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The Cost of Doing Business

Firms' Experience with Corruption in
Uganda

Jakob Svensson

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ABSTRACT

Corruption is perceived by firms in Uganda to be one of the most serious impediments to conducting business. Despite this, little is known about the incidence and cost of corruption in the private sector, nor about its effect on firm performance. A major reason for the lack of information is the fact that until recently it was considered impossible systematically to measure corruption. However, with appropriate survey methods and interview techniques firm managers are willing to discuss corruption with remarkable candor. Thus, quantitative data on corruption can be collected. This paper exploits such data from a recently implemented survey of private enterprises in Uganda. The paper shows that firms typically have to pay bribes when dealing with public officials whose actions directly affect the firms' business operations. Such dealings cannot be easily avoided when for example exporting, importing, or requiring public infrastructure services. Moreover, the amount paid could partly be explained by firm specific characteristics: the more the firms "could" pay the more it has to pay. In other words, the "price" for a given public service appears to depend on ability to pay. We find no evidence that firms that pay higher bribes on average receive more beneficial government favors in return. In fact the rate of bribery is negatively correlated with firm growth. The adverse effect of bribery on firm growth is more than three times greater than that of taxation on growth.

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THE COST OF DOING BUSINESS: FIRMS' EXPERIENCE WITH CORRUPTION IN UGANDA

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June 2000

Useful contributions and comments were received from participants in the annual seminar on the Ugandan economy organized by the Economic Policy Research Centre (Kampala) in May 1999; the Ugandan Ministry of Finance, Planning and Economic Development and the Ministry of Ethics and Integrity; Patrick Asea, Ray Fisman, Ritva Reinikka, and three anonymous referees.

1. Introduction

Corruption is perceived by firms in Uganda to be one of the most serious impediments to conducting business. Despite this, little is known about the incidence and cost of corruption in the private sector, nor about its effect on firm performance. A major reason for the lack of information is the fact that until recently it was considered impossible to measure corruption systematically. However, with appropriate survey methods and interview techniques firm managers are willing to discuss corruption with remarkable candor. Thus, quantitative data on corruption can be collected. This paper exploits such data from a recently implemented survey of private enterprises in Uganda.

There are three main findings presented in the paper. First, and not very surprisingly, we find that firms typically have to pay bribes when dealing with public officials whose actions directly affect the firms' business operations. Such dealings cannot easily be avoided when, for example, exporting, importing, or requiring public infrastructure services. The data reveal that more than 80 percent of the firms need to pay bribes during a typical business year.

Second, we show that the amount paid could partly be explained by firm-specific characteristics, such as the firm's current and expected future profits and the reversibility of the firm's capital stock. These findings suggest that amount paid in bribes is not a fixed sum for a set of public services, but depends on the firm's "ability" to pay: the more the firm "could" pay the more it will have to pay. In other words, the "price" for a given public service depends on the ability to pay.

Third, there seems to be no evidence that firms that pay higher bribes on average receive more beneficial government favors in return. The econometric work suggests that the relationship between ability to pay and amount paid is not driven by reverse causation. Moreover, the analysis shows that the rate of bribery is negatively correlated with firm growth. The adverse effect of bribery on firm growth is more than three times greater than that of taxation on growth. Furthermore, there is no relationship in the data between the time it takes to receive a public service and the amount of bribes the firm pays for the service.

These findings can help shed light on a hotly contested issue, that is, the consequences of corruption on firm growth and performance. At a conceptual level this debate has been going on for several decades (for an excellent review see Bardhan, 1997). On the one hand, the effect of corruption is thought of as being something like a tax, differing primarily in that the payment does not end up as public revenues.¹ This "tax effect" reduces both the return to private capital (since part of output will be extracted in bribes) and the amount of internally generated funds; or retained profits that firms can use for capital investment. To the extent that corruption also deprives the government of

¹ See Johnson, Kaufmann, and Shleifer (1998) on the public finance aspect of corruption, and Bardhan (1997), Tanzi (1998), and Wei (1999) for reviews of existing literature.

revenue required to provide productive public goods, corruption is likely to be more detrimental to growth than taxation. In addition, the uncertainty and secrecy that necessarily accompany bribe payments are likely to compound this difference.² On the other hand, proponents of the “grease argument” claim that bribery may allow firms to get things done faster in an economy plagued by bureaucratic holdups and be a way to get around tax and regulatory burdens. The firm survey findings from Uganda suggest that the former rather than the latter claim on the effects of corruption is consistent with the data.

