4. Generally speaking, would you say that public procurement procedures are transparent?	32 (14.9%)	58 (27%)	90 (41.9%)	25 (11.6%)	10 (4.7%)		
5. Generally speaking, would you say that firms bidding for a public contract are treated equally?	24 (11.2%)	44 (20.5%)	96 (44.7%)	38 (17.7%)	13 (6.0%)		
6. Generally speaking, would you say that procurement procedure deadlines are compliant?	24 (11.2%)	41 (19.1%)	92 (42.8%)	48 (22.3%)	10 (4.7%)		
7. Generally speaking, would you say that procurement officials are adequately trained on the procedures?	40 (18.6%)	68 (31.6%)	60 (27.9%)	36 (16.7%)	11 (5.1%)		
8. Generally speaking, would you say that public contracts are paid on time?	46 (21.4%)	92 (42.8%)	48 (22.3%)	16 (7.4%)	13 (6.1%)		
	8 (3.7%)	17 (7.9%)	71 (33%)	110 (51.2%)	9 (4.2%)		
9. How would you rate the fairness of the procurement process in your business sector?	Very fair (6.5%)	Somewhat fair (36.3%)	Rather unfair (39.5%)	Very unfair (14%)	No answer (3.7%)	Obs.	215
	14	78	85	30	8		
10. In your opinion, what percentage of the total value of a public contract do firms similar to yours usually have to spend on informal payments and other gifts to secure the contract?	0% (13.5%)	0% - 10% (15.8%)	10% - 30% (32.6%)	30% - 100% (14.9%)	No answer (23.3%)	Obs.	215
	29	34	70	32	50		
11. If you were to lose a contract because the procedure was not implemented according to applicable rules, would you appeal to the Public Procurement Regulatory Authority (ARMP)?	Yes, certainly (16.3%)	Yes, maybe (27.4%)	Probably not (28.4%)	Certainly not (21.9%)	No answer (6.1%)	Obs.	215
12. Is your firm interested in becoming more involved in improving integrity in public procurement?	35 (16.3%)	59 (27.4%)	61 (28.4%)	47 (21.9%)	13 (6.1%)		
	147 (68.4%)	49 (22.8%)	6 (2.8%)	3 (1.4%)	10 (4.7%)		

Table 3.B3: Summary results of the survey (telephone respondents only)

Questions	Distribution of answers						Obs.
	Yes			No			
1. Was your firm a supplier to the government, a local authority or public institution in 2013 or 2014?	214 (97.7%)	4 (1.8%)	1 (0.5%)	219	No answer	1 (0.5%)	219
2. How would you rate the procedures for businesses to follow when bidding for a public contract?	Very simple (2.7%)	Rather simple (14.2%)	Rather difficult (52.1%)	Very difficult (29.2%)	No answer	4 (1.8%)	219
	6	31	114	64	No answer		
	(2.7%)	(14.2%)	(52.1%)	(29.2%)	(1.8%)		
3. Generally speaking, would you say that there is free access to public procurement for all qualified firms?	Yes, certainly (80.4%)	Yes, quite (6.4%)	Not really (6.9%)	Not at all (5.9%)	No answer	1 (0.5%)	219
4. Generally speaking, would you say that public procurement procedures are transparent?	124 (56.6%)	23 (10.5%)	44 (20.1%)	19 (8.7%)	9 (4.1%)		219
5. Generally speaking, would you say that firms bidding for a public contract are treated equally?	133 (60.7%)	11 (5.0%)	31 (14.2%)	33 (15.1%)	11 (5.0%)		219
6. Generally speaking, would you say that procurement procedure deadlines are compliant?	171 (78.1%)	10 (4.6%)	26 (11.9%)	6 (2.7%)	6 (2.7%)		219
7. Generally speaking, would you say that procurement officials are adequately trained on the procedures?	142 (64.8%)	21 (9.6%)	21 (9.6%)	6 (2.7%)	29 (13.2%)		219
8. Generally speaking, would you say that public contracts are paid on time?	45 (20.6%)	11 (5%)	72 (32.9%)	90 (41.1%)	1 (0.5%)		219
9. How would you rate the fairness of the procurement process in your business sector?	Very fair (34.7%)	Somewhat fair (24.7%)	Rather unfair (22.4%)	Very unfair (15.5%)	No answer	6 (2.7%)	219
	76	54	49	34	No answer		
	(34.7%)	(24.7%)	(22.4%)	(15.5%)	(2.7%)		
10. In your opinion, what percentage of the total value of a public contract do firms similar to yours usually have to spend on informal payments and other gifts to secure the contract?	0% (17.8%)	| 0%, 10%] (4.1%)	| 10%, 30%] (7.8%)	| 30%, 100%] (15.1%)	No answer		219
	39	9	17	33	121		
	(17.8%)	(4.1%)	(7.8%)	(15.1%)	(55.3%)		
11. If you were to lose a contract because the procedure was not implemented according to applicable rules, would you appeal to the Public Procurement Regulatory Authority (ARMP)?	Yes, certainly (45.7%)	Yes, maybe (4.1%)	Probably not (5.9%)	Certainly not (34.2%)	No answer	22 (10.1%)	219
12. Is your firm interested in becoming more involved in improving integrity in public procurement?	100 (78.1%)	9 (1.8%)	13 (1.4%)	75 (3.2%)	34 (15.5%)		219
	171	4	3	7	34		
	(78.1%)	(1.8%)	(1.4%)	(3.2%)	(15.5%)		

Appendix 3.C

Table 3.C: Selection (average marginal effects)

VARIABLES	(1) Matching	(2) Contact	(3) Participation Heckman outcome	(4) Participation Heckman selection
<i>nb redflag</i>	0.00436*** (0.00122)	0.00154 (0.00135)	0.00383 (0.00334)	0.00290 (0.00204)
<i>nb whiteflag</i>	-0.000818 (0.00137)	-0.00150 (0.00160)	0.00358 (0.00493)	0.00343 (0.00281)
firm age		4.19e-06 (0.00125)	0.00459** (0.00213)	0.000465 (0.00145)
staff nb [1 5[		-0.00528 (0.0244)	0.0361 (0.0463)	-0.0213 (0.0250)
staff nb [5 10[		-0.0172 (0.0521)	0.118 (0.155)	-0.102* (0.0559)
staff nb [10 +]		0.217*** (0.0433)	-0.267 (0.270)	0.0177 (0.0814)
sector: corporate services		0.219*** (0.0327)	-0.000469 (0.195)	0.193*** (0.0348)
sector: freight transport		0.190*** (0.0494)	0.0684 (0.179)	0.188*** (0.0504)
sector: other		0.157*** (0.0398)	0.00893 (0.165)	0.160*** (0.0426)
sector: retail trade		0.0126 (0.0390)	-0.00197 (0.0697)	-0.0258 (0.0413)
sector: wholesale		0.106*** (0.0356)	0.0280 (0.0871)	0.0600 (0.0381)
surveyor 1 (telephone survey)			0.0213 (0.0370)	
surveyor 2 (telephone survey)			-0.102* (0.0565)	
total value (in million Ariary)	0.000105*** (0.000031)			
firm status: other				-0.194 (0.294)
firm status: sole ownership				-0.173 (0.283)
firm status: LLC				-0.0311 (0.308)
owner gender: female				0.0192 (0.0219)
firm country: Malagasy				-0.386 (0.256)
Observations	3,378	2,311	1,035	2,126

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Appendix 3.D

Table 3.D: Regressions (average marginal effects) excluding respondents who did not confirm that their firm had secured public contracts

VARIABLES	(1) Non-response Basic Model	(2) Non-response Extended Model	(3) Zero estimation Basic Model	(4) Zero estimation Extended Model
<i>nb redflag</i>	0.0103** (0.00472)	0.00519 (0.00492)	0.00670** (0.00322)	0.00724** (0.00328)
<i>nb whiteflag</i>	-0.00689 (0.00796)	-0.00649 (0.00784)	0.00262 (0.00521)	0.00251 (0.00524)
firm age		0.00435 (0.00320)		-0.00100 (0.00223)
staff nb [1 5[		0.115** (0.0553)		-0.0384 (0.0406)
staff nb [5 10[		0.137 (0.114)		-0.0408 (0.0786)
staff nb [10 +]		0.0780 (0.173)		0.374** (0.153)
sector: corporate services		0.0820 (0.0815)		0.0404 (0.0599)
sector: freight transport		0.0313 (0.108)		0.101 (0.0905)
sector: other		-0.123 (0.0932)		0.0778 (0.0763)
sector: retail trade		0.0971 (0.105)		0.0107 (0.0751)
sector: wholesale		0.116 (0.0931)		0.0580 (0.0677)
surveyor 1 (telephone survey)		0.271*** (0.0548)		0.00295 (0.0410)
surveyor 2 (telephone survey)		0.322*** (0.0657)		0.0885* (0.0531)
Observations	401	383	401	383

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Appendix 3.E

Table 3.E: Results for the refined *red flag indicator*

VARIABLES	(1)		(2)		(3)		(4)		(5)		(6)	
	Participation Basic Model	Participation Extended Model	Participation Basic Model	Participation Extended Model	Non-response Basic Model	Non-response Extended Model	Non-response Basic Model	Non-response Extended Model	Zero estimation Basic Model	Zero estimation Extended Model	Zero estimation Basic Model	Zero estimation Extended Model
<i>nb refined redflag</i>	0.00205 (0.00257)	0.00248 (0.00261)	0.00771* (0.00413)	0.00132 (0.00431)	0.00725*** (0.00274)	0.00132 (0.00431)	0.00725*** (0.00274)	0.00846*** (0.00283)	0.00725*** (0.00274)	0.00846*** (0.00283)	0.00725*** (0.00274)	0.00846*** (0.00283)
<i>nb refined whiteflag</i>	0.00429 (0.00428)	0.00609 (0.00435)	0.00254 (0.00788)	0.00522 (0.00794)	-0.00108 (0.00490)	0.00522 (0.00794)	-0.00108 (0.00490)	-0.00266 (0.00499)	-0.00108 (0.00490)	-0.00266 (0.00499)	-0.00108 (0.00490)	-0.00266 (0.00499)
firm age		0.00334* (0.00181)		0.00259 (0.00285)		0.00259 (0.00285)		-0.00150 (0.00203)	0.00259 (0.00285)	-0.00150 (0.00203)	0.00259 (0.00285)	-0.00150 (0.00203)
staff nb [1 5[		0.0321 (0.0350)		0.0939* (0.0511)		0.0939* (0.0511)		-0.0391 (0.0365)	0.0939* (0.0511)	-0.0391 (0.0365)	0.0939* (0.0511)	-0.0391 (0.0365)
staff nb [5 10[		0.135* (0.0812)		0.0800 (0.109)		0.0800 (0.109)		-0.0286 (0.0801)	0.0800 (0.109)	-0.0286 (0.0801)	0.0800 (0.109)	-0.0286 (0.0801)
staff nb [10 +]		-0.233*** (0.0449)		0.0872 (0.141)		0.0872 (0.141)		0.419*** (0.127)	0.0872 (0.141)	0.419*** (0.127)	0.0872 (0.141)	0.419*** (0.127)
sector: corporate services		0.00408 (0.0504)		0.0573 (0.0756)		0.0573 (0.0756)		0.0611 (0.0546)	0.0573 (0.0756)	0.0611 (0.0546)	0.0573 (0.0756)	0.0611 (0.0546)
sector: freight transport		0.0610 (0.0694)		0.0610 (0.0999)		0.0610 (0.0999)		0.0865 (0.0801)	0.0610 (0.0999)	0.0865 (0.0801)	0.0610 (0.0999)	0.0865 (0.0801)
sector: other		0.0274 (0.0588)		-0.0859 (0.0863)		-0.0859 (0.0863)		0.0454 (0.0652)	0.0274 (0.0588)	0.0454 (0.0652)	0.0274 (0.0588)	0.0454 (0.0652)
sector: retail trade		-0.0185 (0.0625)		0.0952 (0.0987)		0.0952 (0.0987)		0.0386 (0.0700)	-0.0185 (0.0625)	0.0386 (0.0700)	-0.0185 (0.0625)	0.0386 (0.0700)
sector: wholesale		0.0124 (0.0556)		0.0983 (0.0864)		0.0983 (0.0864)		0.0477 (0.0604)	0.0124 (0.0556)	0.0477 (0.0604)	0.0124 (0.0556)	0.0477 (0.0604)
surveyor 1 (telephone survey)		0.00873 (0.0343)		0.00873 (0.0523)		0.00873 (0.0523)		0.00188 (0.0382)	0.00873 (0.0343)	0.00188 (0.0382)	0.00873 (0.0343)	0.00188 (0.0382)
surveyor 2 (telephone survey)		-0.107*** (0.0355)		0.345*** (0.0626)		0.345*** (0.0626)		0.0785 (0.0495)	-0.107*** (0.0355)	0.345*** (0.0626)	-0.107*** (0.0355)	0.0785 (0.0495)
Observations	1,204	1,146	463	442	463	442	463	442	463	442	463	442

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix A

Three Ways to Assess Corruption: How to compare indicators?

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Introduction

By weakening the institutional frameworks through which economic agents interact, corruption constitutes a major obstacle to economic development. Because of its secretive nature, measuring this phenomenon has proven challenging. Numerous initiatives have nonetheless been launched in the past two decades with the objective to produce reliable measures of corruption. For a researcher, find a way through the “jungle” of corruption indicators is not always easy. Yet, a close look at the issue of corruption measurement is often an essential preliminary step to successfully apprehend corruption as an empirical research topic.

The aim of this review is precisely to evaluate the main categories of indicators that have been used more or less interchangeably from the middle of the 1990s for the study of macro-determinants and consequences of corruption, namely the indicators based on expert assessments, indicators constructed from surveys capturing the perceptions and experiences of corruption from households or businesspeople, and composite indicators of corruption. This study focuses on multi-year global and regional indicators that provide comparable scores across countries and time.

.../...

... /... The first three sections of this document are dedicated to the respective advantages and drawbacks of each category of indicators, making it possible to define the context in which those indicators are the most relevant. The fourth section provides a tool aiming at guiding researchers working on corruption in their choice of a suitable corruption measurement instrument by defining which indicators are the most appropriate depending on the objectives and specific constraints of their research question.

This document, along with the corresponding database of macro-indicators of corruption, is a contribution to the "Innovative Development Indicators" (IDI) programme of the Fondation pour les Études et Recherches sur le Développement International (FERDI).

1. Indicators constructed from expert assessments

Paulo Mauro's article on the impact of corruption on economic growth published in 1995 in *The Quarterly Journal of Economics* is among the first macroeconomic empirical studies on corruption. This article uses data from Business International (BI), which became soon after The Economist Intelligence Unit (EIU), a private institution producing decision-aiding tools for international investors, banks and multinationals. The version of the BI database used by Mauro in his article is composed of indicators of corruption, red tape and efficiency of the judicial system in 70 countries between 1980 and 1983. Risk factors were assessed by BI based on standardised questionnaires filled by their correspondents ("experts") based in the evaluated countries. Those questionnaires were collected and verified, first at the regional level and then again at the headquarters of the organisation in order to ensure the validity and consistency of the results.

1.1. Advantages of indicators constructed from expert assessments

Perceptions are useful

In his article, Mauro mentions a number of advantages and problems associated with the use of expert assessment data. In terms of advantages, he points out that *de-jure* indicators used in earlier studies on political instability can be misleading. An example he mentions is the number of changes of governments in a given period that characterises a number of countries otherwise democratically anchored. Mauro also notes that what really matters for investment decisions are the perceptions of investors of the level of risk, including the political risk, more than the actual level of those risks. The results of his article match this interpretation: the perception of the risk of corruption negatively affects economic growth mainly via its effect of investment decisions. More recently, Arndt and Oman (2006) confirm that, from an investor's perspective, perceptions matter on their own.

More generally, economic agents take some of their decisions based on their perceptions and experts are sometimes able to provide a direct evaluation of these perceptions. Soares (2004) showed that perception of a high level of corruption discourages victims of crime from reporting

cases to authorities. For Kaufmann and Kraay (2008), perception data are extremely useful even when they do not reflect the reality as economic agents operate largely on the basis of their beliefs.

For certain aspects of governance, analysts and experts are better placed to provide accurate information. For instance, according to Kaufmann and Kraay (2008), the very detailed questionnaire on national budgetary processes of the Open Budget Index (OBI) can only be filled by experts with an in-depth knowledge over those processes.

Scores are comparable: the World Bank's CPIA

A high level of comparability in expert assessments can be obtained more easily than with other types of corruption data. This is particularly the case when the same experts evaluate all countries. Many organisations producing this type of indicators set up a benchmarking system to enhance the comparability of scores attributed to different countries (Kaufmann and Kraay, 2008). Such is the case of the World Bank for their *Country Performance and Institutional Assessment* (CPIA).

The World Bank's CPIA is produced annually by the staff of the World Bank to assess the quality of institutional frameworks and policies of borrowing countries aiming at reducing poverty, ensuring sustainable growth and the effective use of development assistance. One of the 16 criteria forming the CPIA corresponds to the evaluation of *Transparency, Accountability and Corruption* (TAC) in the public sector. World Bank teams attribute a score ranging from 1 to 6 to each of those 16 criteria, with a higher score denoting a better performance. In order to ensure greater uniformity in the process of attribution of scores across countries, the World Bank initially evaluates a dozen of benchmark countries and provides its teams in charge of evaluations with detailed definitions corresponding to each score. Assigned scores are systematically reviewed before the finalisation of the indicator (Arndt and Oman, 2006). For Knack (2006), the CPIA is a hybrid indicator in the sense that expert-based ratings are partly centralised and partly decentralised. Scores originate from teams of experts based in the evaluated countries and regional offices. Those scores are then submitted to a centralised review process to enhance their comparability. In practice, however, the vast majority of scores attributed by decentralised units are unaltered. Since 2006 (corresponding to the CPIA 2005), scores for the 16 CPIA criteria are available for countries members of the International Development Organisation (IDA)¹. Prior to that date, evaluations were publicized only by grouping of countries into quintiles according to their level of performance (Arndt and Oman, 2006).

Relatively inexpensive data with wide coverage: the ICRG

Another advantage of expert ratings compared to other types of data on corruption is their relatively low cost of production. It is considerably cheaper to have an organised network of experts, such as the World Bank's country economists in the case of the CPIA, to fill in a

¹<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/IDA/0,,contentMDK:21378540~menuPK:2626968~pagePK:51236175~piPK:437394~theSitePK:73154,00.html> [Accessed on 15 July 2013]

questionnaire than to develop and implement nationally representative household or business surveys in a large number of countries (Kaufmann and Kraay, 2008).

Corruption data compiled from expert assessments are in some cases available for a large number of countries over a significant period of time. This is the case for the *International Country Risk Guide* (ICRG) produced by The PRS Group, which has become very popular among researchers partly for its wide geographical (14 countries in 2013)² and temporal (since 1984) coverage.

The ICRG has been used as early as 1995 in another pioneer research paper from Knack and Keefer on the empirical relationship between institutions and economic performance. According to The PRS Group, the corruption component of the ICRG database evaluates political corruption, and more specifically the forms of political corruption that they consider to be the most damaging to foreign companies: excessive patronage, nepotism and suspiciously close ties between politics and business³. Like BI, The PRS Group charges users for access to their database. Another common feature between the indicators of corruption produced by the two institutions is the centralised nature of their development process. In the case of the ICRG, evaluations originate from a network of correspondents with a working knowledge of the situation on the ground but final scores are determined centrally by a small group of individuals (Knack, 2006).

Interest expressed by researchers during the mid-1990s for indicators constructed from expert assessment data, indicators often produced by firms specialised in risk assessment, can also be explained by the fact that few alternatives were available to them at that time (Treisman, 2007).

Those advantages explain to a large extent why indicators using expert ratings have been so popular and are still today very much used in the empirical macroeconomic literature on corruption. This method for measuring corruption has nonetheless several drawbacks.

1.2. Problems associated with indicators constructed from expert assessments

Perceptions do not necessarily reflect the reality of corruption

Perceptions of corruption do not necessarily reflect the reality of the phenomenon, although this criticism is not only valid for experts. Opinions may not be grounded on hard evidence and be biased. Consequently, cross-country differences in perceptions of corruption may reflect the influence of a number of factors unrelated to the actual level of corruption in those countries. Treisman (2007) mentions a number of such factors relevant for experts: a country's level of democracy, its level of inequality, the media coverage of corruption cases, anti-corruption governmental campaigns and the local culture of politically motivated accusations of corruption. Even when perceptions echo reality, a change in actual levels of corruption will affect perceptions only after a delay. Uncertainty over the duration of this time lag threatens empirical studies on corruption, especially those analysing panel data (Treisman, 2007).

² <http://www.prsgroup.com/icrg.aspx> [Accessed on 15 July 2013]

³ http://www.prsgroup.com/ICRG_Methodology.aspx#EconRiskRating [Accessed on 15 July 2013]

Those indicators are conceptually imprecise

Corruption indicators using perceptions from experts are often imprecise in what they intend to measure. In practice, it is frequent for researchers to apply indicators to measure concepts different from what these indicators were originally developed for. As Arndt and Oman note in their 2006 report on uses and misuses of governance indicators, the World Bank has warned researchers, including its own, against interpreting a CPIA score as a narrow measure of the quality of a country's public policies. Some analysts interpret the scores of Freedom House's *Freedom in The World* index, which evaluates various aspects of political rights and civil liberties in 195 countries and 14 territories (in 2012)⁴, including the extent to which corruption affects governments, as a proxy for the level of democracy when others infer from it a measure of governance or of the degree of respect for human rights (Arndt and Oman, 2006).

Those indicators are influenced by their audience and the agenda of their institution

The question whether experts adapt their ratings to their audience may legitimately be asked (Knack, 2006). According to Svensson (2005), indicators using opinions from experts generally target the private sector, and more specifically foreign investors, which lead them to measure corruption primarily from a business standpoint. For instance, the ICRG measures explicitly forms of political corruption that The PRS Group considers to be the most risky for its clients, mainly multinational companies. As Arndt and Oman (2006) note, big business interests are not necessarily those of society in general. This can introduce a bias in empirical studies using this type of indicators.

Kaufmann and Kraay (2008) do not find this criticism convincing. They observe that governance scores attributed by profit-making rating agencies whose main clients are private companies are highly correlated with the scores given by other types of institutions, including NGOs and public-sector stakeholders. For the two researchers, if such a bias existed in the assessment of corruption by risk rating agencies, the correlation found between their scores and those of other organisations immune to this bias would not be so high.

A similar criticism relates to biases supposedly resulting from agency relationships prevailing within institutions that produce indicators based on expert assessments. Knack (2006) mentions, among other indicators produced by international organisations, the case of the World Bank's CPIA which could be influenced by the interests of the country teams in charge of its development. For Knack, because the CPIA is of major importance for the determination of the amount of aid flows delivered by the World Bank, the teams based in the evaluated countries would directly benefit from attributing higher ratings than deserved. If they attribute unfavourable scores, country teams may also damage their working relationships with the governments in countries they evaluate. Knack (2006) notes, however, that a statistical analysis carried out on CPIA ratings brings no

⁴ http://www.freedomhouse.org/sites/default/files/FIW%202013%20Booklet%20-%20for%20Web_1.pdf [Accessed on 15 July 2013]

confirmation that scores attributed to IDA countries qualifying for financial support from the World Bank are overrated compared to other countries.

An ideological bias could also affect this category of indicators if the agenda of organisations in charge of their development influence their results. This bias would affect NGOs more particularly. Using business survey data, Kaufmann, Kraay and Mastruzzi (2004) showed that country corruption ratings produced by think tanks are not systematically related to the political orientation of the government in power in those countries, thus providing evidence against the existence of an ideological bias in the construction of indicators based on expert perceptions.

Experts are too similar (home bias)

A recurring criticism is that most experts who provide data for corruption indicators share a similar background. This could generate a bias in their ratings, referred to as “home bias”. Selection processes for analysts, rarely transparent in practice, would tend to favour certain types of experts, typically those originating from economically advanced countries. A direct consequence could be a systematic underestimation of the institutional quality in a number of countries due to an improper understanding of the local culture by those experts (Thompson and Shah, 2005). For Arndt and Oman (2006), the fact that experts share the same background exacerbates the risk of circular thinking as well as the distrust of developing countries’ governments towards expert assessments. However, according to Treisman (2007), it is unlikely that this effect is quantitatively significant. If it were substantial, the correlation found between corruption ratings by foreign and national experts would not be so important.

Experts are influenced by their emotions and prejudices (halo effect)

In his famous study on corruption and economic growth, Mauro (1995) mentions other disadvantages in using perception data from experts. The main problem he identifies is that experts may be influenced by the economic performance of the countries they assess. This bias, known in the literature as “halo effect”, is well documented (Roubaud and Razafindrakoto, 2010). It appears when countries with better economic performance receive, for that reason, better governance evaluations by experts (Kaufmann and Kraay, 2008).

Another concern is that judgments from national experts are affected by their feelings towards the government in power in their country (Kaufmann and Kraay, 2008). This could bias the levels and trends of indicators based on their evaluations.

Similarly, it is not implausible that indicators using expert opinions mirror their prejudices on the causes of corruption (Roubaud and Razafindrakoto, 2010). Institutional variations in a country could persuade experts to adjust their evaluations of the level of corruption, even without directly witnessing any change in corrupt behaviour. In this case, as Treisman (2007) points out, data reflect at least partially theories linking institutional framework and corruption that are supported by these experts.

Experts influence one another (herd effect)

Also problematic is the possibility that experts are influenced by the evaluation of other institutions when forming their own judgment, or use the same (imperfect) sources of information. For Knack (2006), changes in scores for indicators constructed from expert assessments do not always reflect the evaluation of a modification of actual conditions but very often a correction from previous years which, with hindsight, are found by those experts too low or too high relatively to other indicators produced by different institutions. This effect, commonly referred to as “herd effect”, undermines the quality of indicators using expert perceptions (Arndt and Oman, 2006).

Teams of experts, fragmented and changeable, have different opinions

One of the reasons explaining the popularity of indicators based on expert perceptions is that they allow meaningful comparisons of corruption scores across countries and time. Yet, with teams of experts changing regularly, the comparability of data in the time dimension is sometimes questionable. Similarly, if experts do not rate the same set of countries, cross-country comparisons can be dubious. For instance, Treisman (2007) note that The PRS Group does not clarify how they make sure that a given score attributed to a country in a specific year represents the same level of risk as the same score attributed to another country or year.

Evidently, experts can have divergent and even conflicting views on certain aspects of their evaluation. For Kaufmann and Kraay (2008), this should dissuade researchers to rely exclusively on a single evaluation. This issue is illustrated by the remaining gap between the CPIA scores of the World Bank and the African Development Bank, despite the recent harmonisation of their methodologies (Kaufmann and Kraay, 2008).

Lack of transparency

For Mauro (1995), it is not clear whether BI's rating scale, ranging from 0 to 10, where 0 represents the highest level of risk, is everywhere consistent. Concretely, this means that the difference in terms of risk between two scores of 4 and 5 could be different from, for example, the gap between two scores of 7 and 8.

More generally, this type of indicators suffers from a lack of transparency in their methodology and clarity in their evaluation criteria. This is particularly problematic for the comparability of data and replicability of studies. It also generates further measurement error. According to Kaufmann and Kraay (2008), indicators using perceptions from experts are as useful as their evaluation criteria are properly documented. For the two researchers, the World Bank's CPIA and the governance indicators from Freedom House are examples of indicators for which appropriate documentation is provided on the criteria used to attribute scores. They find regrettable that, on the contrary, many organisations producing such indicators refuse to publish their evaluation methodology. Knack (2006) is less definite about the level of transparency of the World Bank's CPIA. Although confirming that the evaluation criteria as well as the reasons for the attribution of a specific score

are available in some detail, he notes that other aspects of the CPIA evaluation are more opaque, most notably the way weights are attributed to the different aspects of corruption listed in the evaluation criteria.

As Knack (2006) notes, when evaluation criteria are undisclosed, the lack of precision of the concept measured by broad and multi-dimensional indicators is exacerbated, as for the corruption indicators of EIU and the World Markets Research Centre (WMRC). The ICRG, a multi-dimensional indicator that has been used recurrently in the economic literature to measure corruption, is not very transparent either. Knack mentions that the ICRG has been recalibrated a number of times, causing unexplained “jumps” in scores attributed to countries from one month to the next. Treisman (2007) also noticed sudden and disconcerting changes in ICRG ratings that raise doubts about the quality of the evaluation. Amendments to the methodology and content of indicators can also make comparisons of corruption levels across time challenging (Knack, 2006), even though this problem is not specific to indicators constructed from expert perceptions. A criticism sometimes addressed to the World Bank’s CPIA is a lack of methodological transparency that threatens the comparability of the indicator over time (Arndt and Oman, 2006). The CPIA’s evaluation criteria, supposedly fixed and explicit, have been revised several times in the past (Knack, 2006).

Poor dissemination

In addition to a lack of transparency in their methodology, the outcomes of those indicators are not always freely available. This is obviously the case for commercial indicators produced by private firms which require users to pay a fee. Other indicators are simply not available to the vast majority of the scientific community. This radically hampers the replicability of studies using those indicators. Poor dissemination of corruption data constructed from expert assessments is an issue acknowledged by Kaufmann and Kraay (2008). They note that scores attributed to the 16 criteria of the World Bank’s CPIA, although partly accessible to the public since 2006 for IDA countries are still not available for all countries for which they are computed. Pre-2005 data have not been published, nor have been the historical data of the African and Asian Development Banks’ CPIAs. As for the *Freedom in The World* index produced by Freedom House, only the ranking of countries in three categories (“Free”, “Partly Free”, “Not Free”) is available. Specific aspects of the evaluation are unrevealed (Arndt and Oman, 2006).

Those indicators are difficult to interpret

Indicators using expert evaluations are rarely provided with a quantification of their measurement error. As Kaufmann and Kraay (2008) note, this situation has contributed to create a false sense of precision and unreasonable emphases on small differences in scores. The PRS Group, for example, does not report any margins of error for the ICRG (Arndt and Oman, 2006).

Those indicators are often characterised by an ordinal and finite scale, which makes their interpretation difficult. In practice, however, researchers usually treat them as cardinal measures (Svensson, 2005).

2. Indicators constructed from survey data

During the 1990s, an alternative to expert assessments for the evaluation of corruption started receiving growing attention: survey data on perceptions and experiences of corruption from a nationally representative sample of households or businesspeople.

While survey data address a number of drawbacks from expert evaluations, they do not entirely eliminate them and add their own limits.

2.1. Advantages of indicators constructed from survey data

They allow a more detailed evaluation of corruption : BEEPS and Enterprise Surveys

According to Knack (2006), the strength of nationally representative surveys of households or firms is in measuring the incidence of corrupt behaviour encountered by users of government services. Unlike indicators constructed from expert assessments, corruption indicators using survey data are not only able to measure the prevalence of certain forms of corruption but also their scale and the share of the population affected, based on direct experiences of corruption as reported by surveyed individuals or firms (Svensson, 2005). For Knack (2006), even though this approach focusses primarily on administrative corruption, it can also inform on some aspects of state capture, including the improper influence over laws and regulations affecting businesses. The BEEPS are an example of such surveys.

The *Business Environment and Enterprise Performance Surveys* (BEEPS) is the outcome of a joint project between the World Bank and the European Bank for Reconstruction and Development initiated in 1999 to evaluate constraints to private sector growth in transition countries. Since 1999, nearly 25,000 firm owners and managers have been surveyed in 29 European and Central Asian countries about the management of their company and their interactions with the state⁵. These surveys have made possible the development of indicators of corruption, state capture, lobbying and quality of the business environment that are comparable across countries. In addition, BEEPS data are sufficiently precise to link back those experiences and behaviours to firm and environmental characteristics (Knack, 2006).

In 2008, the BEEPS were restructured to make them fully compatible with the *Enterprise Surveys*, the centralised unit for firm-level data collection efforts within the World Bank. Those surveys, started in 2002 and covering 135 countries in 2013, mainly developing countries, cover a broad range of business environment topics, including corruption. The *Enterprise Surveys* are designed to be

⁵ <http://beeps.prognoz.com/beeps/MultiHandler.ashx?slc=AboutBeeps> [Accessed on 15 July 2013]

representative of the national private sector. The mode of data collection is face-to-face interviews with the owner or one of the top managers of the sample firms. According to the World Bank, over 90% of the questions “objectively” ascertain characteristics of the business environment, such as the number of days required to obtain a construction permit, or the need to pay a bribe to get such a permit. The remaining questions assess the survey respondents’ opinions on the obstacles to firm growth and performance in their country⁶.

Those indicators are more precise

Because businesspeople form a relatively homogenous group, it is possible to ask them more specific questions knowing that most, if not all of them, will be able to answer them meaningfully (Knack, 2006). Survey questions can therefore be designed in such the way that respondents and analysts do not need to rely much on their own interpretation of broad concepts to answer them. Instead of asking survey respondents whether they think “corruption is widespread”, a better approach could be, for example, to ask them whether they have been solicited for a bribe in the month preceding the survey (Kaufmann and Kraay, 2008). In order to increase response rates and the reliability of the information gathered, a practice now common for this type of surveys is to phrase questions indirectly to avoid implicating the respondent in corrupt behaviour (Svensson, 2003). This is the case for the BEEPS, but also for the World Bank’s *World Business Environment Survey* (WBES) which asked more than 10,000 managers in 80 countries between 1999 and 2000 if it was common for companies “in their line of business” to pay some irregular additional payments to “get things done” (Treisman, 2007).

Those indicators are less exposed to a number of biases

For Treisman (2007), data capturing direct experiences of corruption, although subject to limitations such as selective or imperfect memory and fear of retaliation, are less likely to pick up popular prejudices than the more subjective survey questions.

Because they rely on perceptions, corruption indicators capturing perceptions of households or businesspeople share certain limits with indicators based on expert perceptions. They have, however, some distinct advantages. In contrast to most expert assessments, surveys provide data that are largely independent from other evaluations of corruption. Most managers sampled in surveys like the BEEPS are unlikely to know the governance scores attributed by commercial risk-rating agencies or other groups of experts to the country in which they operate (Knack, 2006). Even if they were informed of those ratings, this would probably not affect their responses to a significant extent. More generally, most firm and household surveys are less likely to have errors that are correlated with other sources of data on corruption than, for example, assessments by risk assessment agencies (Kaufmann, 2008). For some surveys, however, this advantage is less clear. As Knack (2006) notes, the annual World Economic Forum’s (WEF) *Executive Opinion Survey* targets

⁶ <http://www.enterprisesurveys.org/Methodology> [Accessed on 15 July 2013]

specifically “business leaders” with international experience. It is more likely that those managers are exposed to international corruption rankings produced by other institutions. Additionally, the survey explicitly requests its respondents to evaluate their business environment with respect to global norms rather than reasoning in national terms. Knack (2006) mentions a third factor undermining the independence of the WEF’s *Executive Opinion Survey*: the fact that a significant number of partner organisations implementing this survey also work with the International Institute for Management Development (IMD) to implement a similar business survey (also named *Executive Opinion Survey*). Consequently, it is very likely that a number of businesspeople are sampled simultaneously in both surveys.

To some extent, WEF and IMD’s executive surveys are more similar to expert opinion surveys, where “experts” are managers of companies that are leaders in their respective industry. The majority of business surveys are less interested in the opinion of managers exposed to international markets than in the direct experience of corruption from local businesspeople. Moreover, WEF and IMD’s surveys only produce indicators of corruption at the national level, whereas most firm surveys (BEEPS, WBES...) are constructed so as to allow firm-level analyses, and collect to this end information on their characteristics (Knack, 2006).

Despite the fact that firm surveys are better developed (Knack, 2006), household surveys can also provide useful information regarding the state and evolution of corruption at the country level.

Household surveys : ICVS and GCB

By the end of the 1980s, a group of European criminologists followed a few years later by the United Nations Interregional Crime and Justice Research Institute (UNICRI) initiated the *International Crime Victims Survey* (ICVS) project. This survey is part of an international victimisation study analysing the patterns of a number of crimes, including the demand for bribes by government officials. The project’s initial objective was to collect criminal data that could be compared across countries. It became the responsibility of the United Nations Office on Drugs and Crime (UNODC) in 2003. Five rounds of surveys were carried out between 1989 and 2005, for a total of 140 surveys implemented in 78 countries⁷. Surveys used a combination of computer-assisted telephone surveys in developed countries and face-to-face interviews in developing countries. In most developing countries, survey samples were drawn from the capital or major cities, and therefore were not fully representative of the country’s population (Svensson, 2005).

First released in 2003, the *Global Corruption Barometer* (GCB) of the NGO Transparency International is a survey capturing citizens’ experiences and perceptions of corruption practices occurring in their country. The GCB was originally derived from a set of questions drawn from the annual survey *Voice of the People*, created in 2002 and implemented by Gallup International⁸. In countries not covered by Gallup International’s survey (19 countries out of 69 in 2009), Transparency

⁷ http://www.crimevictimsurvey.eu/About_ICVS_2010/History_and_new_pilot [Accessed on 15 July 2013]

⁸ http://www.transparency.org/research/gcb/gcb_2003 [Accessed on 15 July 2013]

International independently commission survey companies⁹. With the exception of a few countries¹⁰, the 2013 version of the GCB was implemented by the WIN/Gallup International network. The GCB survey sample is generally nationally representative, except in a limited number of countries where only urban areas are surveyed. Different approaches are used to administer the questionnaires: face-to-face, self-administration, telephone or, in more economically advanced countries, the Internet¹¹. The 2013 GCB update, the largest to date, surveyed over 114,000 people in 107 countries¹².

Firm vs. household surveys

For Knack (2006), there are fundamental differences between firm and household corruption surveys. First, the former tend to attribute more importance to experiences than to perceptions. Second, household surveys generally suffer from greater comparability problems than firm surveys such as the BEEPS. This problem is partly due to the fact that a number of household surveys, including the GCB and the ICVS, sometimes cover only urban areas when implemented in developing countries.

Beyond their differences, business and household corruption surveys also share a number of strengths. Margins of error can easily be computed for indicators constructed using survey data. This is the case for several BEEPS questions (Francisco-Javier Urrea, 2007). Another advantage is that they capture the views of the population. As Kaufmann and Kraay (2008) note, this is very useful as individuals decide on their future actions on the basis of their beliefs. Lastly, it is likely that official authorities in evaluated countries consider surveys of individuals and local firms a more trustworthy source of information than assessments from external experts, towards which they are generally sceptical (Kaufmann and Kraay, 2008).

2.2. Problems associated with indicators constructed from survey data

Data are not necessarily accurate

Because corruption is illegal, it is difficult to obtain reliable information from businesspeople and citizens on their true experiences with corruption. Survey respondents may deliberately underreport their exposure to corruption by fear of retaliation from official authorities. For Kaufmann and Kraay (2008), many reasons can explain why people provide inaccurate information to surveyors. A patient waiting in line in a hospital might erroneously think that people ahead in the line paid a bribe to get there. Kaufmann and Kraay also give the opposite example of an individual who pays a bribe and receives the expected benefit in exchange. This person, if satisfied with the transaction, will not consider themselves as a "victim" of corruption in this case.

⁹http://issuu.com/transparencyinternational/docs/global_corruption_barometer_2009_web?e=2496456/2192681
[Accessed on 15 July 2013]

¹⁰ http://www.transparency.org/files/content/pressrelease/GCB2013_FAQs_EN.pdf [Accessed on 15 July 2013]

¹¹ http://issuu.com/transparencyinternational/docs/global_corruption_barometer_2009_web?e=2496456/2192681
[Accessed on 15 July 2013]

¹² <http://gcb.transparency.org/gcb201011/> [Accessed on 15 July 2013]

If those measurement issues are not related in a systematic way to country characteristics, they do not represent a danger for cross-country data comparability (Svensson, 2005). Moreover, specific survey techniques can help improve the quality of the data collected. In this respect, the choice of the organisation implementing the survey in the field is crucial. Also, as mentioned earlier, survey questions can be formulated such as to avoid implicating respondents, while relying on the people using the personal experience to answer the questions. Corruption questions can be asked towards the end of the questionnaire, when surveyors had enough time to establish credibility and trust. Finally, corruption-related questions can be asked on different sections of the questionnaire to test the reliability of the data (Svensson, 2003).

The difficulty to obtain accurate information from surveys is particularly pronounced for certain forms of “grand” corruption, as those behaviours and activities (embezzlement, conflict of interest...) take place away from public’s scrutiny (Knack, 2006).

Those indicators are subject to specific biases

Alike experts, perceptions of surveyed citizens and businesspeople can be affected by factors that are not directly related to corruption, like the degree of ethnic heterogeneity of respondents’ communities (Olken, 2009) and the freedom of the press (Roca, 2010). In a study published in 2010, Kaplan and Pathania show that, paradoxically, firm owners’ perceptions of the business environment may be negatively correlated with the GDP growth rate. According to Knack (2006), perceptions of firm survey respondents on whether corruption is an obstacle to business are possibly affected by optimism and prevailing economic conditions. Individual characteristics such as education or age can also influence perceptions. Donchev and Ujhelyi (2013) therefore suggest that data obtained from the same survey implemented in two different countries are directly comparable only if the population of these two countries share the same characteristics along those relevant dimensions.

For Bertrand and Mullainathan (2001), one of the most acute problems brought by subjective questions is that perceptions may change, even over a short period of time. Attitudes may not even “exist” in a coherent form.

Respondents may be tempted to provide answers that do not make them look bad in front of the enumerator or force themselves to express a clear opinion on a topic they have never really thought about before the interview. People may also be wrong about their own attitudes. They can fail to reasonably predict their own behaviour or explain the reasons for their past actions (Bertrand and Mullainathan, 2001).

Cognitive factors can also undermine the quality of the information obtained through surveys. The ordering and formulation of questions matter, together with the scaling and ordering of possible answers (Bertrand and Mullainathan, 2001). Respondents may perceive corruption in absolute (the number of cases) rather than relative (the share of population affected) terms, which penalises large and densely populated countries. Respondents may also have a lower sensitivity to

corruption in regions where it is endemic, implying that estimations of the prevalence of corruption in low and high-corruption environments would not be equally accurate (Donchev and Ujhelyi, 2013).

A cultural bias threatens data comparability

The same questions asked in different countries can be diversely understood, especially when capturing perceptions. This can reduce the comparability of data across countries (Treisman, 2007). While doubting about its actual influence, Kaufmann and Kraay (2008) mention this cultural bias which originates from the fact that individuals living in different countries have contrasting norms about what constitutes corruption. Donchev and Ujhelyi (2013) confirm that populations may differ in essential cultural dimensions, e.g. whether it is acceptable to openly criticize one's current government.

Surveys require a certain degree of interpretation from respondents

Responses to survey questions are often measured on somewhat arbitrary scales (Kaufmann and Kraay, 2008). Knack (2006) illustrates this issue with a question taken from the WEF's *Executive Opinion Survey* that asks managers to assess the frequency of illegal payments in their line of business from seven possible answers ranging from "is common" to "never occurs", without providing any indication on how respondents should interpret this particular wording. Similarly, some questions may be vague and open to interpretation (Kaufmann and Kraay, 2008).

The sampling methodology is not always transparent

The fact that some organisations do not disclose their sampling methodology casts doubt on the true representativeness of their surveys. To illustrate this point, Kaufmann and Kraay (2008) refer to the WEF's *Executive Opinion Survey* which stated objective is to draw a survey sample that is representative of the distribution of firms in terms of sector of activity and size in each country. The WEF also indicates that firms are selected based on their size and scope of activities so as to ensure that executives benefit from international exposure, without clarifying how these two potentially conflicting objectives are reconciled. According to Knack (2006), the IMD provides even less information than the WEF on the size and composition of their *Executive Opinion Survey* sample.

Conducting nationally representative surveys of households in developing countries is particularly challenging (Knack, 2006). Even more serious is the fact that the composition of firm surveys can vary depending on the level of corruption. Some companies may be excluded from survey samples because they belong to the informal sector or choose deliberately not to exceed a certain size as a coping strategy against corruption. Similarly, individuals may give up on establishing their own business or end their activities given the high level of corruption in their country.

Data are costly and poorly disseminated

Poor dissemination of survey data limits their usefulness for research. Sometimes, only aggregate results are available, as for the 2010/2011 version of Transparency International's GCB¹³. The 2013 GCB data are, on the opposite, fully available on request¹⁴.

Survey development and implementation can be very expensive. The BEEPS, for example, were very costly to produce (Francisco-Javier Urra, 2007). This partly explains why so few corruption survey datasets are available to researchers (Svensson, 2005).

3. Composite indicators of corruption

In 1995, Johann Graf Lambsdorff, a young economist working for the NGO Transparency International, developed a composite index that combined several indicators of corruption derived from expert assessments. The initial objective was to strengthen empirical research on the causes and consequences of corruption by providing the research community with an index that could accurately compare levels of corruption across countries¹⁵. The 1995 index aggregates information gathered from seven surveys produced by three institutions (Business International, Political & Economic Risk Consultancy and the Institute for Management Development) and capturing opinions of experts, bank executives and business managers to produce an international ranking of perceived corruption affecting public administration and politics¹⁶.

Very soon, Transparency International's index, whose methodology evolved to become a few years later the *Corruption Perception Index (CPI)*, was enthusiastically received by the media and firmly denounced by the countries at the bottom of the ranking¹⁷. Many criticisms, more or less justified, also targeted the index's methodological groundings as well as its usefulness for corruption research.

The *World Governance Indicators (WGI)*, developed in 1999 by Daniel Kaufmann, Aart Kraay and Pablo Zoido-Lobaton at the World Bank are an attempt to respond to some of those criticisms. The *World Governance Indicators* are six composite indices measuring various aspects of governance at country level, including the prevalence of corruption with the *Control of Corruption (CoC)* index. This index captures the "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests"¹⁸.

¹³ <http://gcb.transparency.org/gcb201011/results/> [Accessed on 15 July 2013]

¹⁴ http://www.transparency.org/gcb2013/in_detail [Accessed on 15 July 2013]

¹⁵ http://www.icgg.org/corruption.cpi_childhooddays.html [Accessed on 15 July 2013]

¹⁶ http://www.icgg.org/corruption.cpi_olderindices_1995.html [Accessed on 15 July 2013]

¹⁷ http://www.icgg.org/corruption.cpi_childhooddays.html [Accessed on 15 July 2013]

¹⁸ <http://info.worldbank.org/governance/wgi/faq.htm> [Accessed on 15 July 2013]

Like Transparency International's CPI, the WGI summarise opinions over the quality of governance from a large number of experts, businesspeople, but also citizens, surveyed by polling companies, think tanks, non-governmental organisations, international organisations and private firms¹⁹.

From the very beginning, the CoC has drawn on a larger pool of primary sources than the CPI. Until 2012, a condition for the inclusion of a data source into the CPI was that this source provided a ranking of countries and evaluated the prevalence of corruption rather than its impact. For Transparency International, the ICRG corruption indicators measure the political risk associated with corruption rather than corruption itself, which is why those indicators have not, until recently, been incorporated into the CPI (Svensson, 2005). The World Bank has decided not to make the same distinction and use the ICRG as a source of data for the WGI, including the CoC index.

Since 2012, the CPI adopts a wider definition and now includes not only primary sources that measure the extent of corruption but also some that assess the success of anti-corruption policies²⁰. In order to increase the statistical precision of their index, Transparency International decided early on to set a minimum of three data sources for a country to be included in the ranking, which is not the case for the World Bank's WGI (Treisman, 2007). The CPI underwent a fundamental methodological review in 2012. The index has been considerably simplified to improve clarity and better portray time trends in corruption perceptions²¹. Transparency International releases the CPI on a yearly basis since 1995. The country coverage of the index has considerably increased over time: from 41 countries in 1995 to 183 countries in 2011 and 176 in 2012. The World Bank's WGI were published once every two years from 1996 to 2002, and annually since 2002. In its latest update, the CoC ranks 212 countries and territories for the year 2011.

The CPI and the CoC have had – and continue to have – a considerable impact on research. Their success can be explained by the substantial benefits of using composite indices of corruption in empirical studies.

3.1. Advantages of composite indices

A wide geographical and temporal coverage

One of the advantages of composite corruption indices is their ability to track a larger number of countries over time than other types of indicators. As Knack (2006) notes, no individual source covers all countries and some indicators do not overlap at all in their country coverage. Combining data from different sources into a single index is a way to use information more effectively.

¹⁹ <http://info.worldbank.org/governance/wgi/resources.htm> [Accessed on 15 July 2013]

²⁰ http://cpi.transparency.org/cpi2012/in_detail/#myAnchor1 [Accessed on 15 July 2013]

²¹ http://cpi.transparency.org/cpi2012/in_detail/#myAnchor7 [Accessed on 15 July 2013]

Measurement errors and biases from individual sources can be attenuated

Another significant advantage of composite indices over other corruption indicators is their potential capacity to reduce the influence of measurement error affecting inherently every indicator. If measurement errors are largely independent from one individual data source to another, then errors tend to cancel out when data are aggregated (Knack, 2006).

For Kaufmann and Kraay (2008), it is useful to distinguish between two types of measurement error: a statistical error (e.g. the sampling error for firm and household surveys) and a measurement error associated with the fact that no single indicator can measure concepts as broad as governance or corruption on its own, regardless of how statistically accurate the indicator is. Aggregate indicators can usefully synthesize and provide an overview of a wide range of individual indicators. They can also help researchers exploit the complementarities between the different categories of indicators (expert assessments, firm and household surveys). Conversely, individual corruption indicators, or even a set of indicators taken from the same data source (e.g. BEEPS) may be defined too narrowly to answer certain questions (Knack, 2006).

Composite indicators can also attenuate the effect of source-specific biases. Data contained in the CPI and CoC are collected partly from domestic and international experts, but also from firm owners and managers and, in the case of the CoC, from a number of citizens of countries included in the index. The aggregation of multiple primary indicators into a single composite index reduces the impact of biases characterising individually each of those categories of corruption data.

Those indicators allow the explicit calculation of margins of error

Combining data sources enables researchers to provide a quantification of the measurement errors affecting the composite index and its primary sources (Kaufmann and Kraay, 2008). Margins of error can usefully remind users of corruption indicators that they cannot always interpret small differences in scores between countries and time periods. For Kaufmann and Kraay (2008), differences in scores can be interpreted only as long as their confidence intervals do not overlap. Following this rule, a substantial share of possible comparisons between the WGI scores of two countries, or two periods for the same country, appear to be statistically significant. According to Kaufmann and Kraay, this indicates that the WGI are particularly informative.

The success of composite indicators of corruption should not hide the many criticisms, with some targeting an indicator more specifically while others challenge the concept of composite indicators more generally.

3.2. Problems associated with composite indicators of corruption

A definition that is imprecise and uncertain

Among the CPI sources are assessments from local and international experts and surveys of businesspeople. A number of indicators included in the CoC evaluate the frequency of bribe

payments while others measure their size or the economic costs of corruption. Some sources describe political corruption and several others assess acts of corruption that take place at the administrative level. Indicators also differ in the extent of their geographical coverage (Treisman, 2007). Consequently, it is not easy to define precisely what these composite indicators intend to measure concretely. The combination of indicators measuring concepts that are somewhat distant from one another reduces the conceptual precision of the resulting composite index while favouring a reduction in measurement error, provided that measurement error is indeed a reason why indicator outcomes vary in the first place. Kaufmann and Kraay (2008) do not dispute the fact that aggregating individual data sources into a single composite index creates an inevitable loss of specificity.

For Knack (2006), the CPI and the CoC are not only imprecise in what they seek to measure but tend also to be relatively “uncertain” in their definition. The way those indices are calculated adds an element of uncertainty to the concept measured. Uncertainty is especially important when the rating criteria of primary sources are undisclosed and the aggregation method is opaque. In the case of the CPI (until 2012), primary sources are weighted equally, except for business surveys for which the last two years of data are included (which is no longer the case with the new methodology). Data sources constituting the CoC receive a weight that is proportional to their degree of correlation with the other primary sources, using a statistical method derived from the principal-component analysis. For Treisman (2007), the debate around which aggregation methodology is the most appropriate is not particularly relevant as those indices are ultimately highly correlated.

A definition that is unstable

In practice, composite indicators are implicitly defined by their primary sources and the way these sources are combined. As the number and type of data sources are likely to change over time and be different across countries, so does the implicit definition of corruption measured by composite indicators (Knack, 2006). This definitional instability creates issues of comparability for scores attributed to different countries and periods (Arndt and Oman, 2006).

Interpreting scores and their evolution is complex

Utmost caution is required when interpreting scores and their evolution. A modification of the type or number of primary sources in a composite index can alter scores, even though corruption (actual or perceived) remains unchanged (Knack, 2006). Kaufmann and Kraay (2008) argue that alterations in the database of primary sources only account for a minor share of changes in WGI scores over time. They also assert that the majority of cross-country comparisons of WGI scores are based on a substantial number of data sources in common, which should circumvent most comparability problems.

A similar issue arises when the methodology underpinning a composite index undergoes revisions (Arndt and Oman, 2006). Two major changes affecting the CPI were adopted in 2002: the exclusion

of surveys of the general public from possible data sources in favour of expert assessments and surveys of businesspeople and the adoption of a new procedure (“matching percentile”) to standardise the scores of individual indicators before they are averaged to form the index (Thompson and Shah, 2005). Thus, comparisons between pre- and post-2002 scores are particularly hazardous. Despite the major CPI revisions adopted in 2002 and 2012 and the frequent changes in its database of primary sources, no retrospective recalculation of the index has been performed by Transparency International. In contrast, the World Bank provides an update of past WGI scores every time their database of primary sources is revised²².

Until 2012, the CPI reused the same businesspeople surveys for two consecutive years, which had the direct consequence of reducing interannual variability in scores (Treisman, 2007). For this reason and others, teams working at Transparency International and the World Bank on the development of the CPI and the CoC have persistently warned users against interpreting small differences in scores from one year, or one country, to another. Because the number of countries included in those indices has changed over time (from 184 in 1996 to 212 in 2011 for the 2012 CoC update), comparing rankings across time-periods is not more appropriate. These problems have not prevented a number of researchers from analysing CPI data compiled as a time series cross-section panel (Treisman, 2007).

In the case of the World Bank’s CoC, the standardisation procedure used to rescale primary indicators may prevent users from tracking changes over time (Knack, 2006). For each WGI index and every year they have been computed, the average score of governance is set to 0 and the standard deviation to 1, by construction (Arndt and Oman, 2006). WGI indices, including the CoC, therefore cannot effectively isolate improving or deteriorating global trends in governance. According to Kaufmann and Kraay (2008), there is no clear evidence of a trend in any indicator constituting the WGI. The choice of a constant global governance level would then only translate an innocent choice of units that does not prevent comparisons of WGI scores over time. Arndt and Oman (2006) do not find this argument convincing as they believe empirical evidence of constant governance at the global level is also lacking. Furthermore, they note that for the WGI to be effectively comparable over time, not only the global governance level must be constant, but also its standard deviation (set to 1 by definition), which should not be considered as granted. Their third argument for the lack of comparability of WGI scores across time periods is that many primary sources do not allow meaningful comparisons of their scores over time.

Primary sources are not always accessible

For Knack (2006), if some primary indicators are constructed in a non-transparent manner, the resulting composite index is likely to be somewhat opaque as well, regardless of how transparent the aggregation procedure is. Limited access to primary sources reinforces opacity as users cannot replicate indices (Arndt and Oman, 2006). A common criticism made to the CPI, still valid despite

²² <http://info.worldbank.org/governance/wgi/resources.htm> [Accessed on 15 July 2013]

the recent changes in its methodology, is insufficient access to its primary sources. In opposition, the World Bank has been publishing the raw scores of WGI primary sources for several years.

Normalisation and aggregation techniques are complex and controversial

A “natural” method of combining individual indicators is to attribute them an equal weight in the composite index (Knack, 2006). The current version of the CPI weights each of its components equally. This was not exactly the case prior to the 2012 methodological revision as different rounds of the same business surveys were included as a separate source.

Before the 2012 revision, CPI primary sources were normalised using country rankings rather than raw scores before being aggregated. This method is questionable as it entails a non-negligible loss of information. In contrast, the weights of the WGI sources are determined by how closely related they are with others, using a statistical method derived from the principal-component analysis.

The hypothesis of independence of primary sources is doubtful

The objective of improving the accuracy of a composite index can justify attributing different weights to primary sources. Those weights should, however, be assigned on the basis on how informative these sources are, something that is not necessarily reflected in their cross-correlations (Knack, 2006). For the World Bank team in charge of the WGI, if sources are independent of each other, a source that agrees more with the others is by assumption less affected by measurement error and is therefore a more accurate measure of governance. This justification no longer applies if measurement errors are correlated across primary sources. Insofar as experts rely on the same (imperfect) sources of information to form their perceptions, it is conceivable that measurement errors in expert assessments are more correlated with one another than with measurement errors contained in surveys of citizens and businesspeople. In this case, the WGI aggregation method assigns excessively large weights to expert ratings, compared to other types of governance data.

If the aggregation procedure favours a specific type of data, biases associated with it can sensibly affect the outcomes of the composite indicator. According to Kaufmann and Kraay (2008), this issue is unlikely to be substantial in view of the lack of empirical evidence that perception errors are indeed correlated.

If measurement errors are correlated across data sources, the rationale for combining data into a single composite index is undermined. Kaufmann and Kraay (2008) acknowledge that aggregate indicators can only attenuate the component of measurement error that is truly independent across primary indicators.

Additionally, if errors are correlated, confidence intervals for composite indices are systematically underestimated (Svensson, 2005). For this reason, Knack (2006) believes that gains in statistical precision derived from aggregating corruption data into composite indicators are likely far more modest than claimed. Quantifying the degree of interdependence among primary sources is impossible. Nevertheless, according to Knack, if appropriate corrections were made to account for

the correlations in measurement errors across data sources, far less differences in WGI and CPI scores across countries and time would be significant.

4. Selecting the right corruption indicators

From a researcher's perspective, the decision to favour one indicator over another in an empirical study on corruption is likely not to be innocent. In fact, the results and conclusions of the study can fluctuate depending on which indicator is selected, as those indicators may not have the same coverage (leading to work on different samples) and are imperfectly correlated (when working on the same sample). There are no formal rules to follow for the choice of an indicator and very often this choice is made by the researcher on an *ad hoc* basis. The various categories of corruption indicators have different advantages and drawbacks, reviewed in detail in the first sections of this report. Knowledge about these pros and cons makes it possible to design a decision-making tool aiming at guiding researchers in selecting in a more methodical way one or more indicators suitable for their study depending on the objectives and constraints of their research question. This is the purpose of this section.

4.1. Does the choice of the indicator matter?

If all available corruption indicators produced very similar, if not identical, assessments of corruption, the issue of choosing among indicators would be immaterial. A close examination of rank correlations (Spearman) between several indicators reveals, on the contrary, that this choice does matter.

The two major corruption composite indices – the CPI and the CoC index – are highly correlated. The country rankings in the 2010 versions of the two indices exhibit a correlation close to 0.99. Hence, as Treisman (2007) notes, the debate around which of the two methods used for the CPI and the CoC is the most appropriate to normalise and aggregate primary sources is rather pointless. This close correlation is not particularly surprising as the two indices have a substantial number of primary sources in common.

The country rankings of corruption obtained with these two indices are also very much correlated with those of several indicators built from expert opinions (coloured in blue in the subsequent table on the next page).

Table of cross-correlations

	IPD (1)	IPD (2)	ICRG	GCI (1)	GCI (2)	GCB (1)	GCB (2)	WGI	CPI
IPD 2009 Petty corruption	1.000								
IPD 2009 Political corruption	0.821	1.000							
ICRG 2010 Corruption	0.718	0.656	1.000						
GCI 2010 Bribery	0.797	0.720	0.789	1.000					
GCI 2010 Grand corruption	0.693	0.648	0.786	0.902	1.000				
GCB 2010 Bribery	0.799	0.693	0.684	0.755	0.703	1.000			
GCB 2010 Corruption perceptions	0.551	0.542	0.653	0.656	0.727	0.569	1.000		
WGI 2010 Control of Corruption	0.866	0.840	0.830	0.922	0.843	0.801	0.628	1.000	
CPI 2010	0.855	0.814	0.825	0.947	0.869	0.803	0.632	0.985	1.000

Spearman correlations, all significant at conventional levels, are computed on a common sample of 70 countries and territories evaluated by the nine indicators included in the table.

The countries and territories are the following: Azerbaijan, Argentina, Australia, Austria, Bangladesh, Bolivia, Brazil, Bulgaria, Cameroon, Canada, Sri Lanka, Chile, China, Colombia, Czech Republic, Denmark, Ethiopia, Finland, France, Germany, Ghana, Greece, Hong Kong, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Kenya, South Korea, Lebanon, Latvia, Lithuania, Malaysia, Mexico, Mongolia, Morocco, Mozambique, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Russia, Senegal, Serbia, Singapore, Vietnam, Slovenia, South Africa, Zimbabwe, Spain, Switzerland, Thailand, Turkey, Uganda, Ukraine, United Kingdom, Tanzania, United States, Venezuela, Zambia, and Taiwan.

The indicators examined are (from top to bottom):

- The evaluation of petty corruption (IPD 1) and political corruption (IPD 2) from the “*Institutional Profiles Database*” (IPD) developed in 2009 by researchers from the French Ministry for Economic Affairs and the French Development Agency.
- The “Corruption” component of the 2010 *ICRG* by the PRS Group.
- “Irregular Payments and Bribes” (GCI 1) and “Diversion of Public Funds” (GCI 2) indicators from the 2010 *Global Competitiveness Index* (GCI), produced by the World Economic Forum.
- “Percentage of people that have paid a bribe in the past 12 months” (GCB 1) and “Perceptions of Corruption in Public Institutions” (GCB 2) from Transparency International’s 2010/2011 *Global Corruption Barometer*.
- The “Control of Corruption Index” from the World Bank’s 2010 *World Governance Indicators* (2012 update).
- The 2010 version of Transparency International’s CPI.

For more information, refer to the FERDI database of corruption indicators (which includes neither the GCB nor the ICRG).

The networks of experts producing the ICRG and the IPD – both included in the CPI – generate corruption rankings very similar to the two composite indices, with correlations close to 0.8. The degree of correlation among those two indicators constructed from expert assessments is however significantly lower, not exceeding 0.7.

Composite indices are even more correlated to the corruption assessments performed by business managers in the framework of the World Economic Forum’s 2010 *Global Competitiveness Index* (GCI). The GCI’s *Executive Opinion Survey* is used in both the 2010 versions of the CPI and the CoC index,

which partly explains this strong correlation. As mentioned earlier, this annual *Executive Opinion Survey* targets specifically “business leaders” with international experience. As a consequence, this survey informing the GCI is probably more similar to expert opinion surveys, where “experts” are managers of companies leaders in their respective industry, than to surveys of local businesspeople. GCI indicators are nevertheless sensibly different from IPD and ICRG indicators, specifically in their evaluation of “grand” corruption.

Indicators obtained from the 2010/2011 GCB survey, which targets citizens, generate corruption rankings that are significantly different from the other categories of indicators, even though those indicators are still statistically correlated with the GCB indicators. This is particularly noticeable for the indicator of perceptions of corruption in public institutions, a phenomenon that the general population is likely to be less qualified to evaluate than other categories of respondents, particularly experts.

Unsurprisingly, indicators derived from the same sources (IPD, GCI or GCB) produce very similar rankings. The fact that the IPD, GCI and GCB indicators measure corruption at different scales allows us to demonstrate that the CPI and the CoC index are correlated more strongly with measures of administrative corruption than with indicators capturing elements of “grand” corruption.

Despite the fact that the country rankings of all indicators displayed in the table are positively correlated, the high variance in cross-correlations calls for caution. The choice of favouring one indicator over another in an empirical study is clearly nontrivial. The analysis of rank correlations shows that, with the exception of composite indices, indicators belonging to a same group (expert perceptions, experiences and perceptions of citizens and businesspeople, and composite indices) are not necessarily more correlated with one another than with other categories of indicators. Institution-specific methodological approaches could account for a substantial share of differences in rankings between indicators. For a researcher, the process of selecting a suitable indicator should therefore not be confined solely to deciding on the most relevant category of respondents but should also factor in a number of additional considerations, described in detail in the next section.

4.2. Criteria for choosing a corruption indicator

Criterion #1: the definition of corruption adopted

The *definition of corruption* adopted by the researcher for a study is the first element to take into consideration when selecting a corruption indicator.

There is no consensus on a universal definition of corruption (Svensson, 2005) and activities such as lobbying, private contributions to electoral campaigns or other types of influence (e.g. revolving door, gifts) may or may not, depending on the researcher’s views and interests, be included in the field of investigation. Some definitions of corruption are confined to the public sector, whereas

others encompass “private-to-private” misconducts such as collusions between private firms or abuse of power on the part of an employee or manager at the expense of their company. Regardless of the way corruption is defined in the study, this definition must be consistent with the one used for the construction of the selected indicator.

Some initiatives aiming at measuring corruption, including the ICVS, focus exclusively on interactions between citizens and public officials. Others intend to measure corruption occurring between firms, like the *Bribe Payers Index* (BPI) of Transparency International.

Very often, it is difficult to uncover the definition of corruption used by an institution for the construction of a corruption indicator. As for the subcategory *Accountability* of Mo Ibrahim foundation’s Ibrahim Index of African Governance (IIAG)²³, an explicit definition is rarely provided.

The definition of corruption mentioned by an institution producing a corruption indicator may sometimes differ substantially from its practical implementation. For example, Transparency International defines corruption as “the abuse of entrusted power for private gain”, applied to both the public and private sector. The CPI, however, only collects perceptions of corruption in the public sector. According to the World Bank, the CoC index captures “perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests”²⁴. It is worth noting, however, that the aggregation procedure arguably skews this definition in favour of some of those corruption forms by attributing them larger weights in the index.

The researcher must therefore carefully check that the definition of corruption used for the construction of a selected indicator corresponds not only in principle but also in practice to the way corruption is defined in the study.

Criterion #2: the researcher’s objective

The *objective* of the researcher has obviously an important role to play in the choice of an appropriate indicator.

A researcher can be interested in corruption perceptions more than in its actual prevalence, in which case they should clearly examine corruption indicators constructed from perceptions, either from experts, businesspeople or the general population. If the study requires an indication of progress regarding the fight against corruption, the researcher may look into indicators capturing citizens’ opinions about anti-corruption national policies, like Transparency International’s GCB, or one of the Bertelsmann foundation’s *Bertelsmann Transformation Index* (BTI) corruption indicators which assesses, based on evaluations by experts, the degree of governmental success to contain corruption.