These findings based on quantitative data are consistent with the firm managers’ perceptions of corruption. Figures 1-4 display the top five constraints (out of 24 constraints listed in the questionnaire) as perceived by firm managers. The ranking is on a scale of 1 to 5, with 1 = no problem, 2 = small problem, 3 = moderate problem, 4 = major problem, 5 = severe problem. In the sample of all firms, corruption (based on average values) is ranked as the fifth most serious constraint to firms’ business operations. Evaluating median values, there are six areas - corruption included - that are perceived as constituting a major problem. The picture becomes even more alarming when restricting the sample to subgroups of the sample population. Figure 2 displays the top 5 constraints for large firms (more than 100 employers), Figure 3 shows the top 5 constraints for foreign owned firms (majority foreign owned), and Figure 4 displays the top 5 constraints for exporting firms. For both large and foreign owned firms, corruption is perceived to be the second most important constraint. Exporting firms’ perceptions are very similar.

Taken together the results support the claim that corruption has a large adverse effect on firms. Of course, still some firms may benefit (and possibly a great deal) from corruption. In fact some firms may choose to compete based on costly preferential bureaucratic access, that is devote resources to obtain valuable licenses, preferential market access, control of privatized companies, etc., instead of focusing on improving productivity. Moreover, in certain areas and for some firms, bribes may just be a substitute for other “costs”, such as taxes. What this type of econometric work identifies is what is true on average, or in general. On average, the Ugandan data reveals that corruption constitutes a heavy burden on firms.

The outline of this paper is as follows. In section 2, the data collection effort is described in some detail. Section 3 discusses the general pattern of bribe payments with respect to incidence, level and effect on firm growth. In section 4, three specific cases are considered. These are not standard case studies based on three specific firms, but studies of average firms from three subgroups of the sample: a firm trying to obtain connection to public services; a firm involved in trade; and a firm paying taxes. Finally, section 5 concludes.

² See Shleifer and Vishny (1993).

2. The Data

Can reliable data on corruption really be collected? For a long time it has been the common view that given the secretive nature of corrupt activities is it virtually impossible to collect reliable quantitative information on corruption. However, as forcefully argued by Kaufmann (1998) this presumption is incorrect. With appropriate survey methods and interview techniques firm managers are willing to discuss corruption with remarkable candor.³

The empirical strategy utilized to collect information on bribe payments across firms in Uganda had the following six components. First, the survey was implemented by an industry association (Ugandan Manufacturers' Association). In Uganda, as in many other countries, there is a deep-rooted distrust in most of the public sector. To avoid suspicion of the overall objective of the data collection effort it was therefore decided that the survey should be implemented by a body that most firms had confidence in. Second, the corruption related questions (and the whole survey instrument) were carefully piloted and built on existing surveys on regulatory constraints. Third, the enumerators were trained by survey experts. Fourth, the questions on corruption were phrased in an indirect fashion to avoid implicating the respondent of wrongdoing. Fifth, the corruption related questions were asked at the end of the interview, by which time the enumerator (hopefully) had established necessary credibility and trust. Sixth, to enhance the reliability of the corruption data, multiple questions on corruption were asked in different sections of the questionnaire. The survey instrument had roughly 500 entries and a handful of them were related to corruption. Consistent findings across different measures significantly increase the reliability of the data. The data collection effort was also aided by the fact that corruption has, to a large extent, been desensitized in Uganda. Over the past few years several awareness-raising campaigns have been implemented on the consequences of corruption, and the media regularly and freely reports on corruption cases.⁴

3. Corruption: Incidence, Level and Effects

3.1. Incidence

The survey provides bribery data for 176 firms, out of 243 sampled. Of the 67 firms that did not respond to the main corruption questions, about one third refused to answer other sensitive questions as well; for example about cost and sales. As a group, the around 40 firms that declined to answer questions about corruption in particular did not differ significantly with respect to size, profits, and location from the group of firms that

³ The Ugandan Enterprise Survey [see Reinikka & Svensson (1999) for details], was initiated by the World Bank and the Ugandan Private Sector Foundation primarily to collect data on constraints facing private enterprises in Uganda. It was implemented during the period January-June 1998.