²³ <http://www.moibrahimfoundation.org/downloads/2012-IIAG-methodology-EN.pdf> [Accessed on 15 July 2013]

²⁴ <http://info.worldbank.org/governance/wgi/faq.htm> [Accessed on 15 July 2013]

Likewise, a number of indicators are appropriate for time series analyses whereas others can only provide a “snapshot” of the state of corruption. Because of its specific features and the many revisions made to its methodology since 1995, pre-2012 CPI scores are not directly comparable over time, unlike other Transparency International’s global indices such as the GCB²⁵ and BPI²⁶.

Criterion #3: the type of corruption assessed

The selection process must also consider the *type of corruption* corresponding to the research question.

Composite indicators such as the CoC, CPI and IAG have a relatively large scope and therefore may be more relevant for studying corruption in broad terms.

If the study is about specific types of “petty” corruption (e.g. bribery, absenteeism of public officials), the researcher would be more successful exploring household and business surveys which are more able to provide reliable information on these forms of corruption than composite corruption indicators. In order to measure the prevalence of various forms of administrative corruption impacting businesses, the researcher could examine for instance the World Bank’s *Enterprise Surveys*²⁷. Alternatively, the *Rule of Law Index* produced by the World Justice Project provides indicators of the prevalence of three forms of corruption - bribery, extortion, and influence peddling - affecting the executive branch, the judiciary, the legislature, the police and the military in 97 countries, using a general population survey²⁸.

Expert assessments are usually the most reliable source of data to inform researchers about certain forms of “grand” corruption (e.g. embezzlement, conflicts of interests). Corruption indicators contained in the ICRG measure political corruption and more specifically the forms of political corruption that The PRS Group, the institution producing the ICRG, consider to be the most risky to foreign companies: excessive patronage, nepotism and suspiciously close ties between politics and business. The “Institutional Profiles Database” (IPD), developed by researchers from the French Ministry for Economic Affairs and the French Development Agency includes an evaluation of “grand” corruption between government agencies and private firms as well as a measure of the prevalence of political corruption (e.g. bribery to secure public office, rigged elections, vote buying). Data are obtained from a global survey involving experts based in the country offices of the two institutions²⁹.

Criterion #4: the appropriate measurement tool

The issue of measurement in relation to the research question addressed is also relevant for the choice of a suitable corruption indicator. Measuring the proportion of the population affected by

²⁵ http://www.transparency.org/files/content/pressrelease/GCB2013_FAQs_EN.pdf [Accessed on 15 July 2013]

²⁶ http://bpi.transparency.org/bpi2011/in_detail/#myAnchor7 [Accessed on 15 July 2013]

²⁷ <http://www.enterprisesurveys.org/Data/ExploreTopics/corruption> [Accessed on 15 July 2013]

²⁸ <http://worldjusticeproject.org/factors/absence-of-corruption> [Accessed on 15 July 2013]

²⁹ http://www.cepii.fr/institutions/doc/2007_02.pdf [Accessed on 15 July 2013]

corruption, the costs of corruption for society, the incidence of corruption activities or their scope require different sets of indicators.

For example, the corruption questions included in the ICVS provide data on the proportion of the population asked or expected to pay a bribe to government officials during the civil year preceding the survey as well as the rate of reporting to relevant authorities. *Afrobarometer*, a research instrument that assesses the social, political, and economic atmosphere in Africa measures the frequency of bribe payments by the population in the context of various interactions with government officials. This survey also captures citizens' perceptions about the involvement of public officials and politicians in corruption as well as their views on the way their government combats corruption.

Other indicators measure the quality of governance, beyond corruption. The CPIA *Transparency, Accountability and Corruption* (TAC) criterion, produced independently by the World Bank and the African Development Bank, evaluates not only state capture by private interests but also the extent to which the executive branch as well as public sector employees can be held accountable for their use of funds and the results of their actions and the access of civil society to information on public affairs³⁰.

The International Fund for Agricultural Development's (IFAD) *Accountability, Transparency and Corruption in rural areas* (ATC) indicator assesses the extent to which, at the local level, the government - at both the executive and legislative level - as well as public employees and elected officials can be held accountable to rural poor people for the resources used in the course of their actions³¹. Therefore, and in contradiction to what its name suggests, the ATC indicator does not measure corruption but rather the degree of accountability of public actors. The IFAD justifies this strategy by arguing that a high level of accountability discourages corrupt practices.

Similarly, one of the corruption indicators in Bertelsmann foundation's BTI measures the extent to which public office holders who abuse their positions are prosecuted or penalized. This indicator, along with the CPIA's TAC criterion of both the World Bank and the African Development Bank are present in the 2012 CPI update. According to Transparency International, an indicator is eligible to enter the new version of the index if it measures the effectiveness of corruption prevention as "this can be used as a proxy for the perceived level of corruption"³². It should be recalled that until 2012 Transparency International was excluding the ICRG from the CPI, arguing that the corruption indicators included in this index were not measuring corruption but the political risks associated with corruption. The ICRG is, however, involved in the new version of the CPI.

³⁰ <http://data.worldbank.org/indicator/IQ.CPA.TRAN.XQ> and <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2012-CPIA%20Questionnaire.pdf> [Accessed on 15 July 2013]

³¹ <http://www.ifad.org/operations/pbas/docs.htm> [Accessed on 15 July 2013]

³² http://files.transparency.org/content/download/533/2213/file/2012_CPI_DataPackage.zip [Accessed on 15 July 2013]

The World Bank's CoC index also contains a number of indicators, notably the IFAD's ATC, which do not measure so much "perceptions of the extent to which public power is exercised for private gain"-what the index is supposed to capture - but rather the degree of accountability of political leaders and public officials.

Criterion #5: biases associated with indicators

Corruption indicators are affected by different biases, reviewed in detail in the first three sections of this document. A researcher must factor them in when searching for a suitable indicator as biases can threaten the quality of their study. Depending on the research objectives and constraints, some biases are more problematic than others. The fact that the different categories of corruption indicators (based on expert ratings, household and business surveys, and composite indicators) have different biases hence becomes an asset. If the researcher considers the cultural bias, the fact that individuals living in different parts of the world have different norms about what constitutes corruption, as the main threat to the quality of their study, indicators using expert opinions should be favoured as they are less subject to this particular bias than other types of corruption data, especially surveys of citizens and local businesspeople. Conversely, if the researcher is mostly worried about a "herd effect" that appears when opinions are formed using the same (imperfect) sources of information, indicators constructed from survey data on experiences of corruption become an appropriate alternative to indicators using expert ratings. It is also worth keeping in mind that composite corruption indicators have the potential capacity to reduce the impact of biases characterising individually each category of corruption data through the aggregation process.

Criterion #6: the temporal and geographical coverage

Most composite indices of corruption, including the CoC and the CPI, and a fair number of indicators using expert assessment data such as the ICRG cover a large number of countries over a significant period of time. This is one of the main reasons for their extensive use in empirical macroeconomic studies on corruption in the last two decades. Yet, most corruption indicators cover a more limited number of countries (e.g. Afrobarometer, World Bank's CPIA) and/or provide data less frequently (e.g. ICVS, WBES). Those indicators may nevertheless be relevant for cross-sectional or regional studies.

4.3. Lessons

Lastly, these are good practices worth reminding ourselves when working with corruption indicators:

- Identify and acquire mastery over the methodology used to construct the indicator
- Identify the genuine potential for comparability over time and/or between countries
- Select appropriate indicator(s) following the above-mentioned criteria.
- Acknowledge and document the limitations of the indicator and its potential biases

- Take measurement error seriously
- Test the robustness of the results with alternative indicators meeting above criteria
- Promote replicability by granting access to the data (whenever possible)

Conclusion

This critical review, along with the FERDI database of corruption indicators, provides a systematic analysis of the main initiatives aiming at measuring corruption at the macroeconomic level. The objective of this study is to determine the relative strengths and weaknesses as well as the context in which those indicators used in corruption research are the most relevant. This review is also a first step in the definition of directions for future research towards the improvement of current corruption indicators and the development of more effective measurement instruments. Findings from this research will in turn contribute to improving our understanding of corruption and back up the formulation of concrete policy recommendations to development actors.

Abbreviations

ATC	Accountability, Transparency and Corruption in rural areas
BEEPS	Business Environment and Enterprise Performance Surveys
BI	Business International
BPI	Bribe Payers Index
BTI	Bertelsmann Transformation Index
CoC	Control of Corruption
CPI	Corruption Perception Index
CPIA	Country Performance and Institutional Assessment
EIU	Economist Intelligence Unit
GCB	Global Corruption Barometer
ICRG	International Country Risk Guide
ICVS	International Crime Victims Survey
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IIAG	Ibrahim Index of African Governance
IMD	International Institute for Management Development
IPD	Institutional Profiles Database
GDP	Gross Domestic Product
NGO	Non-Governmental Organisation
OBI	Open Budget Index
TAC	Transparency, Accountability and Corruption
UNICRI	United Nations Interregional Crime and Justice Research Institute
UNODC	United Nations Office on Drugs and Crime
WBES	World Business Environment Survey
WEF	World Economic Forum
WGI	World Governance Indicators
WMRC	World Markets Research Centre

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Appendix B



TRANSPARENCY
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CORRUPTION DANS LES SERVICES PUBLICS D'ANTANANARIVO

RÉSULTATS DES ENQUÊTES
D'ENTREPRISE



Transparency International est la principale organisation de la société civile à l'échelle mondiale à se consacrer à la lutte contre la corruption. Avec plus de 100 sections dans le monde et un secrétariat international basé à Berlin, Transparency International sensibilise l'opinion publique aux effets dévastateurs de la corruption et travaille en collaboration avec les gouvernements, le secteur privé et la société civile afin de développer et mettre en œuvre des mesures visant à la combattre.

Fondée en 1997, Transparency International – Initiative Madagascar (TI-IM) est la section malgache du réseau Transparency International depuis 2002. TI-IM contribue à la lutte contre la corruption à Madagascar par la promotion des principes d'intégrité et de transparence auprès des acteurs de la société malgache.

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Tous les efforts ont été mis en œuvre pour garantir l'exactitude des informations contenues dans ce rapport. Cependant, Transparency International – Initiative Madagascar ne peut être tenu responsable d'éventuelles erreurs ou omissions.

Le projet CAPS a pu voir le jour grâce à la générosité de :

L'Ambassade du Royaume-Uni
à Madagascar

La Fondation pour les Études et Recherches
sur le Développement International



British Embassy
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Acronymes

BEEPS	<i>Business Environment and Enterprise Performance Survey</i>
BIANCO	<i>Bureau Indépendant Anti-Corruption</i>
CAJAC	<i>Centre d'Assistance Juridique et d'Action Citoyenne</i>
CAPS	<i>Corruption in Antananarivo's Public Services</i>
CFRA	<i>Commission Fiscale de Recours Administratif</i>
FERDI	<i>Fondation pour les Études et Recherches sur le Développement International</i>
INSTAT	<i>Institut National de la Statistique Malgache</i>
JIRAMA	<i>Jiro sy Rano Malagasy</i>
TI-IM	<i>Transparency International – Initiative Madagascar</i>
TVA	<i>Taxe sur la Valeur Ajoutée</i>

RÉSUMÉ

Le projet *Corruption dans les services publics d'Antananarivo* (ou CAPS pour *Corruption in Antananarivo's Public Services*) de Transparency International – Initiative Madagascar (TI-IM), mis en œuvre en partenariat avec la Fondation pour les Études et Recherches sur le Développement International (Ferd), est une initiative visant à promouvoir l'adoption de réformes devant contribuer à améliorer la gouvernance et la qualité des services publics de la capitale malgache.

Le module « Secteur privé » du projet, financé par l'ambassade du Royaume-Uni à Madagascar, ainsi que par le Secrétariat international de Transparency International, a pour objectif d'évaluer les principales contraintes posées par la corruption administrative aux entreprises privées opérant à Antananarivo.

Dans le cadre de cette étude, deux enquêtes d'entreprise ont été réalisées par l'équipe de recherche de TI-IM dans quatre districts de la région Analamanga au cours du mois de novembre 2014. La première de ces deux enquêtes concerne les entreprises créées après le 1^{er} janvier 2012 et a pour but de comprendre les contraintes posées par la corruption administrative à la création d'entreprise dans la capitale. La seconde enquête évalue quant à elle les principales formes de corruption administrative affectant les entreprises établies depuis au moins trois ans (avant le 1^{er} janvier 2012) et de taille plus importante (comptant au moins 10 salariés). 247 entreprises ont été approchées dans le cadre de la première enquête, et 189 pour la seconde, pour un total de 436 répondants.

Ces deux enquêtes sont uniques dans la mesure où jamais auparavant des informations aussi précises n'avaient été collectées sur les pratiques de corruption entre l'administration et le secteur privé à Madagascar, en particulier au niveau de la fréquence et des montants de pots-de-vin payés par les entrepreneurs dans le cadre de leurs interactions avec les agents de l'État. Comme pour toute enquête portant sur un sujet aussi sensible que celui de la corruption, il convient néanmoins de noter que le taux de refus des enquêtes, supérieur à 50 %, et le taux important de non-réponse pour certaines questions doivent inciter à la prudence quant à l'interprétation des résultats. Plus spécifiquement, le niveau élevé de réticence des entrepreneurs à révéler leur expérience personnelle de la corruption incite à penser que la prévalence de la corruption telle qu'estimée dans ce rapport est sous-estimée par rapport à la réalité. Il est par ailleurs nécessaire de noter que les données collectées dans le cadre de cette étude présentent

uniquement les entrepreneurs comme victimes de la corruption et ne captent donc pas la corruption sollicitée par les entreprises, bien que ce phénomène puisse être quantitativement important.

Le présent rapport synthétise les principaux résultats de l'étude et introduit une série de dix recommandations de réforme émanant du secteur privé et à destination des décideurs publics.

L'étude CAPS confirme que la corruption est un obstacle au développement de l'activité des entrepreneurs d'Antananarivo, et que ce problème tend à s'aggraver. Mieux encore, elle quantifie ces contraintes. Les entrepreneurs interrogés dans le cadre des deux enquêtes CAPS estiment ainsi à 11 % du chiffre d'affaires annuel des entreprises similaires à la leur – ou 6 200 000 ariary – le montant qui doit être payé annuellement aux agents publics sous forme de cadeaux ou autres paiements informels pour que les « choses soient faites ». Ces entrepreneurs considèrent massivement (à 74 %) la corruption comme un obstacle à leur activité. Ils sont 93 % à considérer que la situation s'est aggravée ces deux dernières années.

La corruption représente une barrière à la concurrence et à la libre entreprise, et incite les entreprises du secteur informel à ne pas régulariser leur situation. Plus de 100 000 ariary sont en effet nécessaires, en moyenne, en paiements informels pour créer une entreprise à Antananarivo. Toujours d'après les données collectées par les enquêtes CAPS, les entreprises les plus récentes apparaissent plus touchées par la corruption, en pourcentage de leur chiffre d'affaires, que les entreprises plus anciennes.

Les enquêtes révèlent par ailleurs que plus les sommes d'argent en jeu sont importantes, plus les cas d'extorsions de la part d'agents publics sont coûteux pour les entreprises. Ainsi, près d'un tiers (29 %) des chefs d'entreprise victimes de vols, vandalisme, fraude ou escroquerie dans l'année écoulée se sont vus demandé un pot-de-vin au moment du dépôt de leur plainte. Les entreprises ayant subi les pertes financières les plus importantes sont celles qui doivent payer le plus. Les entrepreneurs enquêtés estiment par ailleurs à 24 % la part des pots-de-vin dans le coût total d'une action en justice pour les entreprises similaires à la leur. Pour les chefs d'entreprises de la capitale ayant fait face à des demandes de pots-de-vin de la part d'inspecteurs de l'administration, ce ne sont pas moins de 2 000 000 ariary qui sont réclamés, en moyenne, au cours d'une seule année. Le montant demandé par les agents fiscaux est même deux fois supérieur.

Il apparaît également que les délais administratifs sont fonction de la corruption. Des agents publics peu scrupuleux utilisent fréquemment ce moyen de pression pour inciter les entreprises à effectuer des paiements illégaux de façon à « accélérer les choses ». De fait, le nombre de jours nécessaires pour obtenir une connexion à l'électricité pour une entreprise de la capitale est inversement proportionnel au montant de pots-de-vin versés au cours du processus de raccordement. Parallèlement, le fait de payer des pots-de-vin réduit de 19 jours, en moyenne, le temps d'obtention des documents nécessaires à la création d'une entreprise. De la même façon, les entrepreneurs ayant déclaré devoir payer des pots-de-vin pour obtenir un permis de construire ont attendu 115 jours en moyenne pour l'obtenir, contre 334 jours pour ceux déclarant ne pas en payer.

La corruption pousse même certains entrepreneurs à éviter d'entrer en contact avec l'administration lorsque cela est possible. Il apparaît ainsi que des entreprises pouvant bénéficier d'un remboursement d'une partie de la taxe sur la valeur ajoutée (TVA) qu'ils collectent n'en font pas la demande. De la même façon, des sociétés choisissent de ne pas participer à des appels d'offres publics, s'excluant elles-mêmes de marchés représentant des perspectives économiques intéressantes. Parmi les chefs d'entreprises d'Antananarivo ayant déclaré avoir participé à un appel d'offre au cours des deux dernières années, 69% considèrent inéquitable le processus de

passation des marchés publics dans leur secteur d'activité, et 17% le considèrent même « très inéquitable ». Du fait de la défiance vis-à-vis des services de l'État, seuls 41% des entrepreneurs de la capitale qui ont été victimes de vols, vandalisme, fraude ou escroquerie dans l'année déclarent avoir porté plainte auprès du *fokontany*, de la gendarmerie ou de la police.

La corruption est souvent considérée comme une nécessité, et la résignation de mise parmi les entrepreneurs. Pourtant, des motifs de satisfaction existent. Des mesures récentes de simplification administrative ont notamment porté leurs fruits dans le secteur fiscal et au niveau des douanes. Ainsi, seuls 20% des entrepreneurs importateurs interrogés dans le cadre du projet CAPS considèrent commun d'effectuer des cadeaux ou paiements informels pour s'assurer du dédouanement d'une importation. De même, plus de la moitié des chefs d'entreprise (56%) ayant participé aux enquêtes CAPS estiment que les démarches à effectuer pour payer les impôts et taxes de leur entreprise sont simples.

Il convient d'apprendre de ce constat alarmant comme des réussites pour lutter efficacement contre ces pratiques de corruption néfastes au développement économique et social de Madagascar. Les informations et recommandations de réforme contenues dans ce rapport sont la contribution de TI-IM et du secteur privé à la réalisation de cet objectif.

1 CRÉATION D'ENTREPRISE

Le classement annuel *Doing Business* de la Banque Mondiale présente Madagascar comme l'une des économies du monde où la difficulté à faire des affaires est la plus importante. Parmi les 189 économies évaluées dans le rapport *Doing Business 2015*, Madagascar se classe 163^{ème} et perd 6 places par rapport au classement 2014. Madagascar se distingue néanmoins au niveau de la facilité à créer une entreprise. Malgré une perte de 4 places par rapport au dernier classement, il est toujours, d'après la Banque Mondiale, relativement simple de créer une entreprise à Madagascar (37^{ème} au classement mondial *Doing Business 2015*)¹.

Toujours d'après le rapport *Doing Business 2015*, seuls huit jours et quatre procédures sont requis, en moyenne, pour enregistrer formellement une nouvelle entreprise à responsabilité limitée à Madagascar. Le coût de ces procédures, comprenant les frais officiels ainsi que les éventuels honoraires payés à des services professionnels, représenteraient 14% du revenu par habitant, à comparer à 56%, en moyenne, pour les pays de l'Afrique subsaharienne.

Il faut néanmoins noter que seuls les coûts et procédures formels sont évalués par *Doing Business*. La nécessité de payer des pots-de-vin et d'autres dépenses informelles peut néanmoins ralentir le processus et alourdir considérablement le coût de création d'une entreprise. Ainsi, plus de la moitié (55%) des entrepreneurs malgaches interrogés dans le cadre de l'enquête *Enterprise Survey 2013* de la Banque Mondiale² et ayant débuté leurs activités dans les deux ans précédant l'enquête considèrent que les coûts de création d'entreprise représentent une contrainte au développement du secteur privé³. Une majorité de ces entrepreneurs (57%) considère également que le temps passé à effectuer les procédures obligatoires est un obstacle à la création d'entreprise⁴. Une proportion similaire d'entrepreneurs (56%) considère qu'obtenir une licence d'exploitation est un

problème pour les entreprises nouvellement créées⁵. Enfin, 48% de ces entrepreneurs ont déclaré avoir dû payer un pot-de-vin pour obtenir leur licence d'exploitation⁶.

Cet écart conséquent observé entre procédures officielles et pratique se reflète également dans les données d'enquêtes du projet CAPS. L'enquête « nouvelle entreprises » a interrogé 247 entrepreneurs ayant récemment créé leur activité (après le 1^{er} janvier 2012) dans la capitale malgache. Un module de questions spécifique à cette enquête a interrogé ces chefs d'entreprise sur les démarches administratives qu'ils ont dû effectuer au moment de la création de leur entreprise.

Sans surprise, la quasi-totalité (98%) des entrepreneurs enquêtés déclarent avoir dû obtenir une autorisation pour exercer leur activité. Ces entrepreneurs ont attendu 41 jours en moyenne pour compléter ces procédures obligatoires, bien loin des huit jours théoriquement requis par la procédure officielle. En évaluant ces délais de façon plus détaillée, on constate que la moitié des entrepreneurs (50%) ont obtenu leur autorisation d'exercer en neuf jours ou moins. Pour les autres, la procédure peut être considérablement plus longue (30 jours ou plus pour 25% d'entre eux, [Graphe 1](#)).

Le temps passé par les nouveaux entrepreneurs à effectuer ces démarches administratives fournit un autre éclairage intéressant sur la facilité à créer une entreprise à Antananarivo. En moyenne, 38 heures de travail sont nécessaires pour remplir les démarches administratives obligatoires lors de la création d'une société, comprenant le temps requis pour compléter les documents obligatoires, ainsi que le temps passé aux déplacements et le temps d'attente aux guichets. Ici encore, les expériences des entrepreneurs sont très contrastées. Si ces procédures n'ont nécessité que 7 heures au plus pour la moitié d'entre eux (52%), elles peuvent dépasser 36 heures dans 20% des cas.

De façon plus générale, 52% des entrepreneurs interrogés dans le cadre de l'enquête CAPS « nouveaux entrepreneurs » considèrent que les démarches administratives à effectuer au moment de la création de leur entreprise ont été plutôt complexes (30%) ou très complexes (22%), quand 48% les considèrent plutôt simples (40%), voire très simples (8%).

1. Pour plus d'informations sur la méthodologie *Doing Business*, et pour accéder aux données de l'étude concernant la création d'entreprise, voir : <http://francais.doingbusiness.org/methodology/starting-a-business>

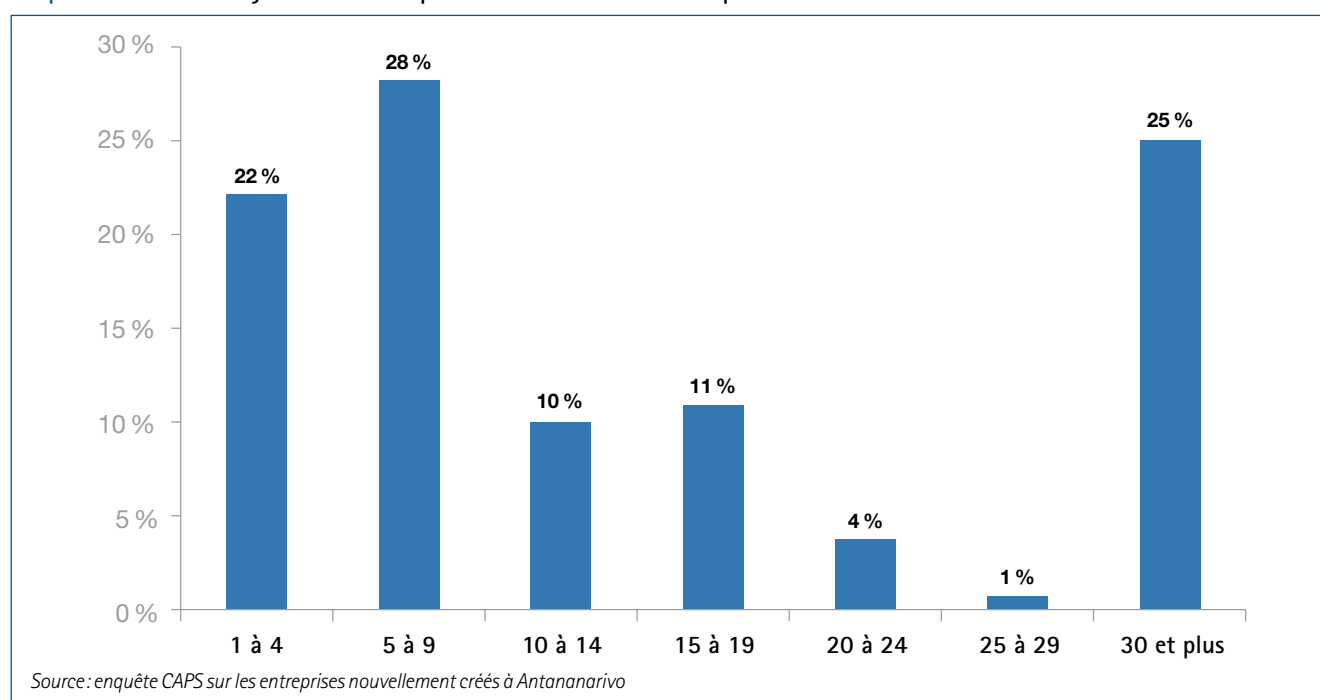
2. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant la corruption et la création d'entreprise, voir : <http://www.enterprisesurveys.org/data/exploreeconomies/2013/madagascar#corruption>

3. Proportion de répondants (20) a considéré les coûts de création d'entreprise comme un obstacle « moyen » (7), « important » (2), ou « très important » (2).

4. Proportion de répondants (21) à considérer le temps passé à remplir les procédures de création d'entreprise comme un obstacle « moyen » (6), « important » (5), ou « très important » (1).

5. Proportion de répondants (18) à considérer le processus d'obtention d'une licence d'exploitation comme un obstacle « moyen » (8), « important » (1), ou « très important » (1).

6. Statistique obtenue à partir de 23 observations, avec un écart-type de 8,1.

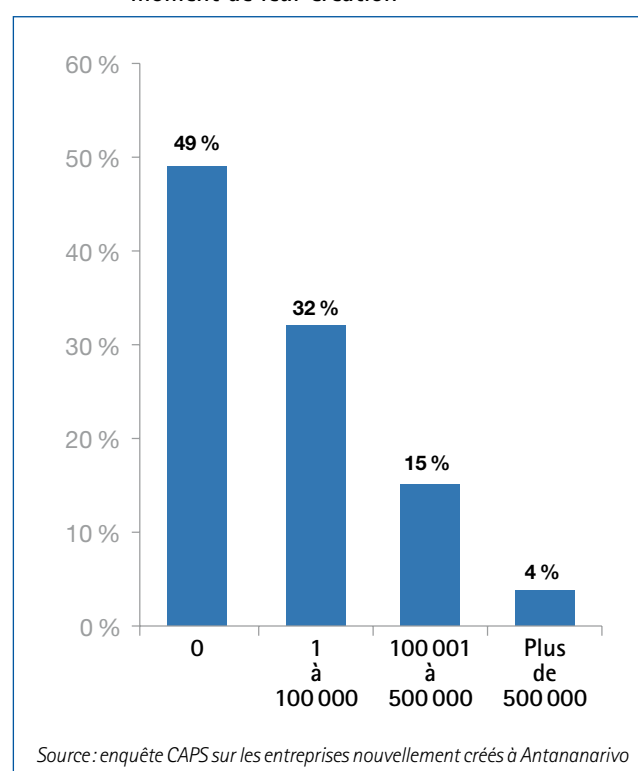
Graphe 1 : Nombre de jours d'attente pour la création d'une entreprise à Antananarivo

Les nouveaux entrepreneurs ont également été interrogés sur la somme dépensée pour remplir ces démarches administratives obligatoires, comprenant le coût officiel des démarches, les coûts de déplacement et autres frais, ainsi que « les cadeaux et autres paiements informels ». Compte tenu du caractère sensible de cette question, il n'est pas surprenant qu'un tiers des répondants (33%) n'ait fourni aucune réponse. Les entrepreneurs qui ont répondu à la question ont déclaré avoir dépensé 800 000 ariary en moyenne pour leurs démarches de création d'entreprise. Les sommes dépensées sont toutefois très inégales. Si la dépense ne dépasse pas 180 000 ariary pour un tiers des nouveaux entrepreneurs (33%), un chiffre comparable à celui établi dans le rapport *Doing Business 2015*, elle excède 420 000 ariary pour le tiers qui dépense le plus (33%).

Seuls 60% des chefs d'entreprise ont répondu à la question suivante leur demandant explicitement le montant que les entreprises similaires à la leur doivent dépenser en pots-de-vin et autres paiements informels au cours de leur processus de création. Ces entrepreneurs ont déclaré qu'il est nécessaire de payer 108 000 ariary, en moyenne, en paiements illégaux. Cependant, près de la moitié des entrepreneurs ayant répondu à cette question (49%) ont affirmé qu'il n'est pas nécessaire de payer le moindre pot-de-vin. Pour un cinquième d'entre eux (19%), ces paiements illégaux sont supérieurs à 100 000 ariary. Ils dépassent 500 000 ariary dans 4% des cas (Graphe 2).

Sans surprise, on observe que les entrepreneurs qui dépensent le plus au moment de la création de leur entreprise sont également ceux qui paient le plus de pots-de-vin⁷. Plus intéressant, on

7. Corrélation de Pearson de 0,86 entre la dépense totale et le montant de pots-de-vin déclaré, avec une *p-value* inférieure à 1%, obtenue à partir de 97 observations.

Graphe 2 : Répartition du montant de pots-de-vin payés par les nouvelles entreprises d'Antananarivo au moment de leur création

note que le fait de payer un pot-de-vin réduit de 19 jours en moyenne le temps d'obtention des documents nécessaires à la création d'une entreprise. Cette observation accréderait l'hypothèse selon laquelle une partie du délai d'obtention des autorisations d'exercer est artificiellement entretenue par certains fonctionnaires dans le but d'extraire des pots-de-vin et autres « cadeaux » aux entrepreneurs.

2 INFRASTRUCTURES (EAU ET ÉLECTRICITÉ)

Le rapport *Doing Business 2015* de la Banque Mondiale est particulièrement alarmant en ce qui concerne la qualité des infrastructures électriques à Madagascar. D'après ce rapport, obtenir un raccordement à l'électricité pour une entreprise malgache nécessite pas moins de 450 jours et des frais représentant plus de 8 500 % du revenu par habitant en moyenne, soit la pire performance mondiale⁸ !

Pour *Doing Business 2015*, cette situation catastrophique pour l'activité et le développement des entreprises à Madagascar s'explique principalement par les problèmes de capacité électrique du pays. Malgré de nouvelles capacités ajoutées ces dernières années, notamment pour les usagers de la capitale, la compagnie nationale *Jiro sy Rano Malagasy* (JIRAMA) doit faire face à un retard conséquent dans les demandes de raccordement des ménages et des entreprises. Les délais ne résultent toutefois pas uniquement du traitement de ces anciens dossiers, mais aussi d'un manque criant de matériel, notamment de transformateurs et de câbles.

Ces délais importants favorisent la corruption. Un raccordement rapide à l'électricité peut être vital à l'existence d'une entreprise et l'opportunité de payer certains employés peu scrupuleux de l'entreprise publique afin d'accélérer le traitement d'un dossier en attente peut dès lors se révéler une option très tentante. D'après l'*Enterprise Survey 2013* de la Banque Mondiale⁹, plus de 13 % des entreprises ayant demandé un raccordement à l'électricité dans les deux ans précédant l'enquête ont été confrontées à une demande de pot-de-vin¹⁰. Le problème est encore plus important en ce qui concerne l'eau, puisque 23 % des entrepreneurs ayant demandé un raccordement à l'eau à la JIRAMA au cours des deux ans précédant l'enquête ont déclaré avoir reçu une demande de pot-de-vin¹¹.

8. Pour plus d'informations sur la méthodologie *Doing Business*, et pour accéder aux données de l'étude concernant les infrastructures, voir : <http://francais.doingbusiness.org/methodology/getting-electricity>

9. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant les infrastructures, voir : <http://www.enterprisesurveys.org/data/exploreeconomies/2013/madagascar#infrastructure>

10. Statistique obtenue à partir de 29 observations, avec un écart-type de 4,1.

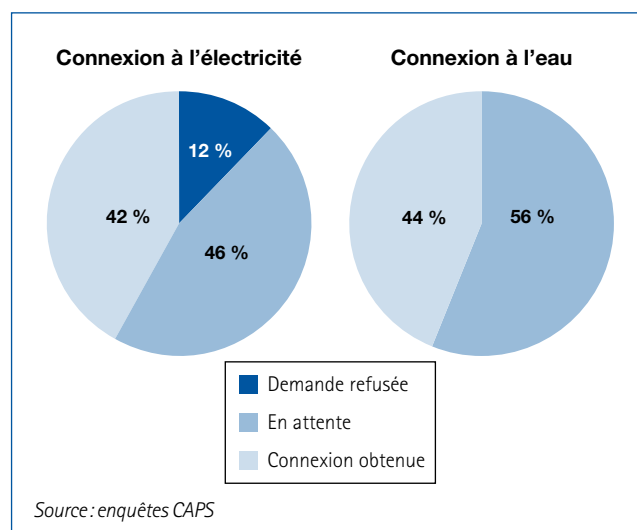
11. Statistique obtenue à partir de 21 observations, avec un écart-type de 10,7.

Les enquêtes CAPS confirment le problème de l'accès et de la qualité de l'approvisionnement public en électricité et en eau pour les entreprises de la capitale malgache. Les entrepreneurs des deux enquêtes (la première portant sur les nouvelles entreprises et la seconde sur les entreprises de 10 salariés ou plus) ont estimé à 25 % la proportion de jours durant lesquels leur entreprise a subi des délestages dans l'année écoulée. Ces délestages durent 2 h 40 en moyenne et coûtent aux entreprises d'Antananarivo 18 % de leur chiffre d'affaires en heures non travaillées, endommagement du matériel et autres frais, d'après les estimations des entrepreneurs ayant participé à ces enquêtes.

Un entrepreneur sur 15 (7 %) interrogé dans le cadre des enquêtes CAPS a demandé le raccordement à l'électricité à la JIRAMA pour son entreprise au cours des deux dernières années. Parmi ces chefs d'entreprise, 46 % sont toujours en attente de leur raccordement au moment des enquêtes, auxquels s'ajoutent 12 % pour lesquels la demande de connexion a été refusée par la JIRAMA (Graphe 3). Les entrepreneurs ayant déjà obtenu leur raccordement à l'électricité ont quant à eux dû patienter 189 jours en moyenne.

Les chefs d'entreprise ayant obtenu leur raccordement à l'électricité ont dépensé 1 500 000 ariary en moyenne au cours

Graphe 3 : Statut des demandes de connexion à l'eau et à l'électricité effectuées par les entrepreneurs d'Antananarivo au cours des deux dernières années



du processus, comprenant le prix officiel ainsi que les « cadeaux et autres paiements informels ». Les montants dépensés sont très variés, avec une dépense médiane de 600 000 ariary et des coûts supérieurs à 2 000 000 ariary dans 10 % des cas (Graphe 4).

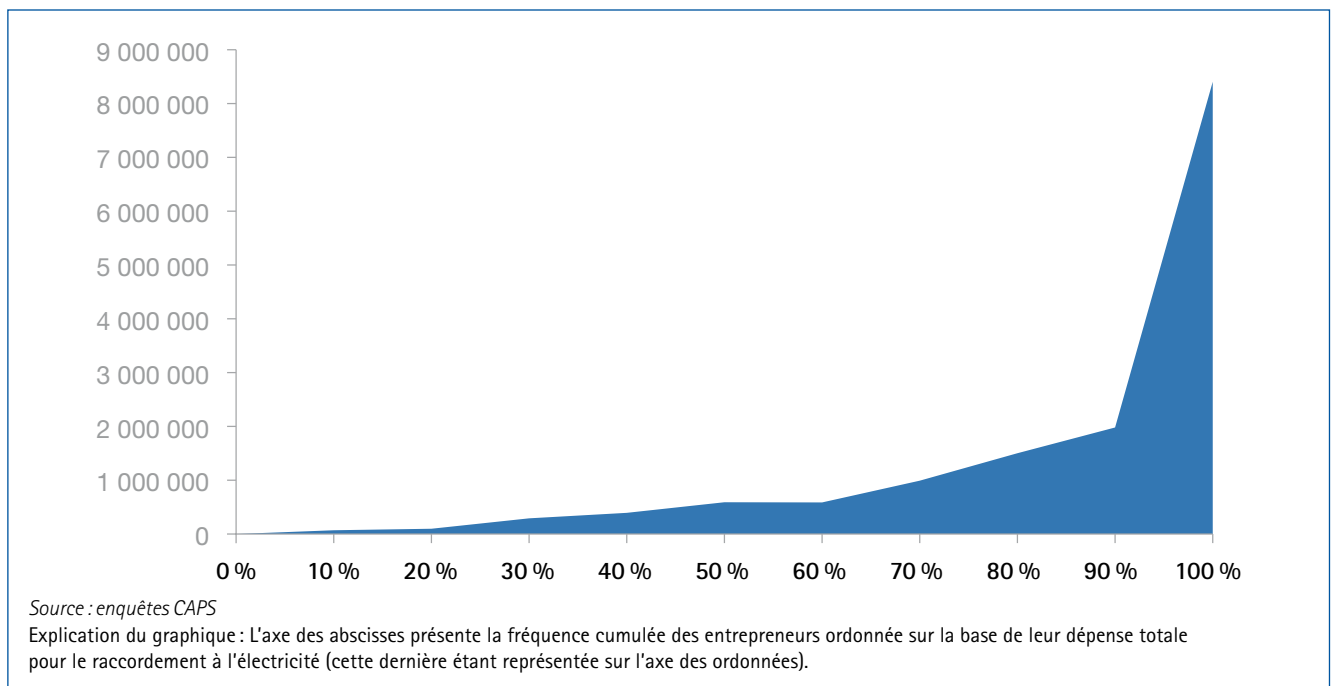
Seuls quatre des 29 entrepreneurs ayant obtenu leur raccordement à l'électricité au cours des deux années précédant les enquêtes ont répondu à la question suivante leur demandant explicitement combien les entreprises « similaires à la leur » doivent dépenser en « cadeaux et autres paiements informels » pour obtenir ce raccordement. Ces entrepreneurs ont évoqué un montant moyen de 205 000 ariary, ce qui correspond à 24% de la somme totale dépensée pour obtenir leur raccordement à l'électricité auprès de la JIRAMA. Une corrélation linéaire négative est observée entre le montant de pots-de-vin et le temps d'attente pour le raccordement à l'électricité¹². Ceci confirme l'hypothèse selon laquelle les pots-de-vin permettent d'« accélérer les choses », même si le faible nombre de données à partir desquelles cette

statistique a été obtenue oblige à émettre des réserves quant aux conclusions à tirer de cette dernière observation.

La situation est comparable au niveau de l'accès à l'eau. Un tiers (33 %) des chefs d'entreprise interrogés dans le cadre des enquêtes CAPS a rencontré des problèmes d'approvisionnement en eau au cours des douze derniers mois. Plus de la moitié (56 %) des entrepreneurs ayant demandé un raccordement à l'eau à la JIRAMA ces deux dernières années (3 % du total des entrepreneurs) sont toujours en attente de leur raccordement au moment des enquêtes. Pour ceux d'entre eux qui ont obtenu leur connexion à l'eau (4 entrepreneurs), la durée d'attente moyenne est de 264 jours. Près de 4 millions d'ariary ont été dépensés par ces entrepreneurs, en moyenne, pour obtenir un raccordement à l'eau pour leur entreprise. En ce qui concerne la corruption plus spécifiquement, seuls deux entrepreneurs ont fourni une réponse à la question portant explicitement sur le montant de pots-de-vin payés au cours du processus d'obtention du raccordement à l'eau. D'après ces entrepreneurs, 70 000 ariary doivent être payés en pots-de-vin et autres « cadeaux » aux agents de la JIRAMA par les entreprises similaires à la leur pour obtenir ce raccordement. Mais encore une fois, le faible nombre d'observations ne nous permet pas de tirer des conclusions générales de cette observation particulière.

12. Corrélation de Pearson de -0,94 entre le montant de pots-de-vin exprimé en pourcentage de la dépense totale et le temps d'attente en nombre de jours, avec une *p-value* inférieure à 10 %, obtenue à partir de 4 observations.

Graphe 4 : Montant total dépensé par les entrepreneurs d'Antananarivo pour obtenir le raccordement à l'électricité (en ariary)



3 TERRAINS ET CONSTRUCTIONS

L'analyse du parcours de l'investisseur est un indicateur du climat des affaires dans un pays. Le rapport *Doing Business* 2015 de la Banque Mondiale apporte un éclairage sur les contraintes rencontrées par les entrepreneurs pour enregistrer un titre de propriété ou obtenir un permis de construire. Il apparaît que Madagascar figure parmi les pays où il est le plus difficile de se voir octroyer un permis de construire. Le pays se positionne à la 177^{ème} place sur 189 économies pour la facilité à obtenir ce type de permis. Un classement en recul si l'on se réfère à l'étude réalisée en 2014, puisque le pays perd deux places. Cette faible performance s'explique en grande partie par une démarche administrative longue : les modalités d'obtention du permis de construire nécessitent pas moins de 13 procédures administratives, et un délai d'attente moyen de 123 jours. Par ailleurs, la démarche reste coûteuse, puisque les frais officiels liés à cette opération représenteraient près de 21 % du revenu par habitant du pays. Des coûts trois fois supérieurs à la moyenne des pays de l'Afrique subsaharienne. Le constat est similaire pour l'enregistrement d'un titre de propriété pour une entreprise. Madagascar se situe à la 153^{ème} place mondiale de ce classement, et perd une place par rapport au classement 2014¹³.

L'enregistrement de la propriété d'un terrain permet à un entrepreneur de sécuriser ses investissements. Or, la réglementation du droit de propriété à Madagascar reconnaît divers documents pouvant attester de la propriété : titre foncier, enregistrement au registre des cadastres, certificat foncier, voire des « petits papiers ». La mauvaise gestion des domaines est souvent à l'origine de conflits à l'origine d'une insécurité foncière.

Les enquêtes CAPS apportent des informations complémentaires sur la relation entre les entrepreneurs de la capitale et le service des domaines. Sur les 189 chefs d'entreprise ayant pris part à la seconde enquête CAPS portant sur les sociétés de 10 salariés ou plus, 38 % affirment être propriétaire de la totalité ou d'une partie des terrains occupés par leur entreprise. On note chez ces entrepreneurs un niveau de confiance élevé quant à la reconnaissance de leur droit en cas de litige : 80 % des répondants affirment ainsi être « très confiants » en cas de dispute sur la

propriété de leur terrain. Seuls 9 % des répondants n'auraient pas confiance en leurs droits de propriété en cas de litige.

Cependant, l'insécurité foncière peut également se matérialiser au cours de la procédure d'obtention d'un titre foncier. La durée et le coût de la procédure peuvent alors être des freins à l'enregistrement des terrains et à l'obtention de titres de propriété. Au cours des deux années précédant l'enquête CAPS, environ un entrepreneur interrogé sur sept (14 %) a effectué ce type de démarche auprès de l'administration publique pour son entreprise. Il apparaît que le délai de traitement des dossiers est important, car près de la moitié (44 %) de ces entrepreneurs sont toujours en attente de leur titre foncier au moment de l'enquête. Ceux qui l'ont obtenu ont dû patienter 147 jours en moyenne entre le jour de dépôt de la demande et l'obtention effective du titre de propriété.

Par conséquent, le secteur foncier est propice à des pratiques de corruption diverses. Il apparaît que certains employés des services des domaines s'érigent en véritables obstacles à la fluidité du parcours des dossiers. L'analyse des données compilées par la branche territoriale d'Antananarivo du Bureau Indépendant Anti-Corruption (BIANCO) identifie le secteur du foncier en première place en termes de nombre de doléances : 426 plaintes en rapport avec le foncier lui ont été transmises entre 2012 et le premier trimestre 2014, dont 85 en lien avec des actes de corruption¹⁴. Les données CAPS confirment ce constat. Pour accélérer les procédures d'obtention de titre foncier, les dirigeants d'entreprises doivent ainsi déboursier 150 000 ariary en moyenne. Le poids de la corruption représenterait ainsi 11 % du coût total de la procédure d'immatriculation foncière. À noter que ces deux dernières statistiques n'ont été obtenues qu'à partir de deux et trois observations, respectivement¹⁵.

Si l'accès à la terre peut s'avérer difficile à Madagascar, les chefs d'entreprises rencontrent également des difficultés dans l'obtention de permis de construire quand ils souhaitent valoriser leurs terrains. Près du quart (24 %) des entrepreneurs interrogés dans le cadre de l'enquête CAPS sur les entreprises de 10 salariés

13. Pour plus d'informations sur la méthodologie *Doing Business*, et pour accéder aux données de l'étude concernant l'enregistrement de terrains et l'obtention de permis de construire, voir : <http://français.doingbusiness.org/data/exploreconomies/madagascar#dealing-with-construction-permits> et <http://français.doingbusiness.org/data/exploreconomies/madagascar#registering-property>

14. Données de la branche territoriale d'Antananarivo du Bureau Indépendant Anti-Corruption (BIANCO). Les données nationales sont disponibles sur le site : www.bianco-mg.org

15. Pour plus de détails, voir le tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS à la fin du rapport.

ou plus ont demandé un permis de construire pour leur entreprise au cours des deux dernières années. Or, au moment de l'enquête, près du tiers des entrepreneurs enquêtés (31 %) étaient toujours en attente de leur permis. Obtenir un permis de construire prend en moyenne six mois (186 jours), d'après l'expérience des entrepreneurs interrogés qui ont l'obtenu.

De par ces délais conséquents, l'accès au permis de construire figure également parmi les foyers de corruption à Madagascar. Selon le rapport *Enterprise Survey 2013* de la Banque Mondiale pour Madagascar¹⁶, près de 11 % des entrepreneurs interrogés ont

16. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant la corruption dans l'obtention des permis de construire, voir : <http://www.enterprisesurveys.org/data/exploreeconomies/2013/madagascar#corruption>

dû payer un pot-de-vin pour obtenir leur permis de construire¹⁷. L'enquête CAPS va plus loin et estime le montant des pots-de-vin et autres « cadeaux » à payer aux agents de l'État pour cette prestation administrative à 22 % du coût total du permis de construire. Selon les résultats de l'enquête, les entrepreneurs ayant déclaré qu'il est nécessaire de payer un pot-de-vin ont attendu 115 jours en moyenne pour obtenir leur permis contre 334 jours pour ceux ayant déclaré un montant nul. Ce constat confirme l'hypothèse selon laquelle les délais administratifs sont en partie créés ou gérés par des fonctionnaires peu scrupuleux de manière à soutirer de l'argent aux entrepreneurs désireux d'accélérer la procédure.

17. Statistique obtenue à partir de 37 observations, avec un écart-type de 3,8.

4 VOLS ET PLAINTES

D'après l'*Enterprise Survey 2013* de la Banque Mondiale, la criminalité, les vols et les troubles sociaux figurent à la troisième position des principaux obstacles aux affaires pour les entrepreneurs malgaches¹⁸. Près d'une entreprise malgache sur deux (54%) alloue dans son budget des dépenses spécifiques liées à la sécurité, y consacrant en moyenne 1,6% de son chiffre d'affaires annuel.

Les résultats des enquêtes CAPS confirment que le problème de la sécurité à Antananarivo est alarmant : 50% des entreprises interrogées ont ainsi été victimes de vols, vandalisme, fraude ou escroquerie au cours des douze derniers mois. Les enquêtes CAPS estiment les pertes pécuniaires engendrées par la criminalité à 16% du chiffre d'affaires annuel des entreprises de la capitale.

Par ailleurs, on constate que malgré les pertes financières importantes, 59% des entrepreneurs victimes n'ont pas déposé plainte. Ceci traduit la faible confiance des acteurs économiques dans les institutions étatiques, en particulier envers celles en charge de la sécurité publique. Les chefs d'entreprises d'Antananarivo qui ont choisi de déposer plainte se tournent en premier lieu vers la police (27%), puis vers la gendarmerie (13%), et enfin vers les *fokontany* (9%)¹⁹.

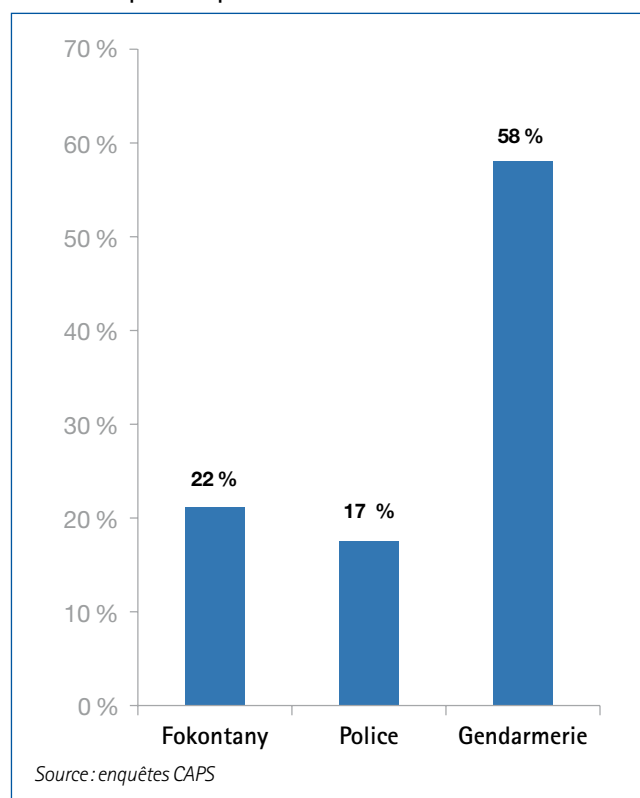
La corruption est l'un des motifs expliquant la défiance des entreprises de la capitale à l'égard de la gendarmerie, de la police et des *fokontany*. Toujours d'après les résultats des enquêtes CAPS, 29% des entrepreneurs victimes de vols, vandalisme, fraude ou escroquerie dans l'année ont dû payer un pot-de-vin au moment du dépôt de leur dernière plainte. Cette corruption affecte toutes les institutions publiques identifiées par l'étude.

18. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant les principaux obstacles aux affaires pour les entrepreneurs, voir : <http://www.enterprisesurveys.org/data/exploreconomies/2013/madagascar>

19. À noter que certains entrepreneurs déposent plainte auprès du *fokontany* et de la police, ou du *fokontany* et de la gendarmerie.

La gendarmerie présente à cet égard les résultats les plus inquiétants. En effet, 58% des entrepreneurs victimes ayant déposé plainte à la gendarmerie se sont vus demandé un cadeau ou un paiement illégal au moment du dépôt de leur plainte. Viennent ensuite le *fokontany* et la police, où respectivement 22% et 17% des entreprises victimes ont eu à payer des dessous de tables (Graphe 5). La gendarmerie ne se « distingue » pas uniquement au niveau de la fréquence des pots-de-vin, mais également dans les montants de ces paiements illégaux. Il faut ainsi déboursier 155 600 ariary, en moyenne, auprès des policiers et 187 500 ariary chez les agents des *fokontany*, contre

Grappe 5 : Proportion des entreprises d'Antananarivo victimes de corruption au moment du dépôt de plainte, par institution

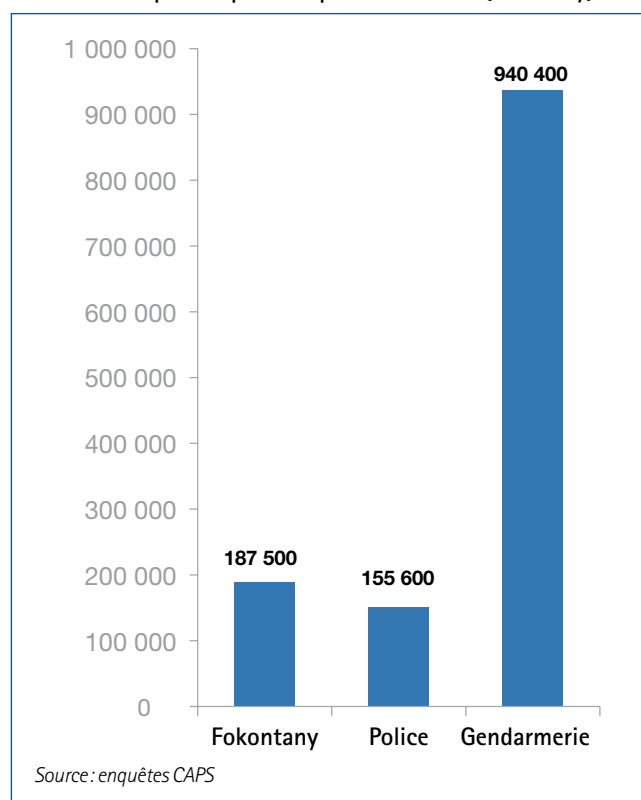


un montant cinq fois supérieur (944 000 ariary) auprès des gendarmes (Graphe 6).

Un autre constat qui mérite d'être souligné est la corrélation positive entre le montant dépensé en pots-de-vin par les entrepreneurs de la capitale lors du dépôt de plainte et les pertes financières supportées par l'entreprise²⁰. En d'autres termes, ce sont les entrepreneurs ayant perdu les montants les plus importants à la suite de vols, vandalisme, fraude ou escroquerie qui sont, en moyenne, enclins à payer le plus de pots-de-vin aux agents publics au moment du dépôt de plainte. Il est possible que, pour ces entrepreneurs, la corruption soit une assurance de voir leur dossier traité en priorité et ainsi pallier à la lenteur de l'administration. Cette dernière observation est également à mettre en relation avec les résultats précédents présentant la gendarmerie comme l'institution où le problème de la corruption au moment du dépôt de plainte est le plus aiguë. Il apparaît en effet que les entreprises qui portent plainte à la gendarmerie sont souvent situées en périphérie de la capitale, où se trouve un grand nombre d'entreprises de taille importante.

20. Corrélation de Pearson de 0,69 entre le montant de pots-de-vin payés au moment du dépôt de plainte et les pertes financières de l'entreprise dues aux vols, vandalisme, fraude ou escroquerie au cours des douze derniers mois, avec une *p-value* inférieure à 5%, obtenue à partir de 12 observations.

Graphe 6 : Montant moyen d'un pot-de-vin au moment du dépôt de plainte, par institution (en ariary)



5 JUSTICE

D'après les résultats de l'*Entreprise Survey* 2013 de la Banque Mondiale, 13 % des entreprises malgaches identifient le système judiciaire comme une contrainte majeure à leur activité²¹. Pour *Doing Business*, Madagascar se situe à la 160^{ème} place sur 189 économies en ce qui concerne la simplicité dans l'exécution des contrats pour les entreprises, et perd une place vis-à-vis du classement 2014²². Les délais excessifs pour le règlement des différends devant les tribunaux est notamment en cause pour expliquer cette performance médiocre. Pour ce qui est de l'indépendance de la justice de l'influence du gouvernement, d'individus ou d'entreprises, Madagascar se situe à la 134^{ème} place sur 144 pays d'après le classement du *Global Competitiveness Report* 2014-2015 du *World Economic Forum*²³.

D'après les statistiques compilées par le Centre d'Assistance Juridique et d'Action Citoyenne (CAJAC) de Transparency International – Initiative Madagascar²⁴ entre août 2010 et août 2014, le secteur de la justice arrive en seconde position dans les dénonciations de cas de corruption avec 16% du total des contacts. Seule la gendarmerie affiche un nombre de plaintes plus important (22 % du total des contacts du CAJAC). La Branche territoriale Antananarivo du Bureau Indépendant Anti-Corruption (BIANCO) fait lui état de 247 doléances concernant le domaine de la justice pour les années 2012-2013 ainsi que le premier trimestre 2014, soit le second secteur en termes de nombre de doléances, après le secteur foncier. Sur ces 247 doléances, 53 ont été classées par le BIANCO comme relevant effectivement de cas de corruption. Parmi les infractions constatées, on trouve des cas de concussion, de conflits d'intérêt, de corruption active et passive autour de cas de procédures sans suite, de retard de délivrance de jugement ou de libération douteuse.

21. Pour plus d'informations sur la méthodologie de l'enquête *Entreprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant les principaux obstacles aux affaires pour les entrepreneurs, voir : <http://www.enterprisesurveys.org/data/exploreeconomies/2013/madagascar>

22. Pour plus d'information sur la méthodologie utilisée par la Banque Mondiale pour son étude *Doing Business*, voir : <http://français.doingbusiness.org/methodology/enforcing-contracts>

23. World Economic Forum, Executive Opinion Survey. Pour plus d'informations, voir : <http://www.weforum.org/reports/global-competitiveness-report-2014-2015>

24. Le Centre d'Assistance Juridique et d'Action Citoyenne (CAJAC) de Transparency International – Initiative Madagascar fournit une assistance gratuite aux victimes de corruption qui souhaitent constituer un dossier de plainte.

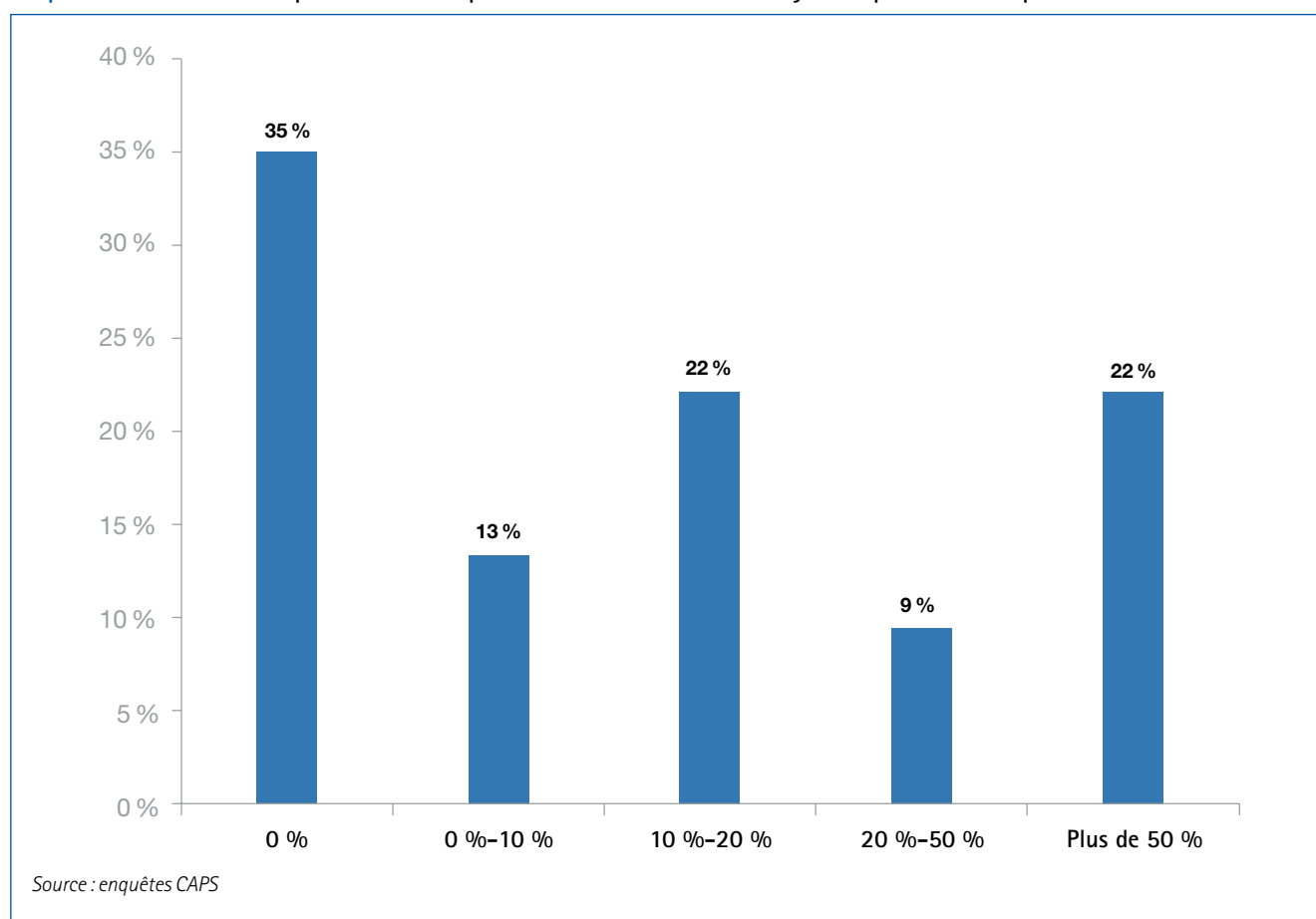
Indéniablement, le système judiciaire à Madagascar est profondément touché par le fléau de la corruption. Les données collectées dans le cadre du projet CAPS apportent une nouvelle perspective à ce constat renouvelé régulièrement par les professionnels et experts du secteur²⁵.

Les deux enquêtes CAPS ont dans un premier temps questionné les entrepreneurs d'Antananarivo sur leur contact avec le système judiciaire. Les résultats suggèrent que 14 % des entreprises de la capitale ont eu recours à la justice au cours des deux années précédant les enquêtes. L'équipe de recherche de TI-IM a également souhaité obtenir une estimation du coût moyen du recours à la justice pour une entreprise de la capitale. Plus d'un tiers (36 %) des entrepreneurs ayant fait appel à la justice au cours des deux dernières années n'ont pas su ou n'ont pas souhaité fournir aux enquêteurs une estimation de la somme totale qu'ils ont dépensée. L'ampleur de la réticence des entrepreneurs à s'exprimer sur leur expérience avec la justice n'est guère surprenante compte tenu des montants financiers importants qui sont généralement en jeu pour les entreprises. Ceux qui ont souhaité répondre ont ainsi affirmé avoir dépensé un montant de 12 200 000 ariary, en moyenne, en frais de justice, coûts de déplacement et autres dépenses, ainsi qu'en « cadeaux et autres paiements informels ».

Près de la moitié des entrepreneurs (49 %) n'ont pas répondu à la question suivante leur demandant explicitement combien les entreprises similaires à la leur doivent dépenser, en moyenne, en « cadeaux et autres paiements informels » pour un recours à la justice. Les entrepreneurs ayant fourni une réponse à cette question ont défini un montant de pots-de-vin correspondant à 24 % du coût total de leur action en justice (Graphe 7).

Dans la mesure où la réticence à répondre à ces questions est très forte pour les entrepreneurs, on peut légitimement penser que cette estimation de 24 % du coût total d'une action en justice cache une réalité plus inquiétante encore. Compte tenu des montants financiers importants en jeu, la somme des pots-de-vin échangés dans le secteur de la justice

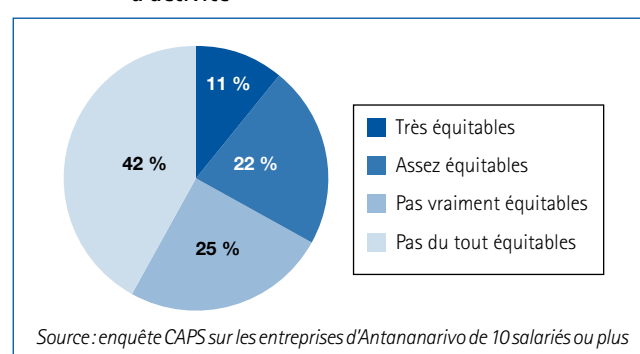
25. Voir notamment l'article de L'Express Madagascar « Justice – La corruption au banc des accusés » (<http://www.lexpressmada.com/blog/actualites/justice-la-corruption-au-banc-des-accuses-16603>) [Accès le 5 mars 2015].

Graphe 7 : Part de la corruption dans la dépense totale d'un recours à la justice pour les entrepreneurs d'Antananarivo

apparaît considérable, même dans le cas où ce chiffre de 24 % est représentatif de l'expérience réelle des entrepreneurs de la capitale. Si l'on examine plus précisément les réponses définies par les entrepreneurs, on constate que plus d'un tiers (35 % des répondants) estiment qu'il n'est pas nécessaire, pour les entreprises similaires à la leur, de payer des pots-de-vin pour une action en justice. À l'inverse, pour 22 % de ces entrepreneurs, plus de moitié des dépenses de justice sont constituées de « cadeaux et autres paiements informels » !

Les entrepreneurs considèrent dans une large majorité (67 %) que les décisions de justice impliquant des entreprises dans leur secteur d'activité sont inéquitables. Ils sont même 42 % à considérer ces décisions « pas du tout équitables ». Seuls 11 % déclarent que les décisions de justice dans leur secteur d'activité sont « très équitables »²⁶ (Graphe 8).

26. À noter que cette question n'a été posée que dans le cadre de la seconde enquête portant sur les entreprises de 10 salariés ou plus et créées avant le 1^{er} janvier 2012.

Graphe 8 : Évaluation des entrepreneurs d'Antananarivo de l'équité des décisions de justice dans leur secteur d'activité

Il apparaît donc que la perception de la justice des entrepreneurs d'Antananarivo est très négative, et la corruption qui gangrène le secteur n'est pas étrangère à cette situation. Il est ainsi intéressant de noter que 64 % des entrepreneurs qui pensent que les décisions de justice sont inéquitables déclarent un montant de pot-de-vin positif, contre 25 % pour les entrepreneurs qui pensent que ces décisions sont équitables.