⁴ See Ruzindana et al. (1998) and World Bank (1998b).

replied on corruption-related questions. Thus, there is no evidence that the sample of 176 firms is not representative.

Of the 176 firms that answered the question on bribe payment, 19 percent (33 firms) reported that they did not have to pay bribes, while 81 percent (143 firms) reported positive bribe data. As shown in Table 1, there are noticeable differences between the two groups of firms. Non-bribing firms tend to have characteristics suggesting they are operating in sectors with little or no contact with the public sector, that is, in the informal sector. They receive significantly less public services, proxied by infrastructure services. They are less involved in foreign trade, proxied by share of output exported. They pay fewer types of taxes, particularly when controlling for tax exemptions. These findings suggest that firms typically have to pay bribes when dealing with public officials whose actions could have large effects on the firms' business operations. This interpretation is further supported by the finding that firms reporting positive bribe payments spend significantly *more* time dealing with government regulations and spend *more* money on accountants and specialized service providers to deal with regulations and taxes.

The results are supportive of the bureaucratic extortion model presented in Svensson (1999). A key assumption in this model is that public servants have discretionary power within the given regulatory system to customize the nature and amount of harassment on firms to extract bribes. Svensson shows that the extent to which this could be done depends on how tight the civil servants can "control" the firm's business decisions and influence the firm's cash flow. These indirect "control rights" stem from the existing regulatory system and the fact that bureaucrats have discretion in implementing, executing and enforcing rules and benefits affecting the firm, such as business regulation, licensing requirements, permissions, taxes, exemptions, and provision of public goods and services.

The last two rows in Table 1 show that the two groups are similar with respect to cost of security and incidence of robbery and theft. In fact, the cost of security per worker is higher for the group of non-bribing firms. Thus, while being in a sector where civil servants have few "control rights" over the firm's business operations (informal sector) insulates the firm from public corruption, it does not protect the firm from other sources of discretionary redistribution, such as theft. The average firm in the non-bribing group is somewhat smaller (measured by, number of employees), but the difference is not significant. However, this result is partly driven by a couple of large firms in the non-bribing group. Dropping these firms results in a significant difference between the two groups: larger firms are more likely to have to pay bribes.

3.2 Level

Do bribe payments constitute a heavy burden on firms? The evidence suggests they do. For the firms that reported positive bribes, the average amount of corrupt payments is about US\$ 8,280 with a median payment of US\$ 1,820. These are large amounts, corresponding on average to US\$ 88 per worker, or roughly 7.9 percent of total costs (1

percent in the mean). Including firms reporting zero bribe payments, the average payment is US\$ 6,730 with a median payment of US\$ 450 or 6.4 and 0.5 percent respectively.

Approximately 50 percent of the firms reporting positive bribe payments pay more in grafts (annually) than what they pay for security (including guards, investment in equipment, etc.). Table 2 compares the size of reported graft with other cost items of the firm: wages, interest payments and cost of fuel. For comparison, the cost of fuel constituted on average 6.3 percent of total costs. Wages constituted on average 18.1 percent, and interest payments constituted on average 6.8 percent of total costs. The variance on reported graft differs more than the variance in wage costs and fuel as evident from the median values, which are significantly lower for corruption but fairly similar for fuel, and wages.

Of the 167 firms for which data on both bribe payments and taxes are available, 70 percent reported higher bribe payments than corporate income taxes, with the median difference being US\$ 800. This high number is partly driven by a number of small firms that do not pay corporate taxes. Still, the ratio of bribe payment to corporate taxes for the firms that paid corporate taxes is on average 120 percent (and 31 percent at the median).

Table 3 compares the size of reported graft and investment in machinery and equipment. A majority of firms reported small or no investment in 1997. As a result, almost 50 percent of the firms reported larger bribe payments than total investment. The distribution of bribes is depicted in Figure 5-6.

When assessing the data it should be stressed that despite the careful data collection strategy, there are likely to be cases of misreporting in the sample. The average graft numbers may be sensitive to such misreporting. At the same time, the focus of this paper is not on the level of bribes *per se*, but rather on its correlates. We believe that the strategy used to collect information on graft has minimized any systematic biases in the correlation between reported graft and the set of variables that corruption is related to.

What explains the amount of bribes firms need to pay? As discussed above there is evidence that firms that cannot avoid dealing (extensively) with the public sector must pay bribes.

Svensson (1999) develops and tests a model in which the amount paid is a function of firm characteristics. The model's intuition is straightforward. As argued for instance by Thomas (1999), the malfunctioning institutional system in many Sub-Saharan countries (with lack of performance-based evaluations, discretionary firing and dismissal powers) has given bureaucrats and office holders with hiring and firing power the opportunity to demand payments from those lower in the hierarchy. Increased uncertainty of tenure has created strong incentives for those in government post to extract as much and quickly as possible to protect against impending unemployment or transfer to a less lucrative position. As a result, many public institutions/bureaucrats in reality act similar to a price discriminator with a focus of extracting rents.

In such a system, a firm with higher current profits, or expectations of higher profit in the future, will be forced to pay higher bribes since it can afford to pay them. Likewise, if the firm cannot credibly threaten to change business activity or location, or import/export goods through other channels to avoid paying bribes, it will force to pay higher bribes. Firm characteristics, such as profitability and the degree of reversibility of the installed capital stock, thus determine the relative bargaining strength of the firm relative to the bureaucrats.

Svensson (1999) tests this hypothesis using data on current and expected profits, and a measure of the reversibility of the installed capital stock.⁵ Table 4 reports summary statistics on these variables. As evident, firms reporting high corruption (more than US\$ 1000) have significantly higher current profits, as well as higher expected future profits (proxied by employment size and capital stock), and they are using a production technology which is costly to change (low reversibility). All these results are consistent with the rent-extraction hypothesis. However, these are just partial correlates. Two valid objections are: (i) they are driven solely by size; that is, larger firms pay more bribes but also make larger profits and have more capital installed, and (ii) they are influenced by reverse causation, firms paying higher bribes get valuable government favors in return and thus make larger profits.

To check this, we ran a number of corruption regressions with profit, capital stock, employment size and the opportunity cost (defined as degree of reversibility times capital stock) as explanatory variables.⁶ Table 5 depicts four of these corruption-level regressions, with different dependent variables (corruption in US\$, logarithm of corruption, corruption per employee). Irrespective of specification, corruption is positively correlated with current profits, expected future profits, and the opportunity cost of capital. Thus, controlling for size, firms with higher profits must pay more in bribes and firms with better outside options will pay less. The result also suggests that for most firms, more investment (through higher expected profits) implies that more bribes need to be paid.

In the last column in Table 5 we deal with the potential endogeneity problem by instrumenting for profits, using a set of industry-location dummies as instruments. Svensson (1999) argues that this is a valid approach for two reasons. First, the data reveal that there are systematic differences in profit rates across sectors. Presumably the dummies will pick up the underlying characteristics of the industries and/or locations that determine their profitability. Second, the industrial and regional dummies are uncorrelated with the

⁵ Expected future profits are proxied by the value of installed capital and employment size. The opportunity cost of capital is the product of the resale value of capital times the degree of reversibility. The latter is measured as the difference between resale and replace value of capital after controlling for the age of the capital stock. A negative value indicates that the firm's stock of capital is costly to move.

⁶ The results are from Svensson (1999). Profit is defined as gross sales less operating costs and interest payments. The capital stock is measured as the resale value of plant and equipment, and labor force is total employment. All data are for 1997 and the monetary values are expressed in U.S. dollars.

reported level of bribe payments holding the other controls constant. For these reasons the industry-location dummies are potentially good candidates for instruments.

The results in column 4 support the claim that, on average, the level and rate of graft are driven by the firms' ability to pay. The instruments perform well, picking up roughly 25 percent of the variation in profits across firms, and the null hypothesis of the validity of the instruments cannot be rejected; that is, there is no evidence that the instruments for the profit rate belong in the corruption regression.