6 COMMUNE ET FOKONTANY

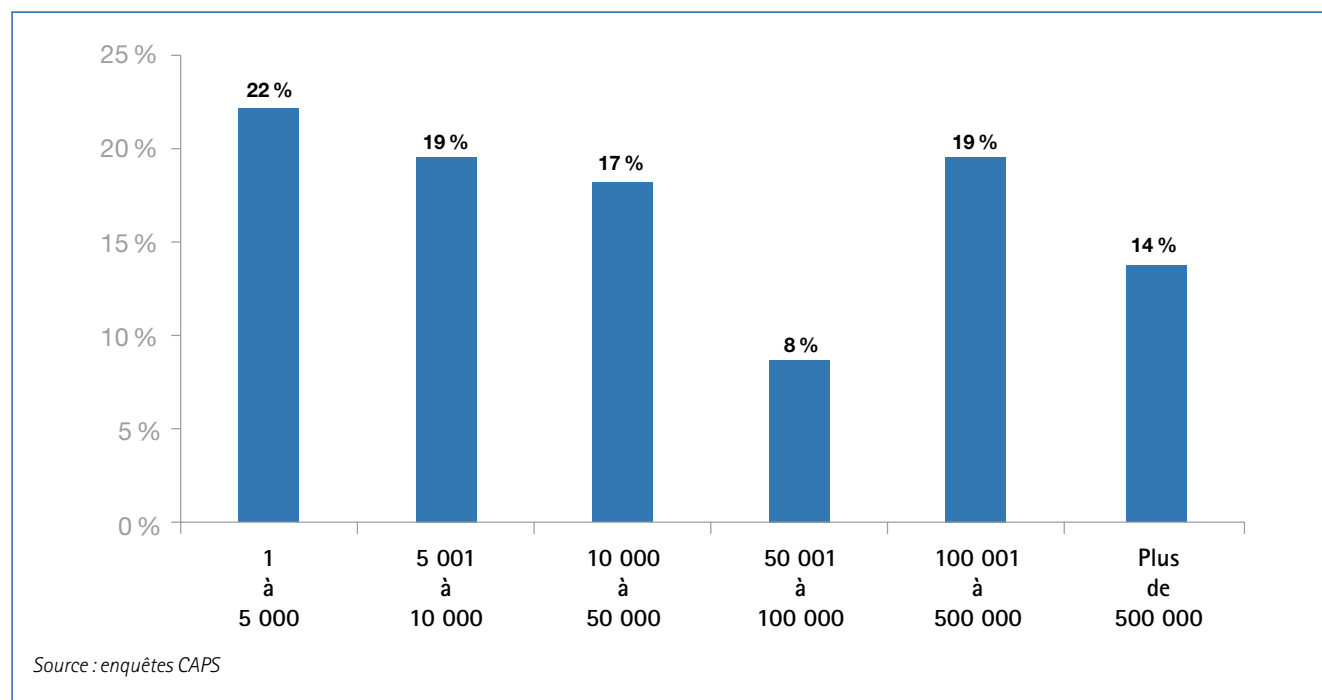
L'administration locale joue un rôle crucial tant pour les citoyens que pour les entreprises. Elle fournit notamment un grand nombre de services publics de proximité, et à ce titre, entre fréquemment en contact avec ses administrés. À Madagascar, la commune et le *fokontany* fournissent ainsi aux entreprises des documents administratifs obligatoires tels que le certificat d'existence, collectent certaines taxes et impôts comme la taxe sur les enseignes extérieures et la taxe de stationnement et gèrent des services publics de première importance pour les entreprises, que ce soit au niveau de la voirie, de la gestion des déchets ou des autorisations d'exercer, pour ne citer ici que quelques exemples.

Les enquêtes CAPS confirment que, relativement aux autres services de l'État malgache, les communes et les *fokontany* sont en contact étroit avec les entreprises de l'agglomération d'Antananarivo. Ainsi, plus des deux tiers des entreprises enquêtées (68%) ont eu au moins un contact avec des agents de la commune et/ou du *fokontany* au cours des douze mois précédant les enquêtes.

De nombreux services et des contacts fréquents engendrent toutefois de multiples opportunités de corruption. Ainsi, 18% des entrepreneurs ayant eu au moins un contact avec des agents de l'administration locale dans l'année écoulée ont reçu de leur part une ou des demandes de «cadeau ou paiement informel». Pour 40% de ces entrepreneurs, une seule demande de paiement illicite leur a été adressée. Pour 42% d'entre eux, ce sont entre deux et cinq sollicitations par an de la part d'agents de l'administration locale. Enfin, 17% des entrepreneurs ayant fait face à ce type de requêtes rapportent avoir reçu plus de 10 demandes dans l'année écoulée.

Les montants de pots-de-vin payés annuellement par les entreprises aux agents de l'administration locale varient en fonction d'un certain nombre de paramètres, notamment de la raison du contact. D'après les résultats des enquêtes CAPS, 41% des entrepreneurs ayant dû verser un ou des pots-de-vin dans le cadre de leurs interactions avec les agents de leur commune et/ou *fokontany* ont payé 10 000 ariary ou moins. À l'opposé, pour un tiers d'entre eux (33%), ce montant dépasse 100 000 ariary. Il excède même 500 000 ariary dans 14% des cas (Graphe 9).

Grappe 9 : Répartition du montant de pots-de-vin payés annuellement par les entreprises d'Antananarivo aux agents de l'administration locale (en ariary)



D'après les données CAPS, ni la taille de l'entreprise, ni son ancienneté ne sont liées à la probabilité d'entrer en contact avec des agents de l'administration locale. Ces caractéristiques ne sont pas non plus corrélées avec la probabilité de faire face à une demande de pot-de-vin. En d'autres termes, les petites entreprises d'Antananarivo ne sont en moyenne pas plus en contact avec des agents de la commune ou du *fokontany* que les entreprises de taille plus importante, et n'ont pas plus de risque de se voir demander un « cadeau ou paiement informel »

de la part de ces agents. Logiquement, le montant total dépensé en pots-de-vin est lui positivement et significativement corrélé avec la taille de l'entreprise²⁷.

27. Corrélation de Pearson de 0,41 entre le montant total de pots-de-vin payés annuellement aux agents de l'administration locale et le nombre de salariés de l'entreprise, regroupé en trois catégories (moins de 20 salariés, de 20 à 99 salariés, 100 salariés et plus), avec une *p-value* inférieure à 5%, obtenue à partir de 37 observations.

7 FISCALITÉ

Les démarches administratives que les sociétés implantées à Madagascar doivent effectuer pour payer leurs taxes et impôts à l'État malgache ont connues une simplification ces dernières années. Le pays gagne ainsi cinq places dans le dernier classement *Doing Business* de la Banque Mondiale pour ce qui est de la charge administrative du paiement des impôts et taxes, se situant à la 60^{ème} place sur 189 économies dans le classement 2015²⁸.

Une majorité (56 %) des entrepreneurs interrogés par les enquêtes CAPS considèrent que les démarches administratives à effectuer pour payer les impôts et taxes de leur entreprise sont « simples ». La possibilité offerte aux entrepreneurs d'effectuer certaines démarches sur Internet explique en partie cette relative simplicité. De fait, les entrepreneurs ne passent que 13 heures par an, en moyenne, pour effectuer toutes les démarches administratives nécessaires au paiement des impôts et taxes dues par leur société.

Ce constat positif cache néanmoins un phénomène alarmant pour les entreprises du pays : la recrudescence des « harcèlements fiscaux ». Les entreprises sont nombreuses à se plaindre de faire l'objet de manière récurrente de redressements fiscaux aux montants excessifs et sans fondements sérieux. Ces redressements fiscaux litigieux sont souvent l'occasion pour des agents fiscaux corrompus de chercher un « arrangement » avec les entreprises permettant de faire baisser le montant du redressement, obtenant au passage une partie de la somme « économisée » par l'entreprise.

Ainsi, d'après les résultats de l'enquête *Enterprise Survey 2013* de la Banque Mondiale²⁹, ce sont près d'un tiers (32 %) des entrepreneurs malgaches qui ont fait l'objet d'une demande de « cadeau ou de paiement informel » par un agent de l'administration fiscale au cours des douze mois précédant l'enquête³⁰. Ce taux est prêt du double de la moyenne des pays de l'Afrique subsaharienne (18 %).

28. Pour plus d'information sur la méthodologie utilisée par la Banque Mondiale pour son étude *Doing Business*, voir <http://français.doingbusiness.org/methodology/paying-taxes>

29. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant la corruption dans l'administration fiscale, voir : <http://www.enterprisesurveys.org/data/exploreeconomies/2013/madagascar#corruption>

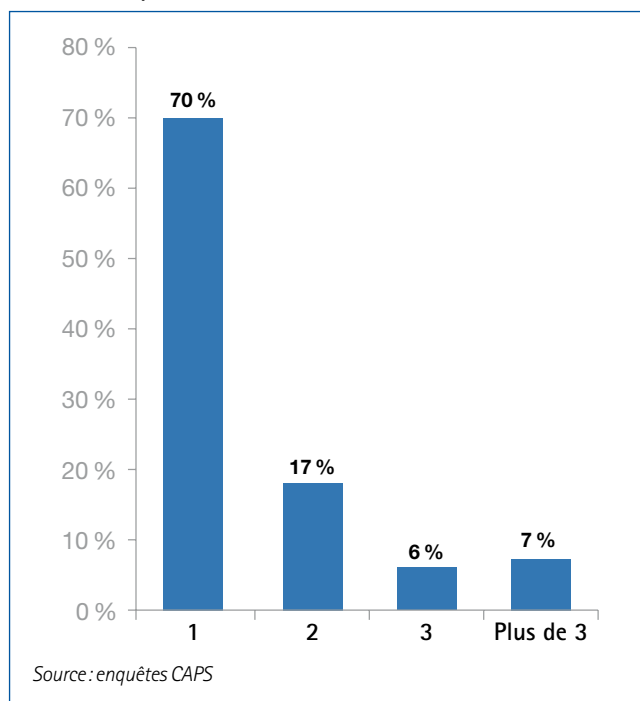
30. Statistique obtenue à partir de 210 observations, avec un écart-type de 9,3.

Près de la moitié des entreprises (49 %) ayant participé aux enquêtes CAPS ont reçu au moins une visite d'agents fiscaux au cours des douze mois précédant l'étude. Une seule visite pour plus de deux tiers de ces entreprises (70 %), et plus de trois visites pour 7 % d'entre elles (Graph 10).

Parmi les chefs d'entreprise ayant reçu au moins une visite d'agents fiscaux au cours des douze mois précédant les enquêtes CAPS, 12 % déclarent qu'un « cadeau ou paiement informel » leur a été demandé par un agent de l'administration fiscale. Le plus souvent (65 %), une seule demande est effectuée par les agents fiscaux. Dans 13 % des cas, cependant, les entreprises reçoivent plus de trois demandes de pots-de-vin au cours d'une seule année.

Dans la mesure où les agents fiscaux peuvent infliger des redressements fiscaux conséquents aux entreprises, leur capacité à obtenir des pots-de-vin peut être très importante. D'après les résultats des enquêtes CAPS, le montant total moyen

Graph 10 : Répartition du nombre de visites annuelles d'agents de l'administration fiscale aux entreprises d'Antananarivo



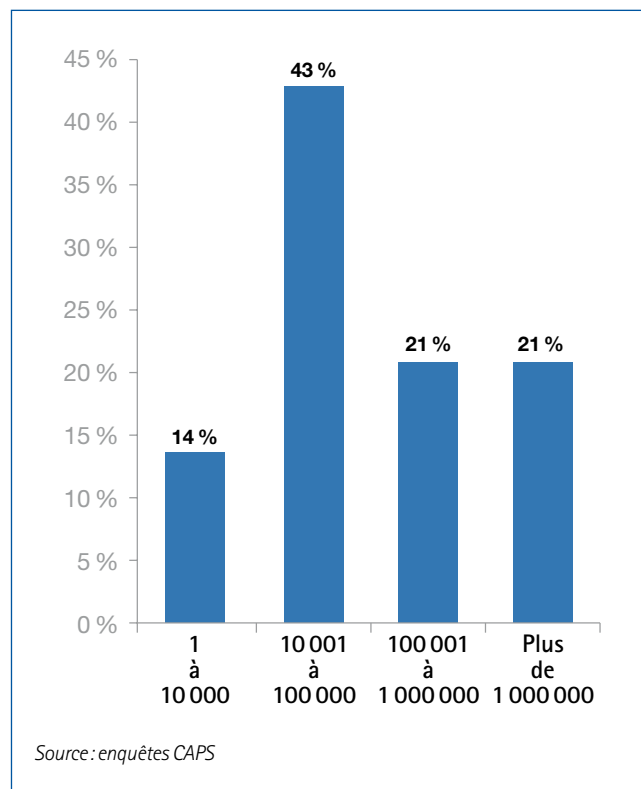
payé annuellement par une entreprise d'Antananarivo ayant fait l'objet d'une demande de pot-de-vin de la part d'agents fiscaux est de 4 100 000 ariary. En examinant ces paiements en détail, on observe que le montant de pots-de-vin versés aux agents fiscaux atteint des sommes considérables pour un petit nombre d'entreprises, ce qui explique ce montant moyen obtenu à partir de l'échantillon des enquêtes CAPS. Le montant total payé est équivalent ou inférieur à 100 000 ariary pour 57 % des entreprises. Pour 21 % d'entre elles, le montant dépasse, parfois largement, 1 000 000 ariary (Graph 11).

Une analyse détaillée des données d'enquête permet d'affirmer que les entreprises les plus grandes sont plus contrôlées fiscalement, en moyenne³¹. Il existe également une relation positive entre le nombre d'années d'existence des entreprises de l'échantillon CAPS et la probabilité de recevoir la visite d'agents fiscaux³².

Enfin, les entreprises les plus grandes sont également celles qui sont les plus victimes de demandes de pots-de-vin de la part d'agents fiscaux. Ainsi, 8 % des entreprises de moins de 20 salariés qui ont fait l'objet d'au moins une visite d'agents fiscaux dans

l'année écoulée ont reçu une demande de pot-de-vin, contre 17 % pour les entreprises de 20 à 99 salariés et 22 % pour les entreprises de 100 salariés ou plus.

Graph 11 : Répartition du montant de pots-de-vin payés annuellement par les entreprises d'Antananarivo aux agents de l'administration fiscale (en ariary)



31. Corrélation de Pearson de 0,24 entre le fait d'avoir reçu au moins une visite d'agents fiscaux dans les derniers douze mois et le nombre de salariés de l'entreprise, regroupé en trois catégories (moins de 20 salariés, de 20 à 99 salariés, 100 salariés et plus), avec une *p-value* inférieure à 1 %, obtenue à partir de 424 observations.

32. Corrélation de Pearson de 0,20 entre le fait d'avoir reçu au moins une visite d'agents fiscaux dans les derniers douze mois et le nombre d'années d'existence de l'entreprise, avec une *p-value* inférieure à 1 %, obtenue à partir de 423 observations.

8 INSPECTIONS

Le contrôle du respect des lois, normes et procédures par les entreprises est assurée par l'autorité publique en partie au travers d'inspections. Les entreprises d'Antananarivo doivent ainsi régulièrement se plier à des inspections du travail, du commerce ainsi qu'à d'autres types d'inspections spécifiques à leur secteur d'activité (inspections du Ministère de l'Environnement, de l'Écologie, de la Mer et des Forêts, des douanes, du Ministère de l'Eau, de l'Hygiène et de l'Assainissement...).

Un tiers (33 %) des entreprises interrogées dans le cadre des enquêtes CAPS a reçu au moins une visite d'inspecteurs de l'administration au cours des douze mois précédant ces enquêtes. Dans 59 % des cas, les entreprises ont été inspectées une seule fois, et pour 86 % d'entre elles moins de quatre fois sur les douze derniers mois.

Les inspections sont parfois l'occasion pour certains fonctionnaires malhonnêtes de demander des « cadeaux » ou autres paiements illégaux aux entreprises soumises à leur contrôle. Évidemment, certaines entreprises bénéficient de cet état de fait en payant de bon gré des pots-de-vin aux inspecteurs de l'administration afin d'éviter de payer des amendes plus importantes ou de se conformer aux règles qui devraient leur être appliquées. Cette collusion entre entreprises et agents de contrôle a des conséquences néfastes pour le public. Des produits avariés, dangereux pour la santé peuvent ainsi faire l'objet de ventes, des projets autorisés malgré les risques environnementaux, des établissements autorisés à exercer leur activité malgré leur non-respect du code du travail.

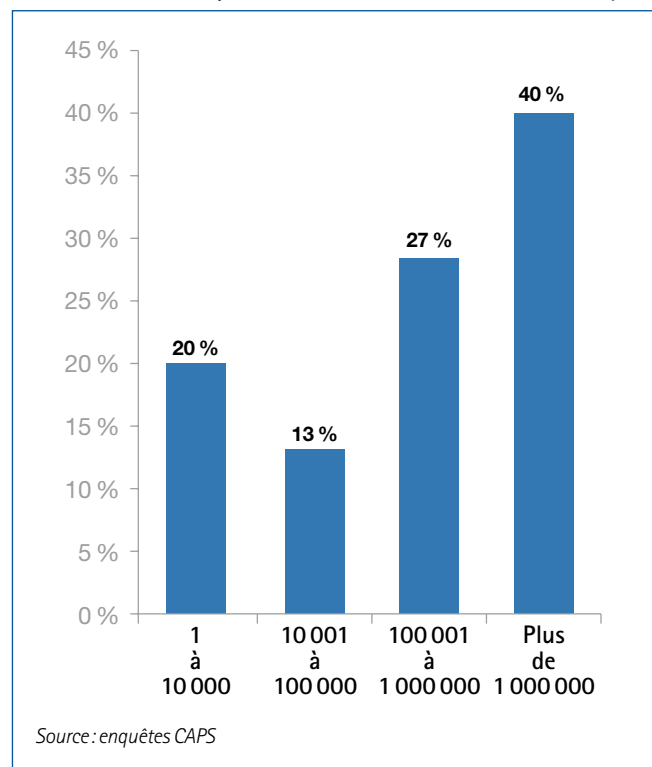
Un entrepreneur sur six (16 %) qui a été inspecté au moins une fois au cours des douze mois précédant les enquêtes CAPS a déclaré qu'un « cadeau ou paiement informel » lui a été demandé par un inspecteur de l'administration au cours d'une visite dans les locaux de son entreprise. En majorité (71 %), ces entrepreneurs ont fait face à une seule demande de pot-de-vin. Pour les autres (29 %), le nombre de demandes durant l'année écoulée dépasse la dizaine.

Pour ce qui est du montant total de pots-de-vin versés aux inspecteurs de l'administration, il apparaît clairement que les expériences des entreprises sont très différentes. Si la somme est égale ou inférieure à 100 000 ariary pour un tiers des entrepreneurs ayant fait face à au moins une demande de pot-de-vin (33 %), et même égale ou inférieure à 10 000 ariary pour 20 % d'entre eux, elle dépasse 1 000 000 ariary dans 40 % des cas (Graph 12). Cette situation s'explique en partie par la diversité des agences d'inspections. Certains inspecteurs spécialisés, notamment aux

douanes ou au service des mines, sont en effet en mesure d'exiger de plus gros montants des entreprises qu'ils contrôlent.

Il est intéressant de noter que les entreprises les plus grandes³³ et les plus anciennes³⁴ sont plus inspectées que les autres, en moyenne. Si l'on se réfère uniquement aux entreprises ayant fait l'objet d'au moins une inspection au cours des douze mois précédant les enquêtes CAPS, il n'existe toutefois pas de relation linéaire statistiquement significative entre la taille de l'entreprise ou son âge et la probabilité de faire face à une demande de pot-de-vin de la part d'un inspecteur de l'administration.

Graph 12 : Répartition du montant de pots-de-vin payés annuellement par les entreprises d'Antananarivo aux inspecteurs de l'administration (en ariary)



33. Corrélation de Pearson de 0,22 entre le fait d'avoir reçu au moins une visite d'inspecteurs de l'administration dans les derniers douze mois et le nombre de salariés de l'entreprise, regroupé en trois catégories (moins de 20 salariés, de 20 à 99 salariés, 100 salariés et plus), avec une *p-value* inférieure à 1 %, obtenue à partir de 431 observations.

34. Corrélation de Pearson de 0,22 entre le fait d'avoir reçu au moins une visite d'inspecteurs de l'administration dans les derniers douze mois et le nombre d'années d'existence de l'entreprise, avec une *p-value* inférieure à 1 %, obtenue à partir de 430 observations.

9 REMBOURSEMENT DE LA TVA

La taxe sur la valeur ajoutée (TVA) est un impôt qui s'applique aux achats réalisés par l'acheteur final d'un produit ou d'un service. En principe, cet impôt est neutre pour les entreprises : elles collectent et reversent à l'État la TVA lorsqu'elles facturent un bien ou un service et peuvent se faire rembourser ou déduire du montant de la TVA collectée celle incluse dans les achats réalisés dans le cadre de leurs activités professionnelles.

À Madagascar, le taux général de la TVA est de 20%, sauf pour les opérateurs d'exportation pour lesquels le taux est de 0%. La TVA est obligatoire pour les sociétés déclarant un chiffre d'affaires annuel hors taxes supérieur à 200 000 000 ariary. Les entreprises déclarant un chiffre d'affaires inférieur et possédant une comptabilité certifiée par commissaire aux comptes peuvent aussi demander à être assujetties à la TVA³⁵.

Suite à des entretiens avec des associations d'entrepreneurs, l'équipe de recherche de TI-IM a décidé d'inclure dans la seconde enquête CAPS portant sur les entreprises d'au moins 10 salariés un module de questions portant sur les problèmes de corruption affectant le processus de remboursement de la TVA pour les entreprises d'Antananarivo.

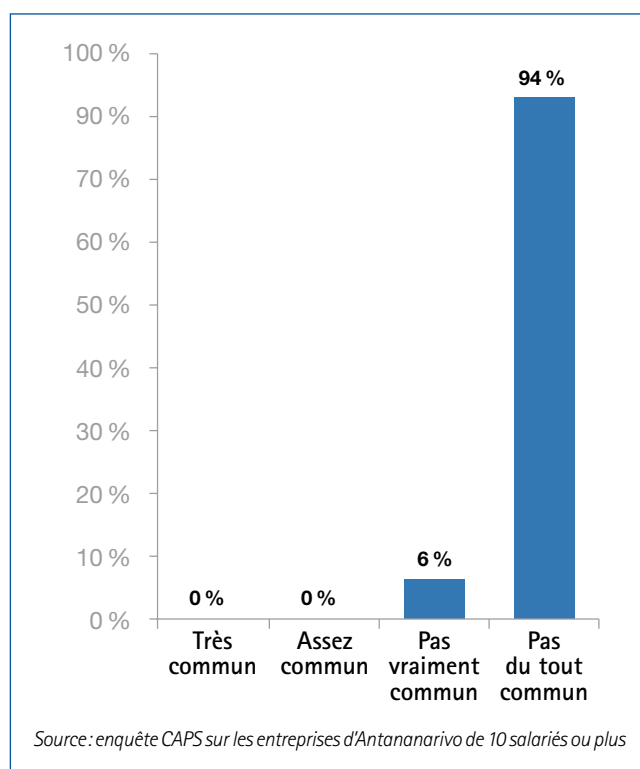
Bien que les entreprises assujetties à la TVA puissent bénéficier, d'après la loi, d'un remboursement du montant de la TVA payée sur les achats professionnels, beaucoup d'entreprises ne l'exigent pas. D'après les résultats de l'enquête CAPS, seulement 24% des entreprises de l'échantillon demandent un remboursement de la TVA. Il faut bien sûr noter que beaucoup des entreprises enquêtées ne sont pas assujetties à la TVA et ne peuvent donc prétendre à un remboursement de la TVA payée sur leurs achats professionnels.

Parmi les entrepreneurs qui demandent le remboursement de la TVA, 62% considèrent les démarches à effectuer « complexes ». Ils sont même 38% à les considérer « très complexes ». Les délais pour obtenir le remboursement de la TVA sont parfois très longs, ce qui explique en partie pourquoi certaines entreprises renoncent à obtenir un remboursement qu'elles seraient en droit d'obtenir. Une autre raison parfois invoquée par les entrepreneurs pour ne pas demander le remboursement de la TVA, qui porte souvent sur

des montants très importants, est la peur de représailles fiscales de la part de l'administration.

Malgré la complexité du processus de remboursement de la TVA pour les entreprises de la capitale, les répondants à l'enquête CAPS considèrent qu'il n'est pas commun pour les entreprises dans leur secteur d'activité d'effectuer des « cadeaux ou paiements informels » pour s'assurer de ce remboursement. Ils sont même 94% à considérer « pas du tout communes » ces pratiques. Un résultat frappant qu'il convient de relativiser, néanmoins, dans la mesure où cette question n'a été posée qu'aux entreprises qui demandent effectivement le remboursement de la TVA. Il est également intéressant de noter que le taux de non-réponse pour cette question d'opinion est relativement important, puisque 17% des entrepreneurs interrogés n'ont pas souhaité y répondre (Graphe 13).

Graphe 13 : Évaluation par les entrepreneurs d'Antananarivo de la prévalence du versement de pots-de-vin pour s'assurer du remboursement de la TVA dans leur secteur d'activité



35. Source : Economic Development Board of Madagascar : <http://www.edbm.gov.mg/Guichet-Unique/Documents-telechargeables/Informations-utiles/Les-principaux-impots>

10 DOUANES

La facilitation du commerce transfrontalier représente un enjeu stratégique pour les entreprises opérant à Madagascar, dans un monde de plus en plus interconnecté. L'ouverture croissante des marchés leur offre en effet des opportunités de développer leurs activités commerciales aux niveaux régional et intercontinental. Pourtant, si l'on croit les résultats de l'*Enterprise Survey 2013* publiés par la Banque mondiale³⁶, près d'une entreprise malgache sur sept (13 %) identifie les réglementations douanières et commerciales comme des contraintes majeures à leur activité.

Les données recueillies dans le rapport *Doing business 2015* de la Banque Mondiale permettent de dresser un état des lieux de la situation en matière de facilitation du commerce international à Madagascar³⁷. Ce rapport recense les procédures, délais et coûts associés à l'exportation et à l'importation d'une cargaison standard de marchandises par voie maritime, conformément aux réglementations applicables dans le pays. En 2015, Madagascar se positionne au 109^{ème} rang de ce classement international comprenant 189 économies, et gagne une place par rapport à l'année précédente. En ce qui concerne la logistique du commerce, que ce soit à l'importation ou à l'exportation, les démarches officielles prennent près de trois semaines, depuis l'accord contractuel final entre les deux parties commerciales jusqu'à la livraison des marchandises. Par ailleurs, l'exportation d'un conteneur standard de marchandises requiert cinq documents, et coûte 1 195 \$ en moyenne. L'importation du même conteneur nécessite neuf documents, et coûte 1 555 \$, une performance globalement meilleure que la moyenne des pays d'Afrique subsaharienne.

L'enquête CAPS portant sur les entreprises de 10 salariés ou plus apporte des précisions par rapport aux contraintes opérationnelles auxquelles doit faire face une entreprise de la capitale si elle souhaite importer ou exporter des biens.

Parmi celles-ci, on notera les formalités d'obtention d'une licence d'importation auprès de l'administration douanière. Un cinquième (21 %) des entreprises interrogées se sont prêtées à cet exercice au cours des deux années précédant l'enquête. Si un tiers des répondants (32 %) a obtenu cette licence dans les 10 jours, on

36. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant les principaux obstacles aux affaires pour les entrepreneurs, voir : <http://www.enterprisesurveys.org/data/exploreeconomies/2013/madagascar>

37. Pour plus d'information sur la méthodologie utilisée par la Banque Mondiale pour son étude *Doing Business*, voir : <http://français.doingbusiness.org/methodology/trading-across-borders>

constate tout de même que l'attente moyenne est de 25 jours pour l'octroi de ce document administratif. Le traitement de la demande a même pris plus d'un mois pour près d'une entreprise sur six (16 %).

Par ailleurs, 36 % des entreprises enquêtées ont effectué des opérations d'importation dans l'année précédant l'enquête CAPS. Concernant leur dernière importation, cinq jours ou moins ont été nécessaires entre le débarquement des marchandises au point d'entrée du territoire et leur passage à la douane pour le quart (24 %) des entrepreneurs interrogés. Ceci étant, le délai moyen du dédouanement à l'importation demeure élevé et se chiffre à 23 jours. Ainsi, 20 % des entreprises ayant participé à l'enquête ont dû patienter plus de 30 jours pour s'acquitter de toutes les procédures à la douane dans le cadre de leur dernière importation.

La lourdeur des procédures douanières peut favoriser la corruption. L'*Enterprise Survey 2013* à Madagascar estime à 39 % la proportion des entrepreneurs faisant face à une demande de paiements informels au cours de leurs démarches d'obtention d'une licence d'importation³⁸, une proportion deux fois supérieure à la moyenne des pays d'Afrique subsaharienne (16 %).

Les charges supplémentaires pour les entrepreneurs de la capitale résultant de ces paiements illégaux sont évaluées par l'enquête CAPS à 4 % du coût total de la licence d'importation. Le faible nombre d'observations ayant permis de calculer cette statistique (6) oblige néanmoins à être prudent quant à son interprétation. À noter également que les entrepreneurs ayant participé à l'enquête CAPS ne sont que 20 % à considérer qu'il est commun pour les entreprises dans leur secteur d'activité de payer des pots-de-vin pour faciliter le dédouanement de marchandises importées, et 68 % estiment même que ces pratiques ne sont « pas du tout communes » (Graphique 14).

Des pratiques de corruption peuvent également affecter les entreprises exportatrices. Douze entrepreneurs, soit 7 % de l'échantillon de la seconde enquête CAPS portant sur les entreprises de 10 salariés ou plus, ont effectué une demande de licence d'exportation au cours des deux années précédant l'enquête. L'attente moyenne pour obtenir ce document est de deux semaines (14 jours), mais ce délai peut se prolonger au-delà de trois semaines pour un tiers (29 %) des entreprises. Les chefs d'entreprises de la capitale doivent en outre dépenser 100 000 ariary, en moyenne, en pots-de-vin auprès des agents de la douane afin de s'assurer de l'obtention de cette licence. Encore

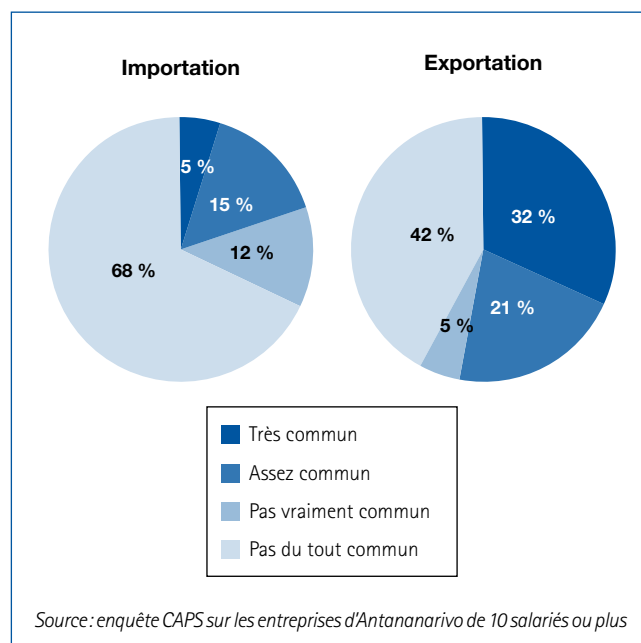
38. Statistique calculée à partir de 14 observations.

une fois, il convient d'être prudent au niveau des conclusions à tirer de ces dernières statistiques, dans la mesure où les entreprises qui ont répondu à ces questions sont très peu nombreuses³⁹.

Les entreprises ayant exporté des marchandises l'année précédant l'enquête CAPS représentent 13% de l'échantillon. Le poids des procédures semble être moins important à l'exportation qu'à l'importation, puisque près d'une entreprise exportatrice sur deux (44%) a pu dédouaner ses marchandises en une journée, avec une durée moyenne de passage en douane estimée à trois jours. Pourtant, malgré ce délai relativement court, il apparaît qu'une majorité (53%) de chefs d'entreprise considère qu'il est commun pour les entreprises dans leur secteur d'activité d'effectuer des « cadeaux ou paiements informels » pour faciliter le dédouanement de marchandises exportées (Graphe 14). Cette situation paradoxale s'explique en partie par le fait que les procédures à l'importation sont plus dématérialisées qu'à l'exportation. Ainsi, même si le nombre de procédures et les délais d'attente sont plus faibles pour les exportations, les entreprises exportatrices sont en contact plus direct avec les agents des douanes, facilitant ainsi les pratiques de corruption.

39. Pour plus de détails, voir le tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS à la fin du rapport.

Graphe 14 : Évaluation par les entrepreneurs d'Antananarivo de la prévalence du paiement de pots-de-vin pour faciliter l'importation et l'exportation dans leur secteur d'activité



11 MARCHÉS PUBLICS

Les marchés publics peuvent représenter des opportunités économiques intéressantes pour les entreprises. À Antananarivo, de nombreuses sociétés choisissent pourtant de ne pas participer à des appels d'offres publics, s'excluant de marchés représentant des perspectives d'affaires séduisantes. De multiples complications accompagnent en effet le processus de passation des marchés publics à Madagascar.

D'après les résultats de l'*Enterprise Survey 2013* de la Banque Mondiale pour Madagascar⁴⁰, près de 43% des entrepreneurs interrogés considèrent qu'il est nécessaire, pour les entreprises similaires à la leur, d'effectuer des paiements illicites à des agents de l'État pour s'assurer de l'obtention d'un contrat public⁴¹. Cette proportion d'entrepreneurs est sensiblement supérieure à la moyenne des pays d'Afrique subsaharienne (32%). Ces pots-de-vin représenteraient une moyenne de 1,4% du montant total du contrat⁴², contre 2,4% en moyenne pour les autres pays d'Afrique subsaharienne.