It should be noted that the results do not prove that bribe-paying firms do not receive preferential government treatment. In fact, all bribe-paying firms may obtain a "valuable" benefit. The result does suggest however, that the price of this benefit is determined by the firm's ability to pay.⁷

Table 6 shows the effects on corruption (bribe payment) of both a one-standard-deviation increase in the explanatory variables (column 1), and a one-percent increase in the explanatory variables (column 2). The calculations show, for example, that a one-standard-deviation increase in profits is associated with roughly US\$ 4,400 in additional bribe payments (equal to 0.33 standard deviations), while a one-percent increase in the capital stock results in a 0.22 percent increase in bribes paid.

3.3 Effects

So far the analysis has focused on who, why and how much firms need to pay in bribes. A logical follow-up question is: what are the effects? From the previous two subsections it is obvious that evaluating the effects of corruption (for instance on firm growth) is a tricky exercise. The problem is that of identification, since both growth and corruption are likely to be jointly determined. A simple example illustrates the point. Consider two firms in a given sector of similar size and age. One of the firms is producing a good/brand that is perceived to have a very favorable demand forecast, while the other firm is producing a good with much less favorable demand growth. Assume furthermore that both firms need to clear a certain number of business regulations and licensing requirements, and/or require some public infrastructure services. Moreover, assume that the public servants have discretion in implementing and enforcing these regulations and services. A rational rent-extracting bureaucrat would try to extract as high bribe as possible. In this setup a bureaucrat would be expected to demand higher bribes from the firm producing the good with a favorable demand forecast, simply because this firm's expected profit are higher and, thus, its ability to pay larger. If the forecasts also influence the firms' willingness to invest and expand, it would be expected (comparing these two firms) that there is a positive (observed) relationship between corruption and growth.

⁷ As shown in Svensson (1999), the results reported in Table 5 are robust to a number of potential statistical problems.

Fisman and Svensson (1999) try to overcome this simultaneity problem by looking at industry-location averages.⁸ They argue that if the aforementioned problem is specific to firms but not industries or locations, netting out this firm-specific component yields a bribe measure that only depends on the underlying characteristics inherent to particular industries and/or locations that determine to what extent bureaucrats can extract bribes. For example, in the case of industries, the extent to which the market for the produced goods are abroad, import reliance, and dependence of publicly provided infrastructure services.

Figure 7 illustrates the key findings from Fisman and Svensson (1999). The higher the average bribery to sales rate, the lower the growth rate. As evident, the effect is of considerable magnitude. A firm that is forced to pay an average bribery to sales rate of four percentage points, grows 10 percentage points slower than a firm that pays on average one percentage point (based on industry-location averages, the average firm pays roughly 1.5 percent in bribes as share of sales).

Fisman and Svensson (1999) also compare the effects of corruption on growth with the effects of taxation on growth. They find that in the whole data set, the negative effect of bribery on firm growth is more than three times greater than that of taxation on growth. Moreover, after outliers are excluded, they find a much greater negative impact of bribery on growth, while the effect of taxation is considerably attenuated. This result provides some validation for firm-level theories of corruption which posit that corruption retards the development process to a much greater extent than taxation.

Despite these strong results it should be stressed again that in reality some firms may still benefit (and possibly a great deal) from corruption. What this type of analysis identifies is what is true on average. On average, the Ugandan data suggest that there is a strong negative relationship between bribery payments and firm growth.

4. Case studies

Below the experience of three typical firms is described based on the survey data: a firm trying to obtain connection to public services; a firm involved in trade (export and import); and a firm paying a range of taxes. These experiences are not based on one specific firm in each category, but three average firms with the aforementioned characteristics.

⁸ The authors obtain similar results when instrumenting for the bribe rate using industry-specific variables as instruments.

4.1 Case study: Getting connected

The key corruption variable discussed above was reported bribe payment. However, there are other methods of collecting (objective) data pertaining to corruption. Specifically, cost data on provision of homogeneous public services (goods) can reveal evidence of corruption. We collected information on two variables related to delivery of public services. The respondents were asked to report the total costs (including informal payments) of getting connected to the public grid and acquiring a telephone line.

The fee for a telephone connection (around US\$ 100) is supposed to be fixed. Thus, deviations from the given price typically reflect graft. Connection costs to the public grid is more problematic. In fact, the cost of connection to the public grid is a complex function of load requirements, necessary upgrades, and distance to existing voltage connection. The complexity in determining the price of connection implies that the public electricity company (UEB) in reality has large discretion over the cost.