Plus d'un cinquième (22%) des sociétés de l'échantillon de la seconde enquête CAPS portant sur les entreprises d'Antananarivo d'au moins 10 salariés ont déclaré avoir participé à un appel d'offre public au cours des deux années précédant l'enquête. Ces entrepreneurs sont 69% à considérer inéquitable le processus de passation des marchés publics dans leur secteur d'activité, dont 17% à le considérer « très inéquitable ». Aucun entrepreneur interrogé ne pense que le processus de passation des marchés publics est « très équitable » dans leur secteur (Graph 15). Compte tenu de fait que cette question n'a été posé qu'aux sociétés ayant participé à au moins un appel d'offre public au cours des deux années précédant l'enquête, on peut légitimement penser que les résultats auraient été encore plus sévères si les réponses

40. Pour plus d'informations sur la méthodologie de l'enquête *Enterprise Survey*, et pour accéder aux données de l'enquête Madagascar 2013 concernant la corruption dans les marchés publics, voir : <http://www.enterprisesurveys.org/data/exploreconomies/2013/madagascar#corruption>

41. Statistique obtenue à partir de 23 observations, avec un écart-type de 8,8.

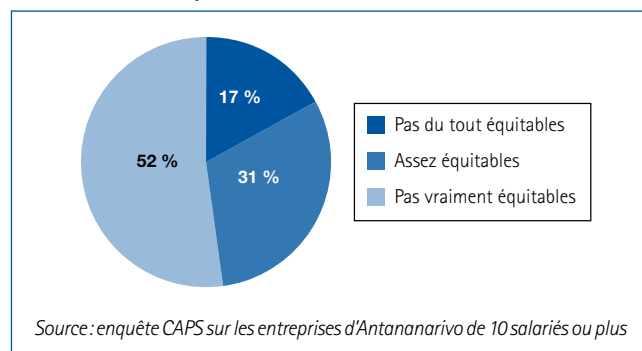
42. Statistique obtenue à partir de 21 observations, avec un écart-type de 1,3.

des entrepreneurs ayant fait le choix de ne pas soumissionner avaient été comptabilisées.

Pour certains entrepreneurs qui ont décidé de ne pas postuler aux appels d'offres publics, le choix parmi les soumissionnaires n'est pas toujours effectué en toute transparence, et ouvre la voie à des pratiques de corruption entre les entreprises et les agents de l'État en charge de la sélection. La suspicion sur les sociétés remportant certains contrats publics est tellement forte que des entreprises préfèrent s'exclure d'appels d'offre simplement pour de ne pas risquer leur réputation. Pour d'autres entrepreneurs, la sélection est biaisée dès le départ et participer à un appel d'offre représente une pure perte de temps et d'énergie. Certains considèrent cependant qu'il est possible de remporter des appels d'offre à condition de payer des pots-de-vin, mais s'y refusent. D'autres entreprises profitent de cet état de fait et gagnent des contrats publics en reversant une partie du montant de ces contrats aux agents publics en charge de la sélection.

La corruption n'est évidemment pas la seule contrainte à la participation des entreprises d'Antananarivo aux appels d'offres publics. Des retards de paiement récurrents de la part de l'État et des complications administratives représentent d'autres barrières à l'origine d'une partie des renoncements.

Graph 15 : Évaluation par les entrepreneurs d'Antananarivo de l'équité du processus de passation des marchés publics dans leur secteur d'activité



12 CORRUPTION

Les enquêtes CAPS ont également demandé plus directement aux entrepreneurs d'Antananarivo combien il est nécessaire, pour les entreprises similaires à la leur, de dépenser annuellement en pots-de-vin pour que les « choses soient faites » avec l'administration.

Du fait de son caractère sensible, le taux de non-réponse à cette question est élevé : près de 45% des entrepreneurs interrogés n'ont pas souhaité ou pas su y répondre. Les entrepreneurs qui ont répondu à cette question ont défini un montant moyen de pots-de-vin de 6 200 000 ariary, ou 11% de leur chiffre d'affaires annuel. Si un tiers des entrepreneurs (33%) mentionnent qu'il n'est pas nécessaire d'effectuer le moindre paiement informel, le quart qui déclare le plus (24%) considère que plus de 15% du chiffre d'affaires des entreprises comparable à la leur est dépensé en « cadeaux » et autres pots-de-vin dans le cadre des interactions avec les agents de l'État (Graphe 16).

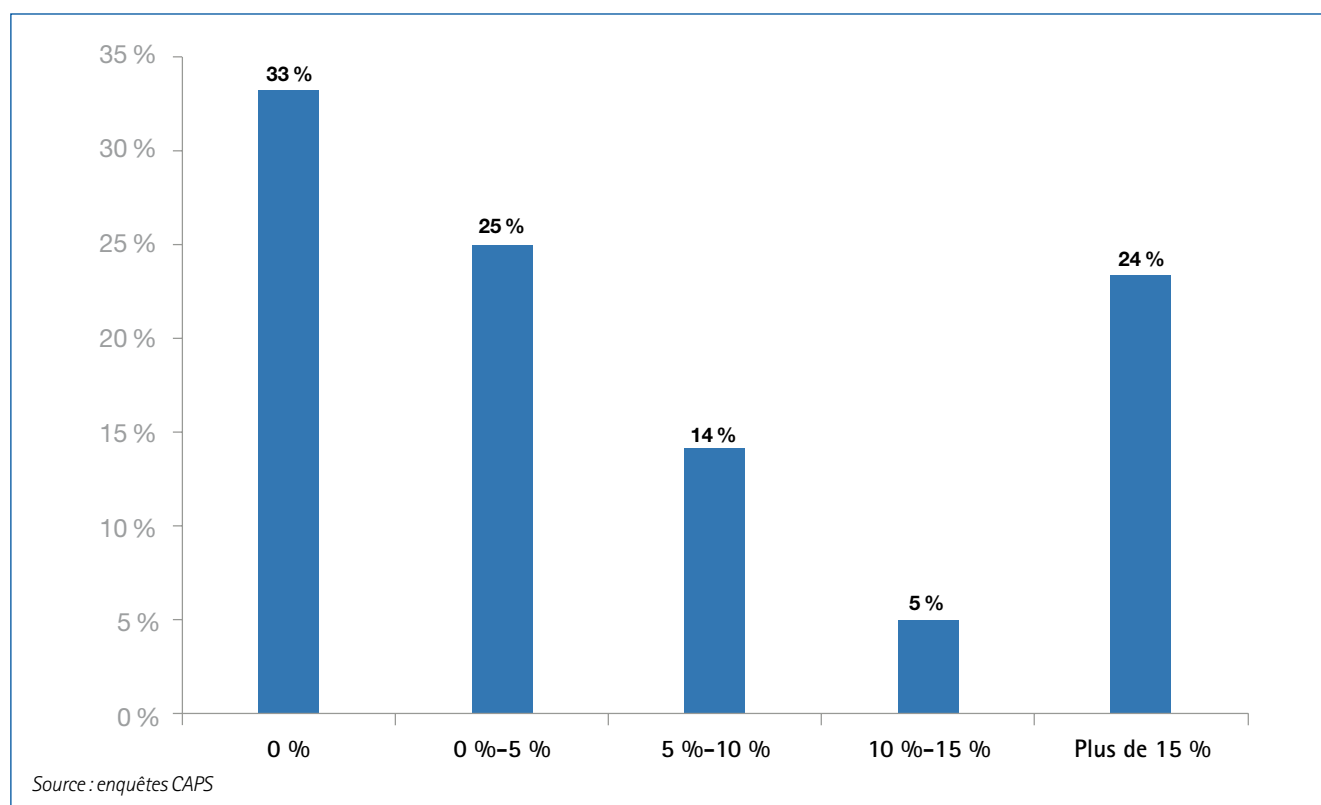
À noter que les entreprises les plus récentes citent un montant de pots-de-vin en pourcentage du chiffre d'affaires plus important

que les entreprises plus anciennes⁴³. Il n'existe toutefois pas de relation linéaire statistiquement significative entre le montant de pots-de-vin déclaré et la taille de l'entreprise, mesurée par son nombre de salariés.

Une très large majorité (74%) des entrepreneurs sont « d'accord » avec l'affirmation selon laquelle la corruption représente un obstacle à leur activité. Ils sont même 60% à être « tout à fait d'accord » avec cette assertion. Pire, ils sont 93% à penser que la corruption a augmenté ces deux dernières années, et 86% à affirmer qu'elle a fortement augmentée. Seuls 1% des chefs d'entreprise enquêtés perçoivent une diminution de la corruption au cours de cette période.

43. Corrélation de Pearson de $-0,14$ entre le montant de pots-de-vin déclaré par l'entrepreneur en pourcentage du chiffre d'affaires d'entreprises similaires à la sienne et le nombre d'années d'existence de l'entreprise, avec une p -value inférieure à 10%, obtenue à partir de 147 observations.

Grphe 16 : Répartition du montant total de pots-de-vin versés par les entrepreneurs d'Antananarivo, en pourcentage du chiffre d'affaires annuel



RECOMMANDATIONS

Un premier atelier de restitution des résultats de l'étude CAPS a été organisé par Transparency International – Initiative Madagascar (TI-IM) en février 2015 à destination des chefs d'entreprise ayant pris part aux enquêtes. Une quarantaine d'entrepreneurs ont participé à cet événement qui a permis d'initier une discussion sur les propositions de réformes qu'il conviendrait de mettre en avant auprès des autorités publiques pour mettre un frein aux pratiques de corruption identifiées par l'étude. Un second atelier d'identification des réformes à mettre en œuvre, également organisé en février 2015, a rassemblé une trentaine de responsables de groupements d'entreprises, de chambres de commerce et d'industrie et autres experts du secteur privé malgache. De ces rencontres ont émergé la liste de recommandations suivantes :

1. Clarifier et vulgariser les textes de lois et procédures

Le flou de certains textes de lois et procédures applicables aux entreprises facilite les pratiques d'extorsion de la part de certains agents publics. Les textes obsolètes doivent être abrogés, et les textes en vigueur doivent être simplifiés et clarifiés. La communication autour de la mise à jour des textes doit également être améliorée. Il conviendrait enfin de vulgariser ces textes de lois et procédures afin qu'ils soient accessibles à tous.

3. Développer un système de retour d'expérience (*feedback*) systématique

Un système d'enquêtes en ligne collectant de façon systématique le retour d'expérience des entrepreneurs à la suite de leurs interactions avec les fonctionnaires de l'État devrait voir le jour. Ce système de *feedback* anonyme permettrait de révéler les services où les pratiques de corruption sont les plus fréquentes, et ainsi de concentrer les efforts de lutte contre la corruption sur ces maillons faibles au sein de l'administration.

2. Introduire et appliquer des délais légaux pour l'obtention de documents administratifs

L'attente est une stratégie utilisée par certains agents publics peu scrupuleux pour soutirer des pots-de-vin aux entreprises désireuses « d'accélérer les choses ». Une réponse possible est l'application de délais légaux pour l'obtention de ces documents administratifs, qui permettrait à une entreprise d'obtenir réparation si les délais d'attente sont supérieurs à ces prescriptions légales.

4. Pratiquer un système de rémunération des agents publics basé sur la performance ou mettre en œuvre des incitations financières à l'efficacité

Des incitations financières à l'efficacité encourageraient les agents publics à réduire les délais d'attente pour l'obtention de documents administratifs, l'une des raisons principales pour lesquelles les entrepreneurs paient des pots-de-vin lors de leurs interactions avec les agents de l'administration. Un système de rémunération basé sur la performance pourrait en outre reposer en partie sur les indicateurs objectifs produits à partir des données du système de retour d'expérience (*recommandation 3*).

5. Lutter contre les harcèlements fiscaux

L'attribution d'un rôle décisionnaire à la Commission Fiscale de Recours Administratif (CFRA) rendrait plus difficile les harcèlements fiscaux à l'origine d'une forte corruption entre le secteur privé et un certain nombre d'agents du fisc. Dans ce cadre, un double-degré de juridiction pourrait être mis en place entre la CFRA et le Conseil d'État. Par ailleurs, il est important que la saisine judiciaire devienne suspensive, sans quoi nombre d'entreprises ne feront pas appel à ces instances de recours.

7. Inclure des facilitateurs dans tous les services administratifs

Des facilitateurs pourraient agir en tant que point focal pour relayer les doléances des entrepreneurs au sujet des pratiques de corruption dans les services administratifs, en partenariat avec le BIANCO. La mise en place de facilitateurs dans tous les services administratifs permettrait également de mieux orienter les entrepreneurs et de participer à la vulgarisation des textes de lois et procédures applicables aux entreprises.

9. Améliorer l'accès à l'information

La transparence dans l'accès à l'information est cruciale pour repérer les cas de corruption. La mise en ligne d'informations détaillées et accessibles sur les marchés publics constitue à ce titre une priorité. L'application effective d'une loi de protection des lanceurs d'alerte contribuerait de la même façon à mettre un terme à l'impunité des auteurs de corruption.

6. Renforcer le contrôle des circuits d'importation et d'exportation

Les procédures douanières et commerciales présentent un fort risque de corruption, et l'intégralité de la chaîne de contrôle doit être significativement renforcée afin que les pratiques corruptives soient freinées, particulièrement à l'exportation.

8. Généraliser la dématérialisation des procédures (e-government)

Les expériences concluantes de dématérialisation des procédures au niveau fiscal et douanier doivent servir d'exemples dans une optique de généralisation à l'ensemble des services administratifs. L'e-government permet en effet d'améliorer la transparence et d'accélérer le traitement des demandes administratives tout en réduisant les risques de corruption en supprimant la plupart des interactions physiques entre les entreprises et les agents de l'administration.

10. Accroître les attributions et assurer l'indépendance des organismes publics de lutte contre la corruption

Les organismes publics de lutte contre la corruption, et en premier lieu le BIANCO, doivent devenir statutairement indépendants de toute influence pouvant réduire l'efficacité de leur action. Leurs compétences doivent également être renforcées. Le BIANCO devrait notamment être capable de sanctionner judiciairement les responsables des infractions de corruption qu'il a lui-même identifiées.

MÉTHODOLOGIE DE L'ÉTUDE

La présente étude a été réalisée à partir des résultats de deux enquêtes effectuées en novembre 2014 auprès de chefs d'entreprise de quatre districts de la région Analamanga, où se situe la capitale Antananarivo (Ambohidratrimo, Antananarivo-Avaradrano, Antananarivo-Atsimondrano, Antananarivo-Renivohitra). Ces deux enquêtes ont permis d'interroger plus de 400 entrepreneurs opérant dans la capitale sur les contraintes à l'activité de leur entreprise.

Une dizaine d'entretiens avec des acteurs du secteur privé (chefs d'entreprise, associations d'entrepreneurs, chambres de commerce et d'industrie...) ont été réalisés en octobre 2014 afin de permettre à l'équipe de recherche de Transparency International – Initiative Madagascar (TI-IM) de mieux cerner les principaux obstacles à l'activité et au développement des entreprises de la capitale et de développer des questionnaires d'enquête pertinents et adaptés au contexte malgache.

Les questionnaires utilisés dans les deux enquêtes d'entrepreneurs ont été réalisés sur le modèle des questionnaires *Enterprise Survey* et *Business Environment and Enterprise Performance Survey* (BEEPS) de la Banque Mondiale et en s'appuyant sur ces entretiens préliminaires. Pour certaines questions impliquant des montants, deux formats de réponse ont été utilisés. Dans une première version des questionnaires, les montants sont demandés en termes monétaires (en ariary ou en franc malgache). Dans la seconde version, les questions demandent au répondant d'exprimer ces montants en pourcentage du chiffre d'affaires de leur entreprise (ou d'une autre valeur). Les deux versions des questionnaires utilisés ont été appliquées aléatoirement aux chefs d'entreprise interrogés. Les questionnaires ont été dans un premier temps développés en français, puis traduits en malgache par l'équipe de recherche. La traduction a ensuite été vérifiée indépendamment par un traducteur professionnel. Ces questionnaires ont enfin été testés auprès d'une dizaine d'entrepreneurs préalablement au lancement des enquêtes.

La première enquête, qui s'est déroulée du 3 au 14 novembre 2014, cible spécifiquement des entrepreneurs ayant récemment créé leur entreprise (après le 1^{er} janvier 2012). Cette enquête vise particulièrement à comprendre les contraintes posées par la corruption administrative lors de la création d'une entreprise privée dans la capitale malgache. Outre le critère de date de création de l'entreprise, les entreprises éligibles à cette première enquête sont des entreprises privées à but lucratif qui emploient

au moins un travailleur en plus du chef d'entreprise. Ce dernier critère doit permettre d'écarter un certain nombre d'entreprises individuelles dont la structure organisationnelle et les contraintes à l'activité sont très différentes de celles des entreprises plus développées qui constituent le cœur de l'économie.

La seconde enquête a été mise en œuvre du 17 au 28 novembre 2014, avec l'objectif d'évaluer les principales formes de corruption administrative affectant les entreprises opérant à Antananarivo. Seules les entreprises privées à but lucratif créées avant le 1^{er} janvier 2012 et comprenant au moins 10 salariés ont été sélectionnées pour participer à cette seconde enquête. Le choix du critère de date de création de l'entreprise s'explique par le fait qu'un certain nombre de questions posées par cette enquête nécessite que l'entreprise soit déjà bien établie (remboursement de la TVA, obtention d'une licence d'exportation...). Le critère du nombre de salariés minimum a été ajouté dans un souci de représentativité des entreprises de la capitale, dans la mesure où l'échantillon de répondants à la première enquête, portant sur les entreprises nouvellement créées dans l'agglomération d'Antananarivo, est composé de façon prépondérante de micro-entreprises d'au plus cinq salariés.

L'échantillon d'entrepreneurs interrogés dans le cadre de ces deux enquêtes est comparable à celui que la Banque Mondiale a utilisé pour son enquête *Enterprise Survey*, mise en œuvre début 2014, en termes de nombres de salariés, comme le montrent les deux graphiques en page suivante ([Graphe 17](#)).

Tous les efforts ont été mis en œuvre par l'équipe de recherche de TI-IM pour assurer une comparabilité maximale entre les questionnaires des deux enquêtes CAPS. Ainsi, la grande majorité des modules de questions sont communs aux deux enquêtes. Seul le module sur la création d'entreprise est spécifique aux questionnaires de la première enquête, la seconde enquête intégrant des modules sur les terrains et constructions, la TVA, les douanes et les marchés publics absents de la première enquête.

Une équipe de 10 enquêteurs et un superviseur ont été recrutés par TI-IM pour la mise en œuvre de ces deux enquêtes, sous la supervision étroite de l'équipe de recherche de TI-IM. Cette équipe de recherche est composée de M. Florent Andriamahavonjy, coordonnateur national de TI-IM, de M. Frédéric Lesné, consultant à la Fondation pour les Études et Recherches sur le Développement International (FERDI) et collaborateur technique de TI-IM pour

le projet CAPS ainsi que de M. Hoby Razafindrakoto, stagiaire à TI-IM. Le superviseur recruté pour les besoins de ces deux enquêtes avait déjà travaillé par le passé avec TI-IM à la réalisation de plusieurs enquêtes sur la corruption. Les enquêteurs sélectionnés, en majorité des étudiants de l'université d'Antananarivo, avaient tous au moins une expérience préalable dans la mise en œuvre d'enquêtes, bien qu'aucun n'ait travaillé directement avec TI-IM. La même équipe a réalisé les deux enquêtes, à l'exception d'un enquêteur remplacé à la fin de la première enquête.

La base d'échantillonnage a été obtenue auprès de l'Institut National de la Statistique Malgache (INSTAT). Celle-ci comporte une liste d'environ 60 000 entreprises ayant récemment créé ou modifié leur carte statistique, une procédure obligatoire pour toutes les entreprises du pays. La base fournie par l'INSTAT comporte le nom de l'entreprise (ou le nom de l'entrepreneur si l'entreprise ne possède pas de nom spécifique), l'adresse de l'entreprise, son secteur d'activité, l'année de premier enregistrement de l'entreprise, son nombre de salariés (par catégories) et, dans environ 60% des cas, le numéro de téléphone de l'entreprise.

Une équipe d'opérateurs téléphoniques a été chargée d'appeler tous les numéros de téléphone des entreprises supposées éligibles sur la base des informations fournies par l'INSTAT, lorsque ces numéros étaient disponibles. L'intérêt de ces appels est de vérifier directement auprès des entrepreneurs l'éligibilité de leur entreprise à l'enquête et, le cas échéant, de prendre rendez-vous avec eux pour un entretien en face-à-face. Les rendez-vous ont été pris directement avec l'entrepreneur lorsque cela était possible ou, à défaut, avec la personne s'occupant directement des documents administratifs et du lien avec l'administration au nom de l'entreprise. Ces rendez-vous ont été pris par « grappes » de quartier, ce qui a permis une allocation optimale des entretiens aux enquêteurs en réduisant

le temps perdu dans leurs déplacements. Dans la mesure où les enquêteurs possèdent un agenda de rendez-vous disponible à l'avance, la supervision en a été également grandement facilitée.

Une grande partie des numéros de téléphone fournis dans la base de l'INSTAT étant cependant erronés ou hors service (de l'ordre de 50% des numéros disponibles), les enquêteurs ont également été chargés de retrouver les entreprises sur la base des adresses physiques et, dans certains cas (uniquement dans le cadre de la première enquête sur les entreprises nouvellement créées), de trouver eux-mêmes des entreprises éligibles à l'enquête dans des quartiers sélectionnés par l'équipe de recherche.

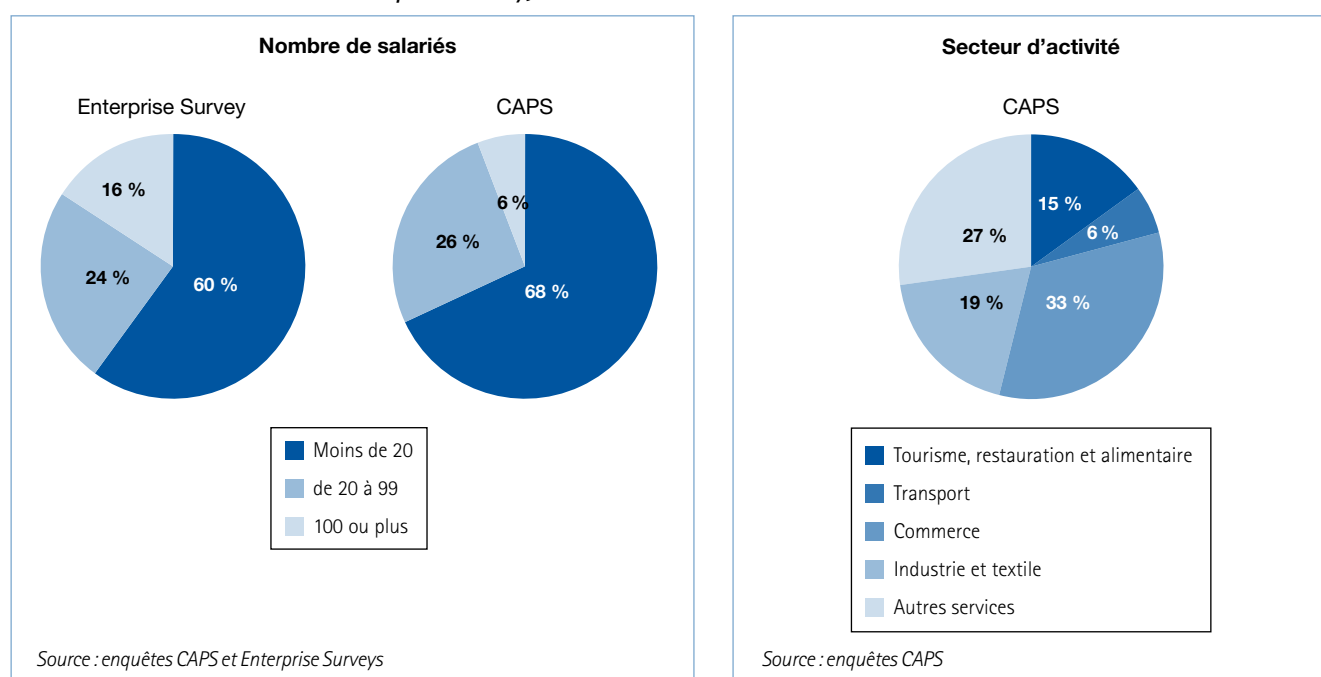
Les entretiens se sont déroulés en face-à-face avec un enquêteur de TI-IM sur la base de questionnaires papier. 247 entreprises ont été approchées dans le cadre de la première enquête sur les entreprises nouvellement créées, et 189 pour la seconde enquête, pour un total de 436 répondants.

Une double-saisie informatique des questionnaires a été effectuée par des opérateurs de saisie recrutés par TI-IM, double-saisie vérifiée et validée par l'équipe de recherche de TI-IM.

Deux ateliers de restitution des résultats de l'enquête ont été organisés en février 2015. Les analyses produites par l'équipe de recherche y ont été présentées aux chefs d'entreprise ayant participé à l'enquête, ainsi qu'à des groupements professionnels et experts du secteur privé malgache.

Ces ateliers ont en outre permis l'identification de recommandations de réformes spécifiques à soumettre aux autorités publiques. Les recommandations identifiées sont listées dans la section précédente.

Graph 17 : Répartition par nombre de salariés et secteur d'activité des entreprises de l'échantillon CAPS (et comparaison avec l'échantillon *Enterprise Survey*)





Atelier 1 : Restitution des résultats à destination des entrepreneurs ayant participé aux enquêtes CAPS (Analakely, 18 février 2015)

Première photo à gauche : M. Florent Andriamahavonjy, Coordonnateur national à Transparency International – Initiative Madagascar présente le travail de l'ONG et le projet CAPS.

Première photo à droite : Une chef d'entreprise participe au débat sur les réformes à mettre en oeuvre pour lutter contre la corruption.

Milieu à gauche et à droite : L'assistance composée de chefs d'entreprise durant la présentation des résultats des enquêtes.

Troisième photo à gauche : M. Frédéric Lesné, collaborateur technique à TI-IM et consultant FERDI, présente les résultats des enquêtes CAPS.

Troisième photo à droite : M. Frédéric Lesné répond aux questions de journalistes sur l'étude CAPS.



Atelier 2 : Identification des recommandations de réforme avec des responsables de groupements d'entreprises et de chambres de commerce et d'industrie ainsi que des experts du secteur privé malgache (Faravohitra, 26 février 2015)



Réunion de travail des enquêteurs : Rencontre bi-hebdomadaire entre l'équipe de recherche et les enquêteurs CAPS au siège de TI-IM pour faire le point sur le déroulement des enquêtes

TABLEAU RÉCAPITULATIF DES PRINCIPAUX INDICATEURS

Tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS

Thème/ Secteur	Indicateur	Estimation	Unité	Écart- type	Nombre d'obs.	Source
Création d'entreprise	Proportion d'entrepreneurs déclarant avoir dû obtenir une autorisation d'exercer	97,57	%	-	247	Nouvelle entreprises
	Attente pour l'obtention de l'autorisation d'exercer	40,54	jours	11,53	167	Nouvelle entreprises
	Temps de travail requis pour remplir les démarches de création d'entreprise	37,80	heures	19,44	148	Nouvelle entreprises
	Proportion d'entrepreneurs déclarant que les démarches de création d'entreprise sont complexes	51,66	%	-	211	Nouvelle entreprises
	Coût total de la création d'entreprise	795 536	ariary	2 796 508	151	Nouvelle entreprises
	Pots-de-vin payés lors de la création d'entreprise	107 585	ariary	485 916	106	Nouvelle entreprises
Infrastructures	Proportion de jours de délestages	24,80	%	23,95	319	Deux enquêtes
	Durée moyenne d'un délestage	162,02	minutes	226,32	335	Deux enquêtes
	Pertes dues aux délestages, en proportion du chiffre d'affaires annuel	17,62	%	17,20	150	Deux enquêtes
	Proportion d'entrepreneurs à avoir demandé le raccordement à l'électricité dans les deux ans	6,89	%	-	421	Deux enquêtes
	Attente pour le raccordement à l'électricité	188,64	jours	218,61	11	Deux enquêtes
	Coût total du raccordement à l'électricité	1 497 500	ariary	2 502 678	10	Deux enquêtes
	Pots-de-vin payés pour le raccordement à l'électricité	205 000	ariary	210 000	4	Deux enquêtes
	Pots-de-vin payés pour le raccordement à l'électricité, en pourcentage de la dépense totale	23,75	%	14,17	4	Deux enquêtes
	Proportion d'entrepreneurs déclarant avoir eu des problèmes d'approvisionnement en eau au cours des douze derniers mois	32,74	%	-	336	Deux enquêtes
	Proportion d'entrepreneurs à avoir demandé le raccordement à l'eau dans les deux ans	3,05	%	-	394	Deux enquêtes
	Attente pour le raccordement à l'eau	263,75	jours	190,80	4	Deux enquêtes

Tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS (suite)

Thème/ Secteur	Indicateur	Estimation	Unité	Écart- type	Nombre d'obs.	Source
Infrastructures	Coût total du raccordement à l'eau	3 866 667	ariary	5 335 104	3	Deux enquêtes
	Pots-de-vin payés pour le raccordement à l'eau	70 000	ariary	70 000	2	Deux enquêtes
Terrains et constructions	Proportion d'entreprises possédant une partie ou la totalité du terrain qu'elles occupent	37,84	%	-	185	Grandes entreprises
	Proportion d'entreprises possédant un titre foncier pour le terrain qu'elles occupent	95,59	%	-	68	Grandes entreprises
	Proportion d'entrepreneurs se déclarant confiant en cas de dispute sur la propriété de leur terrain	90,91	%	-	66	Grandes entreprises
	Proportion d'entrepreneurs à avoir demandé un titre foncier dans les deux ans	14,06	%	-	64	Grandes entreprises
	Attente pour l'obtention du titre foncier	147	jours	150,03	5	Grandes entreprises
	Pots-de-vin payés pour l'obtention du titre foncier	150 000	ariary	212 132	2	Grandes entreprises
	Pots-de-vin payés pour l'obtention du titre foncier, en pourcentage de la dépense totale	10,67	%	9,02	3	Grandes entreprises
	Proportion d'entrepreneurs à avoir demandé un permis de construire dans les deux ans	24,24	%	-	66	Grandes entreprises
	Attente pour l'obtention du permis de construire	186,22	jours	194,42	9	Grandes entreprises
	Pots-de-vin payés pour l'obtention du permis de construire, en pourcentage de la dépense totale	22	%	43,70	5	Grandes entreprises
Vols et plaintes	Proportion d'entreprises à avoir été victime de vols, vandalisme, fraude ou escroquerie au cours des douze derniers mois	49,77	%	-	434	Deux enquêtes
	Pertes dues aux vols, vandalisme, fraude ou escroquerie, en part du chiffre d'affaires annuel	15,67	%	19,65	96	Deux enquêtes
	Proportion d'entrepreneurs victimes à avoir porté plainte	41,40	%	-	215	Deux enquêtes
	Proportion d'entrepreneurs à avoir reçu une demande de pot-de-vin lors du dépôt de plainte	28,92	%	-	83	Deux enquêtes
	Pots-de-vin payé lors du dépôt de plainte	633 304	ariary	2 070 919	23	Deux enquêtes
Justice	Proportion d'entrepreneurs à avoir eu recours à la justice au cours des deux dernières années	14,25	%	-	428	Deux enquêtes
	Coût total du recours à la justice	12 200 000	ariary	24 900 000	36	Deux enquêtes
	Pots-de-vin payés lors du recours à la justice, en pourcentage de la dépense totale	24,24	%	31,61	23	Deux enquêtes
	Proportion d'entrepreneurs à considérer les décisions de justice inéquitables	66,67	%	-	36	Grandes entreprises

Tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS (suite)

Thème/ Secteur	Indicateur	Estimation	Unité	Écart- type	Nombre d'obs.	Source
Commune et fokontany	Proportion d'entrepreneurs à avoir été en contact avec des agents de la commune ou du fokontany au cours des douze derniers mois	68,28	%	-	435	Deux enquêtes
	Proportion d'entrepreneurs à avoir reçu une demande de pot-de-vin de la part d'agents de la commune ou du fokontany au cours des douze derniers mois	17,77	%	-	287	Deux enquêtes
	Nombre de demandes annuelles de pots-de-vin par les agents de la commune et du fokontany	8,06	demandes	28,71	46	Deux enquêtes
	Pots-de-vin payés aux agents de la commune et du fokontany au cours des douze derniers mois	965 433	ariary	2 904 963	36	Deux enquêtes
Fiscalité	Proportion d'entrepreneurs à considérer simples les démarches pour payer les impôts et taxes de leur entreprise	55,73	%	-	384	Deux enquêtes
	Temps de travail annuel requis pour payer les impôts et taxes de l'entreprise	12,86	heures	22,63	278	Deux enquêtes
	Proportion d'entrepreneurs à avoir reçu la visite d'agents fiscaux dans les douze derniers mois	48,58	%	-	424	Deux enquêtes
	Nombre de visites d'agents fiscaux dans les douze derniers mois	1,77	visites	2,10	191	Deux enquêtes
	Proportion d'entrepreneurs à avoir reçu une demande de pot-de-vin de la part d'agents fiscaux au cours des douze derniers mois	11,79	%	-	195	Deux enquêtes
	Nombre de demandes annuelles de pots-de-vin par les agents fiscaux	3,04	demandes	4,83	23	Deux enquêtes
	Pots-de-vin payés aux agents fiscaux au cours des douze derniers mois	4 114 100	ariary	13 200 000	14	Deux enquêtes
Inspections	Proportion d'entrepreneurs à avoir reçu la visite d'inspecteurs dans les douze derniers mois	32,95	%	-	431	Deux enquêtes
	Nombre de visites d'inspecteurs dans les douze derniers mois	4,87	visites	20,33	135	Deux enquêtes
	Proportion d'entrepreneurs à avoir reçu une demande de pot-de-vin de la part d'inspecteurs au cours des douze derniers mois	15,56	%	-	135	Deux enquêtes
	Nombre de demandes annuelles de pots-de-vin par les inspecteurs	22,12	demandes	54,08	17	Deux enquêtes
	Pots-de-vin payés aux inspecteurs au cours des douze derniers mois	1 959 733	ariary	3 718 373	15	Deux enquêtes
TVA	Proportion d'entreprises à demander le remboursement de la TVA	23,63	%	-	182	Grandes entreprises

Tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS (suite)

Thème/ Secteur	Indicateur	Estimation	Unité	Écart- type	Nombre d'obs.	Source
TVA	Proportion d'entrepreneurs à considérer complexes les démarches à effectuer pour obtenir le remboursement de la TVA	62,16	%	-	37	Grandes entreprises
	Proportion d'entrepreneurs à considérer commun d'effectuer des cadeaux ou paiements informels pour s'assurer du remboursement de la TVA	0	%	-	34	Grandes entreprises
Douanes	Proportion d'entrepreneurs à avoir demandé une licence d'importation dans les deux ans	21,31	%	-	183	Grandes entreprises
	Attente pour l'obtention de la licence d'importation	24,76	jours	24,93	19	Grandes entreprises
	Pots-de-vin payés pour l'obtention de la licence d'importation, en pourcentage de la dépense totale	3,67	%	8,04	6	Grandes entreprises
	Proportion d'entreprises à avoir importé des marchandises dans les deux ans	35,52	%	-	183	Grandes entreprises
	Attente pour le dédouanement de la dernière importation	22,69	jours	27,56	51	Grandes entreprises
	Proportion d'entrepreneurs à considérer commun d'effectuer des cadeaux ou paiements informels pour s'assurer du dédouanement d'une importation	19,51	%	-	41	Grandes entreprises
	Proportion d'entrepreneurs à avoir demandé une licence d'exportation dans les deux ans	6,59	%	-	182	Grandes entreprises
	Attente pour l'obtention de la licence d'exportation	13,86	jours	11,64	7	Grandes entreprises
	Pots-de-vin payés pour l'obtention de la licence d'exportation	100 000	ariary	141 421	2	Grandes entreprises
	Proportion d'entreprises à avoir exporté des marchandises dans les deux ans	12,85	%	-	179	Grandes entreprises
	Attente pour le dédouanement de la dernière exportation	2,69	jours	2,78	18	Grandes entreprises
	Proportion d'entrepreneurs à considérer commun d'effectuer des cadeaux ou paiements informels pour s'assurer du dédouanement d'une exportation	52,63	%	-	19	Grandes entreprises
Marchés publics	Proportion d'entreprises à avoir participé à un appel d'offres public ces deux dernières années	21,62	%	-	185	Grandes entreprises
	Proportion d'entrepreneurs à considérer inéquitable les processus d'appels d'offre dans leur secteur d'activité	68,57	%	-	35	Grandes entreprises

Tableau récapitulatif des principaux indicateurs produits à partir des données d'enquêtes CAPS (suite et fin)

Thème/ Secteur	Indicateur	Estimation	Unité	Écart- type	Nombre d'obs.	Source
Corruption	Part du chiffre d'affaires annuel versé en paiements informels et cadeaux aux agents publics pour que les « choses soient faites »	11,23	%	16,36	148	Deux enquêtes
	Montant annuel versé en paiements informels et cadeaux aux agents publics pour que les « choses soient faites »	6 185 177	ariary	36 000 000	82	Deux enquêtes
	Proportion d'entrepreneurs à considérer la corruption comme un obstacle à leur activité	73,66	%	-	429	Deux enquêtes
	Proportion d'entrepreneurs à considérer que la corruption a augmenté ces deux dernières années	92,49	%	-	426	Deux enquêtes

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Appendix C



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FONDATION POUR LES ÉTUDES
ET RECHERCHES SUR
LE DÉVELOPPEMENT INTERNATIONAL

LE CADRE LÉGISLATIF DES MARCHÉS PUBLICS À MADAGASCAR



Version – Décembre 2016

Transparency International – Initiative Madagascar (TI-IM) est une association de droit malgache créée en 2000 qui œuvre à la promotion des principes de transparence, de redevabilité et d'intégrité auprès de l'ensemble des acteurs de la société à Madagascar.