90 firms reported data on costs of acquiring a telephone line.⁹ Of those 90 firms, 83 percent (75 firms) reported costs above the fixed price. On average, a firm had to pay roughly 130 US\$ in addition to the fixed price; that is, more than twice the stated cost to acquire a telephone line. The average firm had to wait approximately 13 weeks to get connected. Interestingly, there is no relationship between connection cost and time waited. The simple correlation is 0.04. This result stands in stark contrast to the “efficiency grease” hypothesis that predicts a negative correlation between bribes and bureaucratic delays, but is in accordance with the basic hypothesis laid out above. If public sector employers have discretion over implementation, delays are endogenously determined to explicitly extract bribes.

Evidence that the excess cost paid by firms actually constituted informal payments (bribes) are given in Figure 8 and Table 7. Of the 75 firms that reported excess cost of connection, 13 did not report bribe data. For the remaining 62 firms there is a high correlation between the excess cost and reported bribe payment (the simple correlation is 0.41), as illustrated in Figure 8. The simple regression of corruption on excess cost is reported in Table 7. Thus, excess cost of connection is highly correlated with reported bribe payment.

29 firms obtained a connection to the public grid during the period 1995-1997. Twenty-five of these firms answered the question on bribes, and all of them reported positive bribe payments. On average a firm paid US\$ 5,540 to get connected to the public grid, with the median firm paying roughly US\$ 2,700, and had to wait a little more than 12 weeks to get the connection. Part of the cost of connection is likely to be due to reasons other than corruption, and in particular how far the firm is located from an existing voltage connection. There is no data of this distance in the survey. However, as a rough proxy of the proper cost adjustment due to location an infrastructure service provision index was

⁹ Two extreme outliers (reporting errors) have been dropped from the sample of firms reporting connection to telephone and public grid.

used, indicating access to basic public services such as water, electricity, telephones, waste disposal, and paved roads. The maintained hypothesis is that the infrastructure service provision index is likely to be (highly) correlated with distance to existing power connections.

Table 7, column 2 displays the result of regressing reported bribe payment and the infrastructure service provision index on the cost of obtaining connection to the public grid. Both variables enter highly significant, thus providing evidence that high cost of connection is due both to location specific characteristics and corruption. The partial correlation (controlling for location) between connection costs and bribes (0.67) is illustrated in Figure 9. Again, the time to get connected and the cost (controlling for location) is not correlated (partial correlation is 0.08).

These findings are consistent with recent empirical results from other developing countries. Kaufmann and Wei (1998) examine the relationship between perception of corruption and management time wasted with bureaucrats. Contrary to the “efficient grease” argument, they find that firms that face more “bribe demand” are also likely to spend more, not less, management time with bureaucrats.

These results have two clear implications. First, collecting data on provision of “homogeneous” public services (goods) is a potentially fruitful way to indirectly collect evidence of corruption. The data reveal that the provision of public services provides a powerful tool to extract bribes. Second, the data also suggests that clearer rules can go some way in improving the situation from the firms’ perspective. The relationship between bribe payments and excess cost of telephone connection is somewhat weaker than that between bribe payments and cost of getting connected to the public grid. However, clearer rules are not sufficient if there are no mechanisms for accountability of the public sector in charge with the public goods provision. Thus, even though there seems to be a set price for a telephone connection, most firms must pay significantly more to actually get a telephone line installed. More generally, the finding suggests that fighting corruption is not purely a technical problem. Even though reforms of rules and regulations are important, the focus must be on creating a sustainable, credible and on-going system of accountability of public institutions and public servants.

4.2. Case study: Exporting and importing

Being engaged in trade, either exporting or importing, typically implies that the firm needs to pay bribes. In fact, 91 percent of the trading firms reported positive bribe data, with an average (median) level of graft equal to US\$ 9,800 (US\$ 2,050). Not surprisingly then, the median exporter perceived corruption as a major problem (see Figure 4).

Consistent with other results, there is no evidence that bribes speed up the process of getting goods in or out of the country. For the average firm, it takes 68 days for imported goods to arrive to the firm. It takes 30 days from the original shipping port (typically in Europe) to Mombasa or Dar-es-Salaam, an additional 27 days from the port to clearance point (Nakawa inland terminal), and 9 more days from clearance point to the firm. Thus, firms involved in trade face additional cost due to both corruption and inefficient public services. Again, provision of necessary services (public transport, clearances) provides corrupt civil servants with a mechanism to extract bribes.

4.3 Case study: Paying taxes

Firms that pay fewer types of taxes also face a lower probability of paying bribes, particularly when controlling for tax exemptions.

On average, the senior management in a firm that pays a majority of taxes spends almost 20 percent of their time dealing with government officials (regarding taxes, permits, regulations etc.). The cost of accountants, lawyers and auditors to deal with taxes and regulations impose a yearly cost of almost US\$ 3,300 for the median enterprise.

An interesting finding is reported in Table 8. The level and rate of bribes are significantly higher for firms reporting large differences between their assessment of taxes to be paid and the tax authority's assessment. On average, a firm which experiences a difference in tax assessment above 50 percent pays three times as much in bribes than a firm reporting difference in tax assessment below 50 percent.

There is ample anecdotal evidence that the tax system provides bureaucrats with a potentially powerful tool to extract bribes. The firm survey evidence supports this assertion, although it is difficult to disentangle the benefits a firm might receive due to lower taxes as a result of the bribe, from the actual cost of the bribe. However, it is safe to conclude that with respect to the tax system the biggest loser is the public, since corruption deprives the government of income required to provide public goods and services.

The relationship between number of taxes and corruption also has implications for tax policy in general. Streamlining the number of taxes and simplifying the tax code can go some way in mitigating the problem (and the tax reform enacted in 1997 had this as one of its primary focuses). However, the simplification must be followed by auditing and

accounting standards, and these standards need to be applied both to the firms and to the tax authority

5. Conclusion

Corruption is perceived by firms in Uganda to be one of the most serious impediments to conducting business. However, until recently it has been considered impossible to measure corruption systematically. As a result, little is known about the incidence and cost of corruption in the private sector, nor about its effect on firm performance. This paper has shown that with appropriate survey methods and interview techniques firm managers are willing to discuss corruption with remarkable candor. Thus, quantitative data on corruption can be collected. We find that firms typically have to pay bribes when dealing with public officials whose actions directly affect the firms' business operations. Such dealings cannot easily be avoided when, for example, exporting, importing, or requiring public infrastructure services. The data reveal that more than 80 percent of the firms need to pay bribes during a typical business year. Moreover, the amount paid could partly be explained by firm specific characteristics, such as current and expected future profits and the reversibility of the capital stock. These findings suggest that amount paid in bribes is not a fixed sum for a set of public services, but depends on the firm's ability to pay: the more the firm could pay the more it will have to pay. In other words, the "price" for a given public service depends on ability to pay. We find no evidence that firms that pay higher bribes on average receive more beneficial government favors in return. In fact, the rate of bribery is negatively correlated with firm growth. The negative effect of bribery on firm growth is more than three times greater than that of taxation on growth.

The paper has argued that clearer rules with respect to taxes and public service provision can go some way in mitigating the problem. However, without institutionalized mechanisms for accountability of the public sector these changes will not be sufficient. These mechanisms include both formal or government induced measures - it is important to select measures that are in line with Uganda's implementation capabilities - and measures to empower the civil society and the private sector. Collective action or measures on the part of the business community, for example, could include:

- collecting and disseminating information about corrupt practices
- informing the private sector and the public about service standard, guidelines and norms of major service providers
- increasing individual firms ability to commit to no-bribery
- recognizing those who are making efforts to resist corrupt practices

As argued by Paul (1997), in general corruption can be effectively tackled only when the reform of the political process and the restructuring of the regulatory systems

are complemented by a systematic effort to increase the citizens' ability to monitor and challenge abuses of the system, and inform the citizens about their rights and entitlements. Breaking the culture of secrecy that pervades the functioning of the government and empower people to demand public accountability are two important components in such an effort.

Recent reviews of the growth performance of Sub-Saharan Africa have identified a number of recurring features of African politics that are likely to undermine the results of traditional institutional reforms (such as tax reforms). These features include restricted civil society involvement, state perceived as a vehicle of wealth accumulation, prevalence of patronage politics, and small elite with close political connections. Although each may not be applicable to every country, a successful national anti-corruption program must also tackle these fundamental determinants of corruption.