TI-IM est une section autonome de la coalition Transparency International (TI), la principale organisation mondiale issue de la société civile spécialisée dans la lutte contre la corruption.

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Madagascar



FONDATION POUR LES ÉTUDES
ET RECHERCHES SUR
LE DÉVELOPPEMENT INTERNATIONAL

Ce guide a été produit dans le cadre du projet « *Promoting Integrity in Public Procurement in Madagascar through Effective Transparency and Accountability Mechanisms* », mis en œuvre par Transparency International – Initiative Madagascar (TI-IM) entre juin 2016 et janvier 2017, avec le soutien de l'Ambassade du Royaume-Uni à Madagascar ainsi que de la Fondation pour les études et recherches sur le développement international (Ferdinand).

ACRONYMES

ARMP	Autorité de Régulation des Marchés Publics
CAO	Commission d'Appel d'Offres
CNM	Commission Nationale des Marchés publics
CRR	Comité de Règlement des Recours
CTD	Collectivité Territoriale Décentralisée
EPIC	Établissement Public à caractère Industriel et Commercial
PRMP	Personne Responsable des Marchés Publics
TVA	Taxe sur la Valeur Ajoutée
UGPM	Unité de Gestion de la Passation des Marchés

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OBJECTIFS ET RAISON-D'ÊTRE DU GUIDE

En 2015, ce sont près de 7 500 commandes publiques qui ont été effectuées pour la production de travaux, de prestations intellectuelles et de services et l'obtention de fournitures, d'après les statistiques de l'Autorité de Régulation des Marchés Publics (ARMP). Les entités publiques contractantes ont engagé 200 milliards d'ariary, soit environ 63 millions de dollars américains, dans le cadre de ces contrats durant l'année 2015, un montant représentant 0,6 % du produit intérieur brut du pays.

L'enquête *Corruption in Antananarivo's Public Services* (CAPS), réalisée par Transparency International – Initiative Madagascar en novembre 2014, a estimé que plus des deux tiers (69 %) des dirigeants d'entreprises soumissionnant à des marchés publics à Madagascar considèrent inéquitable le processus de passation des marchés dans leur secteur d'activité.

L'enquête 2015 sur les marchés publics de Transparency International – Initiative Madagascar réalisée entre septembre et décembre 2015 auprès de 436 propriétaires et dirigeants d'entreprises ayant remporté au moins un marché public en 2013 ou 2014, révèle quant à elle que s'assurer de l'obtention d'une commande publique exige le paiement d'un montant moyen correspondant à 25 % de la valeur du marché.

La faible application de la loi par les autorités compétentes mine la redevabilité des agents publics impliqués dans le processus de passation des marchés

publics. Par ailleurs, l'absence de confiance du secteur privé dans les mécanismes de plainte et de recours rend ces derniers largement inopérants. L'impunité dont bénéficient trop souvent les auteurs de corruption fragilise plus encore le processus de passation des marchés publics. La justice est défaillante, de même que les organismes en charge du contrôle de l'utilisation des fonds publics.

Face à ces nombreux dysfonctionnements, il est primordial que les citoyens exercent eux-mêmes un rôle de surveillance, parallèlement et de façon complémentaire à celui des institutions étatiques.

L'objectif de ce guide est de faciliter la compréhension par le public de la législation encadrant les marchés publics à Madagascar, de présenter les principes fondamentaux des marchés publics, en particulier celui de transparence, et de rappeler les mécanismes de prévention et de répression de la corruption applicables, notamment les sanctions pénales et administratives encourues pour des actes de corruption en lien avec les marchés publics.

Pour que la corruption cesse d'être une barrière au développement économique et social de Madagascar, il est impératif que l'ensemble des composantes de la société malagasy prenne pleinement conscience de leur rôle à jouer pour faire reculer ce fléau. À travers la réalisation de ce guide, Transparency International – Initiative Madagascar souhaite promouvoir cette action collective en favorisant une meilleure compréhension du public du cadre législatif des marchés publics.



LE CADRE LÉGISLATIF GÉNÉRAL RÉGISSANT LES MARCHÉS PUBLICS

La principale loi encadrant les marchés publics est la loi n°2004-009 du 26 juillet 2004 portant Code des Marchés Publics. Les différentes dispositions énumérées dans ce Code des Marchés Publics sont celles actuellement en vigueur à Madagascar.

Définitions

Les marchés publics

Article premier du Code des Marchés Publics (extrait)

Les marchés publics sont des contrats administratifs écrits conclus à titre onéreux avec des personnes publiques ou privées par des personnes morales de droit public.

Conclu par écrit et à titre onéreux (effectué contre paiement), un marché public est un contrat administratif entre un organisme public ayant des besoins en matière de travaux, de fournitures, de services ou de prestations intellectuelles et un opérateur économique public ou privé en mesure de les satisfaire, l'attributaire du marché. Tout fournisseur, prestataire ou entreprise peut ainsi se porter candidat s'il dispose des qualifications requises pour l'exécution des prestations faisant l'objet du marché.

Article 8 du Code des Marchés Publics (extrait)

Tout candidat à un marché public doit démontrer qu'il a la capacité juridique, technique et financière et l'expérience nécessaire pour exécuter les prestations, objet du marché.

Toutefois, le Code des Marchés Publics prévoit des motifs d'exclusion (article 9) notamment pour sanction liée au non-respect de la réglementation des marchés publics, une procédure de liquidation judiciaire ou encore l'absence de souscription aux obligations fiscales.

Objet des marchés publics

Lorsque l'objet principal d'un marché public est l'exécution de travaux de bâtiment ou de génie civil, il s'agit d'un marché de travaux. Un marché de fournitures porte quant à lui sur l'acquisition, la prise en crédit-bail, la location ou la location-vente de produits ou matériels. Un contrat ayant pour objet des prestations de service est appelé un marché de services. Enfin, un marché de prestations intellectuelles se distingue d'un marché de service par le fait que l'élément prédominant n'est pas physiquement quantifiable puisqu'il porte principalement sur les capacités intellectuelles (expertise, conseil, services d'assistance informatique, etc.).

Les commandes publiques peuvent être décomposées en plusieurs parties, appelées lots, comme le prévoit l'article 34 du Code des Marchés Publics, chaque lot faisant l'objet d'une attribution distincte. L'allotissement d'un marché suscite une plus large concurrence et donne la possibilité aux petites et moyennes entreprises d'accéder à la commande publique. Si le règlement de l'appel d'offres le permet, un candidat peut souscrire à plusieurs lots.

Article 34 du Code des Marchés Publics de 2004 (extrait)

Les prestations objet du marché peuvent être réparties en lots donnant lieu chacun à un marché distinct ou peuvent faire l'objet d'un marché unique.

L'acheteur public

L'organisme public donneur d'ordre, appelé « Autorité Contractante », peut être l'État ou l'un de ses établissements publics (Ministère, hôpital, etc.), une collectivité territoriale (Région, Commune, etc.) ou l'un de ses établissements publics.

Une société à participation majoritaire de l'État ainsi qu'une entité publique ou privée qui bénéficie d'un financement public ou qui gère un budget de l'État ou d'une collectivité publique sont également soumis à l'obligation de respecter les principes généraux régissant les marchés publics définis à l'article 4 du Code des Marchés Publics.

La Personne Responsable des Marchés Publics (PRMP) est la personne désignée par l'entité publique donneur d'ordre pour organiser, coordonner et conclure la procédure de passation du marché. Elle a plein pouvoir pour signer au nom de l'Autorité Contractante. La PRMP doit également assurer la gestion et le suivi de l'exécution de ces marchés.

Selon les dispositions de l'article 3 du décret n°2015-1094 portant détermination du statut et du mode de désignation de la Personne Responsable des Marchés Publics, la PRMP est désignée par le Chef d'Institution pour les institutions de l'État, le Ministre pour les départements ministériels, le Chef de l'Exécutif de la Collectivité pour les Collectivités Territoriales Décentralisées (CTD) et le Chef de l'Exécutif de l'Établissement Public dans le cas d'Établissements Publics.

La PRMP est placée sous l'autorité hiérarchique du premier responsable de l'Autorité Contractante, qui endosse le rôle de PRMP dans l'hypothèse où aucun délégué n'est désigné.

Sauf décision contraire de l'Autorité Contractante, la PRMP est désignée pour une durée d'un an renouvelable tacitement. Elle peut toutefois être révoquée à tout moment, notamment en cas de violation grave des dispositions du Code des Marchés Publics constatée par l'ARMP.

Afin de mener à bien la procédure de passation du marché, la PRMP dispose d'une Unité de Gestion de la Passation des Marchés (UGPM), laquelle est chargée de la définition des besoins jusqu'à l'attribution et l'approbation du marché en passant entre autres par la préparation des documents d'appel d'offres.

La Commission d'Appel d'Offres (CAO) quant à elle a pour attribution d'examiner les candidatures et d'évaluer les offres ou propositions reçues. Cette commission est composée de membres désignés par la PRMP qui en est le président.

La procédure de passation des marchés publics

Modes de dévolution des marchés publics

Il existe plusieurs modes d'identification de l'attributaire d'un marché public. Les trois principales sont l'appel d'offres ouvert, la consultation et l'achat direct.

L'appel d'offres ouvert

L'appel d'offres ouvert constitue la procédure de passation des marchés publics par défaut, dans le sens où l'ensemble des Autorités Contractantes soumises au Code des Marchés Publics est supposée, sauf exceptions, y avoir recours.

Dans le cadre d'un appel d'offres ouvert, l'Autorité Contractante exprime publiquement ses besoins (en travaux, en fourniture, en services ou en prestations intellectuelles) détaillés dans un cahier des charges et propose à tout fournisseur ou prestataire à même d'y répondre de lui soumettre une proposition chiffrée. L'Autorité Contractante choisit alors, sans négociations et sur la base de critères objectifs préalablement portés à la connaissance des candidats, l'offre évaluée la moins-disante (c'est-à-dire la moins onéreuse) parmi celles qui lui ont été soumises, à l'exception des offres éliminées car jugées techniquement insatisfaisantes.

Cette démarche permet à l'acheteur public de choisir le soumissionnaire à même de répondre à ses attentes et proposant le prix le plus avantageux.

Article 17 du Code des Marchés Publics de 2004 (extrait)

L'appel d'offres ouvert constitue le mode de dévolution des marchés publics auquel doivent recourir par principe tous les pouvoirs adjudicateurs soumis au présent Code. Il ne peut être dérogé à l'obligation de mise en œuvre d'une procédure d'appel d'offres ouvert que dans les seuls cas prévus aux articles 21 à 26 du présent Code et dans le respect des seuils prévus par voie réglementaire.

Un appel d'offres ouvert peut se dérouler en deux étapes comme le précise l'article 20 du Code des Marchés Publics.

Article 20 du Code des Marchés Publics de 2004

Dans le cas de marchés d'une grande complexité ou lorsque la Personne Responsable des Marchés Publics souhaite faire son choix sur la base de critères de performance et non de spécifications techniques détaillées, le marché peut faire l'objet d'une attribution en deux étapes.

Les candidats sont d'abord invités à remettre des propositions techniques, sans indication de prix, sur la base de principes généraux de conception ou de normes de performance, et sous réserve de précisions et d'ajustements ultérieurs d'ordre technique aussi bien que commercial.

Lors de la seconde étape, les candidats sont invités à présenter des propositions techniques définitives assorties de prix, sur la base du Dossier d'Appel d'Offres préalablement révisé par la Personne Responsable des Marchés Publics en fonction des observations individuellement soumises par les candidats et consignées par écrit.

La consultation

Lorsque la valeur, hors taxes sur la valeur ajoutée (TVA), du marché à attribuer est inférieure à un seuil réglementaire fixé en fonction de la nature du marché (voir section suivante), l'Autorité Contractante peut procéder à une consultation de prestataires ou fournisseurs, via un appel public à la concurrence qui peut être effectué par simple voie d'affichage.

Article 14 de l'arrêté n°7274/2016-MFB (extrait)

À cet effet, la Personne Responsable des Marchés Publics procède à un appel public à la concurrence sous forme d'affichage dans un endroit visible et accessible au public au bureau des services adjudicateurs, au bureau du contrôle financier, au bureau de l'Autorité de Régulation des Marchés Publics et/ou de la Commission des Marchés et au bureau de la Commune concernée.

L'appel public à la concurrence doit renseigner les candidats sur la nature et l'objet de la prestation, la date limite et le lieu de remise des offres ainsi que la description des éléments à inclure dans le prix et les critères d'évaluation. La commande est attribuée au soumissionnaire qui a proposé le prix le plus bas. Pour être valable, la consultation doit comparer les propositions d'au moins trois prestataires ou fournisseurs (article 24 du Code des Marchés Publics).

L'achat direct non soumis à des règles formelles de mise en concurrence

Les marchés passés par bons de commande sont exemptés de règles formelles de mise en concurrence, comme le stipule l'article 3 du Code des Marchés Publics. Ce mode de dévolution des marchés permet à l'acheteur public de procéder à un achat direct auprès du fournisseur ou prestataire de son choix par simple émission de bon de commande, sans aucune obligation de publicité ou de nombre minimal de candidats. Les marchés à bons de commande ne sont cependant applicables que pour des commandes publiques d'un montant inférieur à un seuil réglementaire fonction du type de marché (travaux, fournitures, prestations intellectuelles ou de services).

Sélection du mode d'attribution

La procédure appropriée pour la passation d'un marché dépend en partie de sa valeur globale. L'article 14 du Code des Marchés Publics de 2004 présente le mode de computation des seuils définissant les règles formelles de publicité et de mise en concurrence applicables en fonction de la valeur totale du marché.

Le calcul de la valeur du marché

L'estimation de la valeur globale du marché est du ressort de la PRMP, qui doit en faire une évaluation sincère et raisonnable. Toute tentative de fractionner artificiellement et abusivement les prestations dans le but d'échapper à l'application des règles formelles de mise en concurrence est sanctionnable (arrêté n°7275/2016/MFB).

Article 14 du Code des Marchés Publics de 2004 (extrait)

En ce qui concerne les travaux, est prise en compte la valeur globale des travaux se rapportant à une même opération portant sur un ou plusieurs ouvrages. [...]

En ce qui concerne les fournitures et les services, il est procédé à une estimation sincère de la valeur totale des fournitures ou des services qui peuvent raisonnablement être considérés comme homogènes soit en raison de leurs caractéristiques propres, soit parce qu'ils constituent une unité fonctionnelle. Pour les marchés d'une durée inférieure ou égale à un an, la valeur totale mentionnée ci-dessus est celle qui correspond aux besoins d'une année. [...]

En ce qui concerne les marchés comportant des lots, est prise en compte la valeur estimée de la totalité des lots.

Les seuils des marchés publics

Selon l'arrêté n°7275/2016/MFB précisant le mode de computation des seuils des marchés publics et fixant leurs montants (article 3), les seuils des marchés hors TVA exigeant un appel d'offres ouvert comme mode de passation sont fixés comme suit :

Mode de passation	Montant du seuil en Ariary				
	Travaux routiers		Travaux autres que routiers	Fournitures	Prestations de services
	Construction-réhabilitation	Entretien courant/périodique			
Appel d'offres ouvert	500 millions (nb : 1 milliard jusqu'en 2016)	500 millions	140 millions	80 millions	25 millions

À noter que l'arrêté n°7275/2016/MFB a abaissé le montant du seuil applicable aux marchés de travaux routiers de construction/réhabilitation, en vigueur depuis 2008 (arrêté n°13838/2008/ MFB), de 1 milliard d'ariary à 500 millions d'ariary.

Les seuils énumérés dans le précédent tableau sont non seulement applicables à l'État, aux Régions, aux Communes et à leurs Établissements Publics Administratifs (EPA) respectifs mais également aux Établissements Publics à caractère Industriel et Commercial (EPIC), aux Sociétés d'État et aux autres entités bénéficiant du concours financier de l'État.

Pour les marchés publics d'une valeur inférieure aux seuils pour lesquels une procédure d'appel d'offres ouvert est exigée, le choix du mode de passation est déterminé comme suit :

Mode de passation	Montant hors TVA du marché en Ariary				
	Travaux routiers		Travaux autres que routiers	Fournitures	Prestations de services
	Construction-réhabilitation	Entretien courant/périodique			
Consultation	< 500 millions		< 140 millions	< 80 millions	< 25 millions
Achat direct	< 7 millions		< 5 millions	< 1 million	< 1 million

Il est bien-sûr toujours possible pour l'Autorité Contractante de choisir l'appel d'offres ouvert comme mode d'attribution d'un marché public même si la valeur du marché est inférieure au seuil exigeant l'appel d'offres ouvert pour ce type de marché.

Conformément à l'article 26 du Code des Marchés Publics, les marchés de prestations intellectuelles sont attribués après mise en concurrence entre un maximum de cinq candidats pré-sélectionnés à la suite d'une invitation publique à soumettre des expressions d'intérêt.

Les procédures d'exception

Le Code des Marchés Publics prévoit des situations où les règles de mise en concurrence normalement exigées peuvent être dérogées. Les deux principales procédures d'exception sont l'appel d'offres restreint et le marché de gré à gré. Ces modes d'attribution de marchés publics sont systématiquement soumis à un contrôle *a priori* (c'est-à-dire antérieur à l'attribution du marché) par l'ARMP (arrêté 7275/2016/MFB).

L'appel d'offres restreint

Un appel d'offres peut être « restreint », par opposition à « ouvert ». Un appel d'offres est dit restreint lorsque les candidats pouvant y soumissionner, au nombre minimum de trois, sont préalablement sélectionnés par la PRMP. L'Autorité Contractante ne peut procéder à un appel d'offres restreint que dans certains cas spécifiques précisés dans l'article 21 du Code des Marchés Publics. L'arrêté n°7274/2016-MFB définit quant à lui les conditions d'invitation des candidats et de sélection de l'attributaire dans le cas d'un appel d'offres restreint.

Article 21 du Code des Marchés Publics de 2004 (extrait)

Il ne peut être procédé à un appel d'offres restreint que sur proposition de la Personne Responsable des Marchés Publics et après avis de l'Autorité de Régulation des Marchés Publics dans les cas suivants :

- *lorsque le montant estimé du marché est inférieur à un seuil fixé par voie réglementaire ;*
- *en cas d'urgence avérée ;*
- *lorsque les prestations objet du marché revêtent un caractère confidentiel ;*
- *lorsqu'il s'agit de faire exécuter des prestations en lieu et place d'un prestataire défaillant ;*
- *lorsque seul un petit nombre d'entreprises sont susceptibles d'exécuter le marché.*

Les marchés de gré à gré

Un marché de gré à gré est passé sans mise en concurrence préalable. L'Autorité Contractante peut ainsi négocier directement avec l'entité agréée de son choix. Une entité agréée est une « association de personnes physiques ou morales légalement constituée, reconnue et acceptée officiellement par les pouvoirs publics et dont l'activité principale est en rapport direct avec les besoins exprimés par l'Autorité Contractante. » (Arrêté n°7275/2016-MFB)

Le recours à la procédure de gré à gré est cependant encadré par des conditions spécifiques énumérées dans l'article 25 du Code des Marchés Publics de 2004. La passation d'un tel marché exige notamment l'élaboration par la PRMP d'un rapport justificatif préalable pour décision de la Commission Nationale des Marchés Publics (CNM). Ce rapport, à remettre sans délai à l'ARMP, explique le choix de l'Autorité Contractante de conclure le marché selon cette procédure. D'après l'arrêté n°7274/2016-MFB, l'ARMP doit être consultée de nouveau sur le projet de marché mentionnant le choix du titulaire et le montant du marché, sauf lorsque l'Autorité Contractante est une société d'État ou un EPIC, ces marchés étant déjà systématiquement soumis à un contrôle *a posteriori* (c'est-à-dire après l'attribution du marché).

Article 25 du Code des Marchés Publics de 2004 (extrait)

Il ne peut être passé de marchés de gré à gré que dans les cas suivants :

- 1° pour les marchés portant sur des prestations devant être tenues secrètes ;*
- 2° pour les marchés qui, après appel d'offres, n'ont fait l'objet d'aucune offre ou pour lesquels il n'a été proposé que des offres irrecevables ou inacceptables au sens de l'article 22 du présent Code, et sous réserve que les conditions initiales du marché concerné ne se trouvent pas modifiées.*
- 3° pour les marchés qui, après appel d'offres, ont fait l'objet d'un désistement immédiat du candidat retenu, et sous réserve que la seconde offre évaluée la moins-disante puisse être acceptée.*
- 4° pour les marchés pour lesquels l'urgence impérieuse résultant de circonstances imprévisibles pour l'Autorité Contractante n'est pas compatible avec les délais exigés par les procédures d'appel d'offres, et notamment lorsqu'il s'agit de faire exécuter des prestations en lieu et place d'un prestataire défaillant ou encore lorsqu'il est question de faire face à des situations d'urgence impérieuse relevant d'une catastrophe naturelle ou technologique.*

5° pour les marchés destinés à répondre à des besoins qui, pour des raisons tenant à la détention d'un droit d'exclusivité, ne peuvent être satisfaits que par un prestataire déterminé.

6° pour les prestations dont, en raison de considérations économiques ou sociales, l'exécution peut être confiée à une entité agréée, à condition que le montant estimé de ces prestations soit inférieur à un seuil fixé par voie réglementaire.

7° pour des prestations qui complètent celles ayant précédemment fait l'objet d'un premier marché exécutées par le même titulaire. [...]

L'arrêté n°7275/2016-MFB réduit les possibilités de recours au gré à gré, par rapport aux conditions prescrites dans le Code des Marchés Publics de 2004. Cet arrêté interdit en effet la procédure de gré à gré pour des marchés de travaux routiers d'une valeur égale ou supérieure à 25 000 000 ariary, pour les marchés de travaux autres que routiers d'une valeur égale ou supérieure à 15 000 000 ariary et pour les marchés de fournitures et services d'une valeur égale ou supérieure à 5 000 000 ariary.



LES DISPOSITIONS LÉGALES RELATIVES À LA TRANSPARENCE DES MARCHÉS PUBLICS

Les principes fondamentaux

Une entité publique qui souhaite réaliser des travaux, acquérir des fournitures ou solliciter des services doit se conformer aux principes généraux régissant les marchés publics. L'article 4 du Code des Marchés Publics de 2004 énonce ces principes fondamentaux :

Article 4 du Code des Marchés Publics de 2004 (extrait)

Quel que soit leur montant, les marchés publics respectent les principes de liberté d'accès à la commande publique, d'égalité de traitement des candidats et de transparence des procédures.

Quelles que soient la procédure choisie et la valeur financière du marché, ces principes sont opposables à tous les acheteurs publics.

La liberté d'accès à la commande publique

En accord avec le principe de concurrence, tout opérateur économique qualifié, répondant aux critères requis par l'acheteur public, peut soumettre sa candidature à l'attribution d'un marché. Un élément indispensable à une mise en

concurrence effective est bien-sûr la publicité dans la mesure où cette dernière permet aux prestataires et fournisseurs potentiels d'avoir connaissance de l'existence du marché.

La qualification du soumissionnaire est examinée indépendamment du contenu de son offre. Dans le cas d'un appel d'offres ouvert, une phase de pré-qualification peut être introduite afin d'écarter les soumissionnaires jugés inaptes à réaliser le marché. L'aptitude du candidat est évaluée sur la base des ressources humaines, matérielles et financières dont il dispose ainsi qu'à son expérience passée dans l'exécution de prestations similaires.

La liberté d'accès à la commande publique ne s'applique pas lorsque le prestataire ou fournisseur fait l'objet d'une ou plusieurs interdictions de soumissionner citées dans l'article 9 du Code des Marchés Publics.

L'égalité de traitement des candidats

Ce principe interdit toute discrimination vis-à-vis des soumissionnaires. Il implique que tous les candidats intéressés par un marché doivent être traités de la même manière, disposer des mêmes informations et être soumis aux mêmes règles. Cette situation d'égalité s'étend à tous les stades de la procédure de passation du marché. Lorsque l'acheteur public définit les conditions de dépôt des offres, il est tenu de fournir aux candidats les mêmes informations. Si un des soumissionnaires demande des éclaircissements sur certains points, l'Autorité Contractante doit en faire profiter tous les candidats. Toute modification apportée au cahier des charges au cours de la procédure doit obligatoirement être signalée aux personnes ou aux entités ayant retiré le cahier des charges initial. L'Autorité Contractante doit choisir l'attributaire du marché public en toute objectivité, sans *a priori*.

La transparence des procédures

Le principe de transparence implique que l'acheteur public garantisse une publicité intelligible d'un niveau adéquat pour tout projet de marché afin d'assurer une véritable mise en concurrence. Cette exigence de transparence découle de l'idée que les règles régissant la consultation sont établies dès le lancement de la procédure ou à l'ouverture du marché. Il incombe ainsi à l'Autorité Contractante de :

- Fournir aux soumissionnaires potentiels toute information utile sur les critères d'attribution du marché et sur les conditions de mise en œuvre du projet.
- Rédiger de manière claire les documents de la consultation et garantir une totale impartialité. L'acheteur public ne doit en aucun cas spécifier des conditions superflues dans le but d'avantager un candidat.
- Conserver tous les documents qui ont mené à la sélection d'un candidat et de son offre. L'organisme donneur d'ordre doit garder une trace de tous ses échanges avec les soumissionnaires.
- Sélectionner l'offre la plus avantageuse et justifier ce choix.
- Expliquer les raisons qui ont motivé le rejet des autres candidatures.
- Publier un avis d'attribution.

Ce principe de transparence impose par ailleurs à tout acheteur public l'obligation de publier la liste des marchés qu'il envisage de conclure durant l'année calendaire suivante.

Le Dossier d'Appel d'Offres

Le Dossier d'Appel d'Offres est un document émis par l'Autorité Contractante par le biais de la PRMP dans lequel sont précisés entre autres l'avis d'appel d'offres, les instructions à l'intention des soumissionnaires ou encore les données particulières de l'appel d'offres.

Le Dossier d'Appel d'Offres est appelé Dossier de consultation pour les marchés de prestations intellectuelles.

Article 8 du Code des Marchés Publics de 2004 (extrait)

La Personne Responsable des Marchés Publics précise dans le Dossier d'Appel d'Offres les critères de qualification et les renseignements et documents que doit produire le candidat à l'appui de ces critères.

L'ouverture des plis

Les opérateurs économiques intéressés par un marché transmettent leur offre sous pli fermé avant la date et l'heure limites de remise des offres. Les règles légales régissant l'ouverture des plis sont énoncées dans la section III du Code des Marchés Publics de 2004.

Article 18 du Code des Marchés Publics de 2004 (extrait)

Pour soumissionner, les candidats sont tenus d'établir un pli remis à l'Autorité Contractante par tout moyen permettant de déterminer de façon certaine la date et l'heure de leur réception et de garantir la confidentialité des éléments qu'ils contiennent.

À l'expiration des date et heure de remise des offres, il incombe à la PRMP d'ouvrir les plis de soumission. Les soumissions reçues après la date et heure limites de remise des offres ne sont pas recevables.

Article 18 du Code des Marchés Publics de 2004 (extrait)

La séance d'ouverture des plis contenant les offres a lieu à la date limite fixée pour le dépôt des offres. La Personne Responsable des Marchés Publics, en présence des candidats ou de leurs représentants qui souhaitent être présents, ouvre les enveloppes contenant les offres. Le nom de chaque candidat, le montant de chaque offre et de chaque variante, et le cas échéant le montant des rabais proposés, sont lus à haute voix ; la présence ou l'absence de garantie d'offre est également mentionnée.

Ces renseignements sont consignés dans le procès-verbal de la séance d'ouverture qui est contresigné par toutes les personnes présentes et publié par la Personne Responsable des Marchés Publics. Ce procès-verbal est remis par la suite à tous les candidats.

L'examen des offres

L'examen des offres ne doit pas être discriminatoire et doit se faire en toute objectivité et sans parti pris. L'analyse des offres prend en compte les critères préalablement définis et précisés dans le Dossier d'Appel d'Offres ou le Dossier de consultation. L'article 12 du Code des Marchés Publics énonce les modalités de sélection des offres.

Article 12 du Code des Marchés Publics de 2004 (extrait)

L'offre évaluée la moins disante est déterminée sur la base du prix et, le cas échéant, d'autres critères, tels que les coûts d'utilisation, délai d'exécution, calendrier de paiement et standardisation, qui doivent être énumérés dans le Dossier d'Appel d'Offres (DAO) ou d'invitation et être exprimés en termes monétaires ou sous la forme de critères éliminatoires.

La PRMP choisit l'offre la moins-disante après élimination des offres jugées non-conformes, sur la base d'un avis rendu par la CAO, qui doit statuer dans un délai ne dépassant pas vingt jours pour les marchés des travaux et fournitures, et trente jours pour les marchés de services et de prestations intellectuelles, sous réserve du respect du calendrier de passation de marché (article 16 du décret n°2006-344 du 30 mai 2006 portant constitution, composition, attribution et fonctionnement de la CAO).

Si la PRMP juge qu'une offre financière est anormalement haute ou basse, elle peut demander par écrit au candidat concerné des précisions supplémentaires. Après analyse et vérification, elle peut prendre la décision de rejeter l'offre, après avis de la CAO.

Lorsque la PRMP a sélectionné l'offre jugée la plus profitable pour l'acheteur public, elle doit en informer les candidats n'ayant pas été retenus. Le marché débute à la date de notification du marché au prestataire ou fournisseur sélectionné.

Article 27 du Code des Marchés Publics de 2004 (extrait)

La Personne Responsable des Marchés Publics communique, dans un délai de 20 jours à compter de la réception d'une demande écrite, à tout candidat écarté les motifs du rejet de sa candidature ou de son offre, les caractéristiques et les avantages relatifs à l'offre retenue ainsi que le montant du marché attribué et le nom de l'attributaire.

La Personne Responsable des Marchés Publics doit informer également dans les plus brefs délais les candidats des motifs qui l'ont conduit à ne pas attribuer ou notifier le marché ou à recommencer la procédure. Sur demande écrite des candidats, la réponse est écrite.

Dans le cas où la PRMP ne retient aucun candidat, la procédure de passation du marché public est déclarée infructueuse. Cette décision peut être motivée par plusieurs raisons énumérées dans l'article 23 de l'arrêté N°7274/2016-MFB :

- Lorsqu'aucune offre n'a été remise à l'expiration de la date limite de remise des offres ;
- Lorsque l'examen des offres laisse apparaître qu'aucune d'entre elles n'est recevable ni acceptable ;
- Lorsque, dans le cadre d'un marché de prestations intellectuelles, aucune ou une seule proposition est recevable.
- Lorsque, dans le cadre d'un appel d'offres restreint, une seule offre a été remise.

Les caractères irrecevable et inacceptable d'une offre sont précisés dans l'article 23 de l'arrêté N°7274/2016-MFB.

La PRMP avise immédiatement tous les candidats de la procédure infructueuse. Elle peut alors procéder soit à un nouvel appel d'offres, soit, si les conditions initiales du marché ne sont pas modifiables, à un marché de gré à gré passé conformément à l'article 25 du Code des Marchés Publics. La décision de déclarer une procédure infructueuse ne peut intervenir après la décision d'attribution de marché.

L'avis d'attribution

Un avis d'attribution est un avis publié par la PRMP dont l'objet est de donner des informations sur un marché qui vient d'être attribué. Cet avis d'attribution est publié dans le journal quotidien de grande diffusion qui a pris en charge la publication de l'avis d'appel public à la concurrence.

Article 55 du Code des Marchés Publics de 2004 (extrait)

La Personne Responsable des Marchés Publics envoie, pour publication dans un délai de trente jours à compter de la notification du marché, un avis d'attribution. [...] Les avis d'attribution sont publiés dans les mêmes conditions que les avis de publicité.

Lorsque le mode de passation du marché est la consultation, la PRMP doit notifier par écrit le résultat de la mise en concurrence à chacun des candidats, indépendamment de la publication de l'avis d'attribution (article 16 de l'arrêté n°7274/2016-MFB).

La publicité

La publicité permet à l'acheteur public d'assurer la mise en concurrence effective mais aussi de trouver l'offre la plus avantageuse répondant à ses besoins. Il appartient à la PRMP de pouvoir justifier de l'effectivité et du respect de la réglementation concernant cette publicité.

L'avis général de passation des marchés

En accord avec l'article 15 du Code des Marchés Publics, l'Autorité Contractante doit tout d'abord publier chaque année un avis général de passation des marchés

au plus tard le 30 octobre de chaque année (circulaire 02-ARMP/DG/CRR/06). Cet avis recense l'ensemble des marchés publics que l'Autorité Contractante prévoit d'allouer par appel d'offres durant l'exercice budgétaire suivant. Les avis généraux de passation des marchés doivent être publiés dans le Journal des marchés publics ainsi que dans au moins un quotidien de grande diffusion dont la liste a été fixée par la décision n°001/2006/MEFB/ARMP. Les avis généraux de l'État et de ses établissements publics doivent également être publiés au Journal officiel de la République de Madagascar. Ces avis généraux de passation des marchés sont soumis au contrôle et au suivi de l'ARMP.

L'avis spécifique d'appel public à la concurrence

Chaque marché public passé par appel d'offres est ensuite précédé d'un avis spécifique d'appel public à la concurrence établi conformément à un modèle type fixé par voie réglementaire. L'avis spécifique renseigne les candidats sur les modalités de la prestation et mentionne les éventuels frais de retrait du Dossier d'Appel d'Offres.

Pour les appels d'offres ouverts nationaux, la publication de l'avis spécifique d'appel public à la concurrence doit être effectuée au minimum trente jours avant la date limite de remise des offres. Pour les appels d'offres ouverts internationaux, ce délai est porté à quarante-cinq jours (article 5 de l'arrêté n°7274/2016-MFB).

Les avis spécifiques d'appel public à la concurrence sont publiés dans les mêmes conditions que les avis généraux. Pour les appels d'offres à portée internationale, les avis spécifiques d'appel public à la concurrence sont également insérés dans un journal à diffusion internationale.

Le cas particulier des prestations intellectuelles

Les prestations intellectuelles d'un montant égal ou supérieur à 25 millions d'ariary doivent respecter un délai minimum de trente jours entre l'appel à manifestation d'intérêts et la date limite de remise des propositions (arrêté n°7275/2016/MFB). Les prestations d'un montant inférieur sont dispensées de formalités de publicité par voie de presse. Dans ce cas, la PRMP peut émettre l'appel à manifestation d'intérêts par simple voie d'affichage pour une durée minimale de dix jours.

Les règles de publicité pour une consultation

Dans le cas d'une consultation de fournisseurs ou de prestataires, la publicité peut être effectuée par voie d'affichage au minimum dix jours avant la date de remise des propositions (arrêté n°7275/2016/MFB).

Toutefois, si la PRMP le juge pertinent, l'appel public à la concurrence peut être réalisé par voie de presse selon les modalités prévues par l'article 15 du Code des Marchés Publics. Par ailleurs, l'avis d'appel public à la concurrence doit impérativement faire l'objet d'une publication sur le site Web de l'ARMP et celui du Ministère des Finances et du Budget, simultanément à la publication par voie d'affichage ou de presse (arrêté n°7274/2016-MFB).

Les règles de publicité pour un achat direct

N'étant pas soumise aux règles formelles de mise en concurrence, la procédure d'achat direct n'est pas tenue aux formalités de publicité. Dans ce cas, la PRMP consulte simplement le ou les prestataires et fournisseurs de son choix.

Les règles de publicité pour les procédures d'exception

Puisqu'un appel d'offres restreint se caractérise par le fait que seuls sont autorisés à y soumissionner les candidats qui y ont été invités expressément par l'Autorité Contractante, aucune règle formelle de publicité ne s'applique à ce type de marché.

L'Autorité Contractante sélectionne l'attributaire du marché à partir d'une liste de candidats préalablement établie, dans les conditions fixées par l'article 8 de l'arrêté n°7274/2016-MFB.

Les marchés de gré à gré sont également dispensés de formalités de publicité, puisqu'ils concernent une négociation directe entre l'Autorité Contractante et l'entité agréée de son choix.

La confidentialité

Certains aspects de la procédure de passation de marchés public doivent rester confidentiels, ceci afin de ne pas dévoiler d'informations qui pourraient porter préjudice aux intérêts commerciaux légitimes des soumissionnaires.

L'article 27 du Code des Marchés Publics interdit ainsi toute communication par la PRMP de ce type d'informations privées.

Le décret n°2006-344 du 30 mai 2006 portant constitution, composition, attribution et fonctionnement de la CAO exige de ses membres, dans son article 18, une « confidentialité absolue à l'égard des informations non publiques dont ils disposent ainsi qu'aux arguments échangés lors des délibérations ». Tout manquement à ce devoir entraîne l'interdiction pour le contrevenant de participer à une CAO et d'une façon plus générale de prendre part au processus de la commande publique pendant une durée minimum de douze mois.

Pour les mêmes raisons, les soumissions aux appels d'offres doivent être remises à l'Autorité Contractante sous pli fermé, assurant la confidentialité des éléments qu'elles contiennent. Cette démarche vise également à limiter les risques d'entente frauduleuse entre soumissionnaires.

Lorsque l'objet même du marché est secret, c'est l'ensemble de la procédure de la commande publique qui devient confidentiel. Dans ce cas, l'Autorité Contractante peut, si elle obtient un avis favorable de l'ARMP, procéder à un appel d'offres restreint ou recourir à une procédure de gré à gré pour identifier le prestataire ou le fournisseur.

Autres dispositions importantes

Les procédures déclarées sans suite

Conformément à l'article 17 du Code des Marchés Publics, dont les dispositions sont précisées par l'arrêté 7274/2016-MFB, la PRMP peut à tout moment avant la signature du marché et pour des motifs d'intérêt général, arrêter avant son terme une procédure de passation de marchés. Dans ce cas, la procédure est déclarée sans suite.

Le prix des marchés publics

Les marchés publics sont, sauf cas exceptionnels explicités dans l'article 39 du Code des Marchés Publics, conclus à prix initial définitif, sur la base de la proposition financière du soumissionnaire sélectionné.

Un marché à prix ferme possède des conditions financières non amendables durant la phase d'exécution du marché. À l'inverse, un marché à prix révisable

peut être modifié après la date de notification du marché aux conditions expressément prévues par une clause de révision des prix du contrat.

L'avenant au contrat

Un avenant est un écrit attestant la volonté par les deux parties au marché de modifier une ou plusieurs dispositions déterminantes du contrat initial. La passation d'un avenant est nécessaire en cas de modification du volume de la prestation ou du prix du marché. Les avenants sont systématiquement soumis au contrôle *a priori* de l'ARMP.

La résiliation

Un marché public peut faire l'objet d'une résiliation par l'une des deux parties au marché, après mise en demeure motivée, pour un ou plusieurs motifs explicités dans l'article 51 du Code des Marchés Publics. Si la résiliation est aux torts de l'Autorité Contractante, le prestataire ou fournisseur peut exiger une indemnité de résiliation, qui doit lui être versé sous trois mois.



LES MÉCANISMES DE PRÉVENTION ET DE RÉPRESSION DE LA CORRUPTION

L'Autorité de Régulation des Marchés Publics

L'Autorité de Régulation des Marchés Publics (ARMP), instituée par application des articles 4, 53 et 54 du Code des Marchés Publics de 2004, est un Établissement public à caractère administratif (EPA) dont les missions sont de réguler, contrôler, suivre et évaluer le système des marchés publics.

Cet organisme public, sous tutelle budgétaire et administrative du Ministère des Finances et du Budget, assure que les principes de libre accès à la commande publique, d'égalité de traitement des candidats et de transparence des procédures sont effectivement appliqués. L'une de ses responsabilités est de déceler les violations de procédures concernant les marchés publics. L'ARMP est également chargée de l'élaboration et de la mise en œuvre des mesures de prévention et de lutte contre la corruption dans les marchés publics.

Le Conseil d'Administration de l'ARMP est composé d'un représentant du Président de la République, un représentant du Premier Ministre, six représentants ministériels, deux représentants du secteur privé, deux représentants de la société civile et un représentant de son personnel (décret n°2005-215 portant organisation et fonctionnement de l'ARMP). La Direction Générale de l'ARMP assure l'exécution des fonctions qui lui sont dévolues.

L'ARMP est constituée de deux entités distinctes indépendantes, à savoir le Comité de Règlement des Recours (CRR) et la Commission Nationale des Marchés Publics

(CNM). Le décret N°2005-215 portant organisation et fonctionnement de l'Autorité de Régulation des Marchés Publics, modifié et complété par les décrets n°2014-045 et n°2016-697, énonce les attributions, les missions et le fonctionnement de ces deux entités techniques de l'ARMP.

Le Comité de Réglementation et de Recours (CRR)

Composé d'une Section des Normes et Réglementation et d'une Section de Recours, le Comité de Réglementation et de Recours propose les textes de réglementation des marchés publics et assure le règlement des litiges et différends relatifs à la commande publique. Il comprend des représentants de l'administration, du secteur privé et de la société civile.

La Commission Nationale des Marchés Publics (CNM)

La Commission Nationale des Marchés est chargée des fonctions de contrôle et d'assistance technique sur l'ensemble du processus de passation des marchés publics. Cette commission se pose en rempart contre les abus et irrégularités qui peuvent survenir lors d'une procédure de passation de marché public. La CNM rend compte au Directeur Général de l'ARMP des irrégularités constatées dans le cadre de ses activités, qui les transmet éventuellement aux organes d'inspection et de contrôles compétents.

Les procédures de contrôle

L'une des missions fondamentales de l'ARMP est de vérifier le respect des procédures de passation des marchés publics. Pour ce faire, l'ARMP possède des prérogatives en matière de contrôle des décisions et actions prises par les PRMP.

Le contrôle *a priori*

Le contrôle *a priori* est l'examen par l'ARMP des propositions et décisions d'attribution de marchés prises par la PRMP au nom de l'Autorité Contractante, avant que celles-ci ne soient exécutoires.

Les marchés par appel d'offres ouverts dont le montant estimé hors taxes est supérieur à un seuil défini par l'arrêté n°7275/2016/MFB sont systématiquement soumis à un contrôle *a priori* de la CNM. Ces seuils de contrôle *a priori* sont les suivants :

Montant du seuil de contrôle <i>a priori</i> en Ariary					
Mode de passation	Travaux routiers		Travaux autres que routiers	Fournitures	Prestations de services et intellectuelles
	Construction-réhabilitation	Entretien courant/périodique			
Appel d'offres ouvert	5 milliards	2 milliards	500 millions	200 millions	100 millions

En accord avec l'article 5 de l'arrêté n°7275/2016/MFB, l'appel d'offres restreint, le marché de gré à gré et les avenants sont obligatoirement soumis au contrôle *a priori* sans considération de seuil.

Le contrôle *a posteriori*

Le contrôle *a posteriori* est l'évaluation des conditions de passation des marchés dès lors que la procédure de passation de ces marchés est conclue.

Article 3 de l'arrêté n°16869/2008/MFB

Le contrôle *a posteriori* consiste à :

- vérifier la stratégie de planification et de programmation de la passation des marchés,
- déterminer la conformité des procédures, du processus et de la réglementation de passation des marchés,
- évaluer la capacité, l'opérationnalité et le fonctionnement des organes de la commande publique,
- analyser la qualité et la fiabilité du système de classement et d'archivage des documents par rapport aux normes requises,
- faire une appréciation générale sur la conformité des pratiques avec la législation et la réglementation en vigueur,
- vérifier la régularité et la conformité de chaque opération à tous les niveaux du processus.

Comme pour le contrôle *a priori*, les entités publiques soumises au contrôle *a posteriori* sont l'État et ses Établissements Publics, les CTD et leurs Établissements Publics respectifs, les sociétés à participation majoritaire de l'État et toute entité publique ou privée bénéficiant du concours financier de l'État.

Le contrôle *a posteriori* est exerçable sur tous les marchés d'un montant inférieur aux seuils de contrôle *a priori*. Il convient également de noter que

les marchés de gré à gré sont soumis au contrôle *a posteriori* de façon systématique.

L'arrêté n°16869/2008/MFB explicite les modalités de contrôle *a posteriori* exercées par la CNM.

Le Directeur Général de l'ARMP fixe le programme des travaux de contrôle sur proposition de la CNM, mais peut s'affranchir de ce programme pour ordonner toute autre mission de contrôle *a posteriori* qu'il juge nécessaire. Les représentants des Autorités contractantes peuvent aussi saisir l'ARMP pour des missions de contrôle *a posteriori* au niveau de leur entité.

Par ordre de mission formel, le Directeur Général de l'ARMP prescrit à la CNM ou à une autre entité mandatée la réalisation des missions de contrôle *a posteriori*. Ces derniers disposent d'un droit d'investigation, sans restriction.

Les irrégularités sérieuses relevées par les contrôleurs de la CNM sont portées sans délai à la connaissance du Directeur Général de l'ARMP ainsi qu'à l'entité ayant pouvoir disciplinaire sur l'Autorité Contractante objet du contrôle irrégulier. Le Directeur Général de l'ARMP se charge ensuite de saisir les autorités compétentes pour les irrégularités constatées.

Les missions de contrôle *a posteriori* doivent faire l'objet d'un rapport des contrôleurs de la CNM au Directeur Général de l'ARMP, présentant les conclusions de la mission ainsi que des recommandations d'amélioration du système de passation des marchés publics.

Les recours

Tout candidat à une procédure de passation de marchés qui voit son offre rejetée peut choisir entre plusieurs possibilités de recours auprès de l'Autorité Contractante ou du CRR s'il s'estime lésé. À noter que le CRR peut également être saisi directement par l'Autorité Contractante.

Le recours gracieux

Le candidat évincé peut adresser une demande de recours gracieux à la PRMP, avec pour objectif l'annulation de la procédure ou la résiliation du marché. Le plaignant doit alors fournir des arguments de droit ou de fait pour justifier sa demande. Une absence de réponse de la PRMP dans un délai de dix jours signifie le rejet implicite du recours gracieux.

Article 56 du Code des Marchés Publics de 2004 (extrait)

Tout candidat à une procédure d'attribution d'un marché est habilité à saisir la personne responsable dudit marché d'un recours gracieux exposant ses griefs sur la procédure suivie.

Le recours en attribution

Le référé précontractuel

Intervenant avant la signature du marché, le référé précontractuel donne la possibilité à un candidat de contester l'ensemble des phases de la procédure de passation du marché, depuis le lancement de l'appel d'offres jusqu'à la publication de son résultat. Si les soumissionnaires évincés d'une passation de marchés constatent que la procédure ne s'est pas déroulée normalement, pour cause de non-respect des obligations de publicité ou de mise en concurrence par exemple, ils sont en droit de saisir le tribunal administratif territorialement compétent (article 57 du Code des Marchés Publics).

L'article 27 du Code des Marchés Publics édicte à l'acheteur public un délai de dix jours entre la notification du rejet et la date de signature du marché avec le soumissionnaire sélectionné afin de donner aux candidats évincés le temps nécessaire pour préparer un recours, s'ils s'estiment lésés. Le requérant doit bien évidemment apporter des preuves attestant que la procédure suivie par l'acheteur public lui a porté préjudice.

À noter toutefois que le choix du mode de passation du marché ne peut être contesté, de même que la décision de l'Autorité Contractante de rejeter toutes les offres ou de ne pas donner suite à une manifestation d'intérêt ou à un appel d'offres (décret n°2005-215).

Le recours aux fins d'indemnisation

Le recours en indemnisation porte sur les demandes en dommages intérêts relatives à l'attribution irrégulière d'un marché, postérieurement à la signature du contrat. Le requérant, le candidat supposément irrégulièrement évincé, doit déposer une demande auprès du CRR dans un délai de vingt jours à compter de la date de signature du contrat. Il doit prouver dans le recours en indemnisation qu'il avait une possibilité de remporter le marché. S'il arrive à démontrer que c'est effectivement le cas, il peut obtenir un remboursement des frais engagés lors de la préparation de son offre.

Article 57 du Code des Marchés Publics de 2004 (extrait)

Sans préjudice des actions pénales que l'irrégularité des conditions d'attribution d'un marché public peut justifier, le candidat irrégulièrement évincé peut, postérieurement à la signature du marché, saisir le Tribunal Administratif territorialement compétent et, dans l'attente de la prise en charge de leurs compétences par les tribunaux administratifs, l'Autorité de Régulation des Marchés Publics, d'une demande d'indemnité au titre du préjudice direct et certain que lui aura fait subir l'attribution irrégulière du marché à l'exclusion de perte de profits futurs.

Le recours en exécution

Un recours contentieux au titre d'exécution du marché peut également être formulé par le titulaire du marché auprès du tribunal administratif territorialement compétent, selon l'article 59 du Code des Marchés Publics.

Le Code d'éthique des marchés publics

Le décret n°2006-343 du 30 mai 2006 instaure le Code d'éthique des marchés publics, applicable à tout organe de la commande publique (PRMP, UGPM, CAO, ARMP), à leurs membres et personnels, ainsi qu'aux soumissionnaires et à tout autre individu ou organisme intervenant dans la préparation, la passation et l'exécution des marchés publics.

Le Code d'éthique des marchés publics liste les obligations éthiques de ces intervenants ainsi que les sanctions encourues en cas de violation de ces obligations. L'article 17 exige ainsi de tout candidat et titulaire d'un marché public le renoncement à toute pratique de corruption.

Article 17 du Code d'éthique des marchés publics

Tout candidat et tout titulaire des marchés publics s'engagent expressément à renoncer à toute pratique de corruption passive ou active ou de trafic d'influence. À cet effet, ils s'interdisent de promettre, offrir ou accorder, directement ou par personne interposée, un avantage indu de quelque nature que ce soit au personnel des organes de la commande publique aux fins qu'il accomplisse ou s'abstienne d'accomplir un acte en violation de ses obligations, telles que définies par le présent Code.

Outre les sanctions pénales applicables, un soumissionnaire qui ne respecterait pas les dispositions du Code d'éthique s'expose à une exclusion temporaire de la commande publique pour une période de cinq ans maximum. Par ailleurs, un marché obtenu en infraction avec le Code d'éthique des marchés publics peut être résilié. La sanction disciplinaire maximale est prévue pour le personnel des organes de la commande publique en cas de manquement aux dispositions du Code d'éthique. Si l'infraction est pénalement sanctionnée, des poursuites immédiates sont engagées, en vertu de l'article 21 du Code d'éthique des marchés publics.

La procédure d'exclusion des marchés publics

L'article 17 de la loi n°2004-030 du 9 septembre 2004 sur la lutte contre la corruption prévoit que tout contrat, licence, permis ou autorisation obtenu par la corruption est « de plein droit nul et de nul effet ». Si les faits de corruption sont prouvés, toute entreprise titulaire d'un contrat, licence, permis ou autorisation obtenue par ce biais doit être privée du droit de soumissionner aux marchés publics.

L'ARMP, via la CNM, peut prononcer l'exclusion temporaire ou définitive des personnes physiques ou morales ayant commis une infraction au Code pénal au motif d'atteinte à la réglementation des marchés publics. L'ARMP doit par ailleurs produire et maintenir le fichier des entrepreneurs, fournisseurs et prestataires de service ayant fait l'objet de défaillances, de sanctions ou de mesures d'exclusion.

Les sanctions administratives pour violation du Code des Marchés Publics

Outre l'exclusion des marchés publics pouvant être prononcée contre des fournisseurs et prestataires ayant contrevenu aux dispositions du Code des Marchés Publics, des sanctions disciplinaires sont prévues à l'égard des agents publics responsables des mêmes manquements, sans préjudice de sanctions pénales additionnelles.

Le décret n°2015/1094 portant détermination du statut et du mode de désignation de la Personne Responsable des Marchés Publics prévoit ainsi, dans son article 12, des sanctions en Conseil de Discipline Budgétaire et Financière pour les PRMP ayant commis des actes ou pris des décisions en contradiction avec le Code des Marchés Publics.

La pénalisation de la corruption

Les faits de corruption dans le cadre de marchés publics sont punissables par la loi. Le Code pénal prévoit plusieurs dispositions visant à réprimer les actes de corruption pouvant mener à une attribution biaisée de marchés publics au profit d'un soumissionnaire corrupteur.

La corruption active, le fait de proposer un pot-de-vin ou un avantage à un agent public dans le but d'influencer sa prise de décision, est punissable dans les conditions définies dans l'article 177.1 du Code pénal.

Article 8 de la loi n°2004 - 030 du 9 septembre 2004 sur la lutte contre la corruption (extrait)

Sera puni de deux ans à dix ans d'emprisonnement et d'une amende de 5 millions de Fmg ou 1 tapitrisa Ariary à un milliard de Fmg ou 200 tapitrisa Ariary ou de l'une de ces deux peines seulement, le fait de proposer sans droit, directement ou par personne interposée des offres, promesses, dons, présents ou avantages quelconques pour obtenir d'une personne dépositaire de l'autorité publique, chargée d'une mission de service public ou investie d'un mandat public électif :

1° soit qu'elle accomplisse ou s'abstienne d'accomplir un acte de sa fonction, de sa mission ou de son mandat ;

2° soit qu'elle facilite par sa fonction, sa mission ou son mandat l'accomplissement ou non de cet acte ;

3° soit qu'elle abuse de son influence réelle ou supposée en vue de faire obtenir d'une autorité ou d'une administration publique des distinctions, emplois, marchés ou toute autre décision favorable.

La corruption passive, qui consiste à répondre favorablement à la sollicitation d'un agent public portant sur un pot-de-vin ou avantage est répréhensible au même titre que la corruption active.

Article 8 de la loi n°2004 - 030 du 9 septembre 2004 sur la lutte contre la corruption (extrait)

Sera puni des mêmes peines le fait de céder à une personne dépositaire de l'autorité publique, chargée d'une mission de service public ou investie d'un mandat public électif qui sollicite, sans droit, directement ou par personne interposée, des offres, promesses, dons, présents ou avantages quelconques pour accomplir ou s'abstenir d'accomplir des actes visés au 1° et 2°, ou pour abuser de son influence dans les conditions visées au 3°.

Le trafic d'influence, un délit analogue à la corruption active et passive s'appliquant particulièrement au cas des marchés publics, est punissable d'après les dispositions contenues dans l'article 179 du Code pénal.

Article 9 de la loi n°2004 - 030 du 9 septembre 2004 sur la lutte contre la corruption (extrait)

Sera puni d'un emprisonnement de un an à cinq ans et d'une amende de 5 millions de Fmg ou 1 tapitrisa Ariary à 500 millions de Fmg ou 100 tapitrisa Ariary ou de l'une de ces deux peines seulement, le fait par quiconque, de solliciter ou d'agréer, directement ou par personne interposée, des offres, promesses, dons, présents ou avantages quelconques pour abuser de son influence réelle ou supposée en vue de faire obtenir d'une autorité ou d'une administration publique des distinctions, décorations, emplois, marchés ou toute autre décision favorable.

De même, le Code pénal, dans son article 175.2, prévoit une sanction pénale à l'encontre de tout agent public reconnu coupable d'avoir favorisé ou tenté de favoriser de façon injustifiée un ou plusieurs soumissionnaires dans le cadre d'un marché public.

Article 6 de la loi n°2004 - 030 du 9 septembre 2004 sur la lutte contre la corruption (extrait)

Sera puni de trois mois à un an d'emprisonnement et d'une amende de 1 000 000 à 20 000 000 Ariary, ou de l'une de ces deux peines seulement, toute personne dépositaire de l'autorité publique ou chargée d'une mission de service public ou investie d'un mandat public électif ou exerçant les fonctions de préposé administratif, agent de l'État, des Collectivités Territoriales, des établissements publics, ou toute personne agissant pour le compte de l'une de celles susmentionnées qui aura procuré ou tenté de procurer à autrui un avantage injustifié par un acte contraire aux dispositions législatives ou réglementaires ayant pour objet de garantir l'égalité d'accès et l'égalité des candidats dans les marchés publics et les transferts contractuels de gestion des services publics.

Le Code pénal punit par ailleurs d'autres infractions en lien avec les marchés publics, à savoir la concussion, la prise d'avantages injustifiés, l'enrichissement illicite, l'abus de fonction, les conflits d'intérêt, l'offre ou la demande de cadeaux aux agents publics en vue d'altérer leur jugement ou comportement.

LA MAÎTRISE DU CADRE LÉGISLATIF, PRÉREQUIS POUR UN CONTRÔLE EFFICACE DES MARCHÉS PUBLICS

La corruption dans les marchés publics a un coût considérable. En offrant des marchés à des entreprises ne présentant pas les meilleures offres, elle renchérit la commande publique. Les marchés attribués grâce à la corruption sont souvent de qualité médiocre, et peuvent même dans certains cas mettre en danger la sécurité et la santé publique. Des entrepreneurs intègres dans des secteurs d'activité fortement dépendants de la commande publique voient leurs concurrents prospérer à leurs dépens. La compétence est dépréciée au profit d'ententes illégales entre agents publics et soumissionnaires.

Nombreuses sont les entreprises qui font le choix de ne pas soumissionner à des marchés publics, s'interdisant par la même occasion d'exploiter d'importantes opportunités économiques, du fait que le processus favorise injustement les soumissionnaires corrupteurs et connectés aux décisionnaires. Bien sûr, d'autres entreprises bénéficient de cet état de fait, en distribuant pots-de-vin et cadeaux aux agents publics en charge de la passation des marchés pour s'assurer de l'obtention de commandes publiques.

Ainsi, malgré un cadre législatif et réglementaire relativement complet, les marchés publics à Madagascar sont largement perçus comme gangrenés par la corruption.

Une condition fondamentale pour un contrôle citoyen efficace est l'accès à l'information sur les activités de la puissance publique. Compte tenu de l'aspect relativement technique du processus de passation des marchés publics, les citoyens

ont toutefois besoin de l'appui de relais, en l'occurrence les organisations de la société civile et les médias, pour être en mesure de réaliser ce contrôle de façon pertinente et efficace.

De façon assez remarquable, les données concernant les marchés publics à Madagascar sont relativement nombreuses et accessibles. Pourtant, ces informations ne sont pas pleinement exploitées. Les articles de presse traitant de la question des marchés publics, assez rares, sont souvent plus descriptifs qu'analytiques, et ne permettent pas d'identifier concrètement les mécanismes de corruption. La société civile, fortement engagée sur d'autres sujets comme le suivi budgétaire, est beaucoup moins active dans le suivi des marchés publics.

Ce faible intérêt pour les marchés publics s'explique en partie par le manque de connaissances du processus de passation des marchés. Les textes légaux régissant les marchés publics ne sont connus que des spécialistes. Les citoyens ne sont pas en mesure de se les approprier suffisamment pour être en mesure de mettre en évidence les irrégularités.

En favorisant une meilleure compréhension du cadre législatif encadrant les marchés publics, ce guide contribue à autonomiser et à responsabiliser les acteurs de la société civile engagés dans la lutte contre la corruption afin que ces derniers jouent pleinement leur rôle de veille.

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Summary

The topic of this doctoral thesis is corruption measurement. Its main contributions to economic research are a reflection on the current practice of producing corruption indicators using business survey data, and suggesting innovative approaches to improve the quality of those indicators. This thesis is composed of three Chapters. The first Chapter investigates how asking firm owners and managers to estimate the magnitude of bribery as a percentage of their turnover or in monetary terms affects their estimations and the reasons for this difference. I confirm previous findings that estimates of bribery are significantly higher when expressed as a percentage of turnover rather than in monetary value. This result is likely due to miscalculations on the part of some respondents. Experience in running a business appears to mitigate this propensity to error, but without eliminating entirely. The second Chapter evaluates how firm owners and managers which were awarded public contracts considered at risk of corruption behave in responding to a survey about public procurement. I conclude that firms with more experience of corruption are no more likely to decline participating in the survey or to answer a question asking them to evaluate the magnitude of bribery, but have a higher probability to deny the existence of bribery compared to firms with less experience of corruption. The third Chapter suggests an innovative approach to identify reticent respondents in business surveys and to correct indicators for the frequency of corruption accordingly.

Key words: corruption, bribery, public procurement, reticence, indicator

Résumé

Le sujet de cette thèse de doctorat est la mesure de la corruption. Ses principales contributions à la recherche en économie sont une réflexion sur la pratique actuelle de construction d'indicateurs de la corruption à partir d'enquêtes d'entreprises, et la suggestion d'approches innovantes visant à améliorer la qualité de ces indicateurs. Cette thèse est composée de trois chapitres. Le premier chapitre examine la mesure dans laquelle demander à des propriétaires et gestionnaires d'entreprise d'évaluer la magnitude de la corruption en pourcentage de leur chiffre d'affaires ou en termes monétaires influence leurs estimations, et les raisons expliquant cette différence. Je confirme des résultats antérieurs que les estimations de la corruption sont significativement plus élevées lorsqu'elles sont exprimées en pourcentage de chiffres d'affaires plutôt qu'en valeur monétaire. Ce résultat est vraisemblablement causé par une erreur de calcul de la part de certains répondants. L'expérience dans la gestion d'entreprise limite cette propension à l'erreur, sans toutefois l'éliminer complètement. Le deuxième chapitre évalue comment les chefs d'entreprise ayant remporté des marchés publics considérés à risque de corruption se comportent vis-à-vis d'une enquête sur les marchés publics. Je conclus que les entreprises ayant une plus grande expérience de la corruption ne sont pas plus susceptibles de refuser de participer à l'enquête ou de répondre à une question leur demandant d'estimer la magnitude de la corruption, mais ont une probabilité plus élevée que les autres de nier l'existence de corruption dans les marchés publics. Le troisième chapitre propose une approche innovante d'identification des répondants réticents dans les enquêtes d'entreprise et de correction des indicateurs de fréquence de la corruption.

Mots clés : corruption, pots-de-vin, marchés publics, réticence, indicateur