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Figure 1. Ranking of constraints to investment: All firms (5 most serious constraints; 1= no problem, 4=major problem)

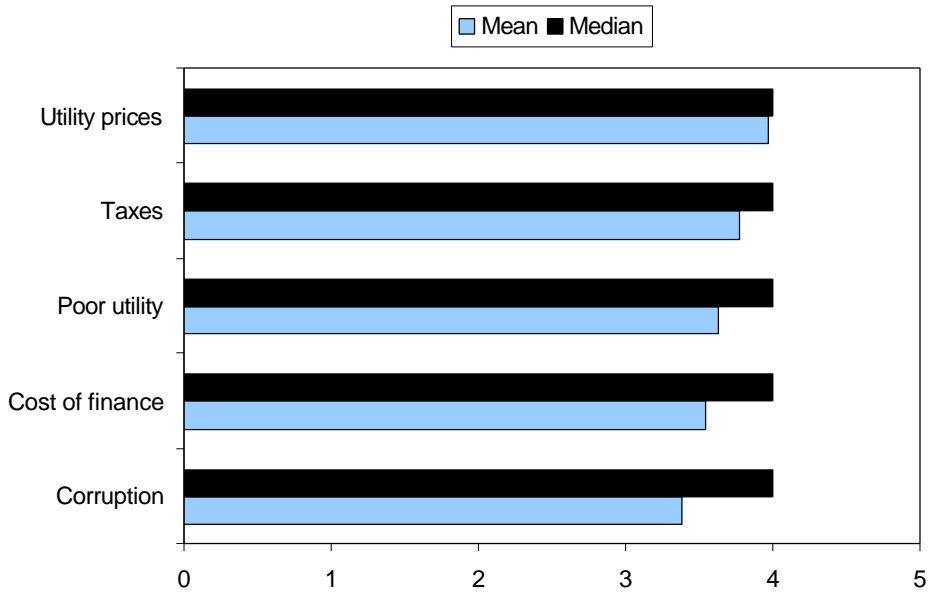


Figure 2. Ranking of constraints to investment: Large firms (5 most serious constraints; 1= no problem, 4=major problem)

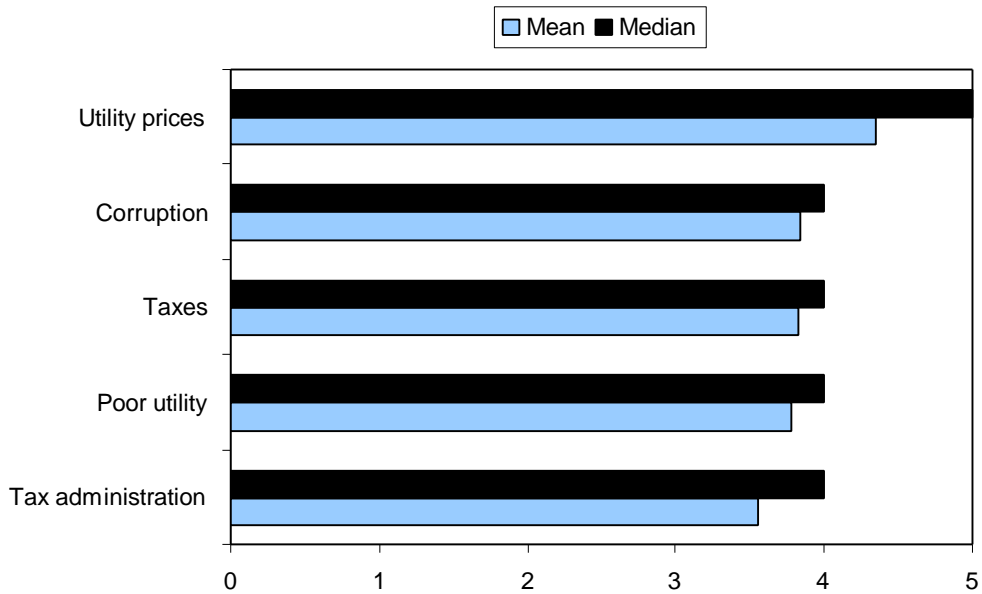


Figure 3. Ranking of constraints to investment: Foreign firms (5 most serious constraints; 1=no problem, 4=major problem)

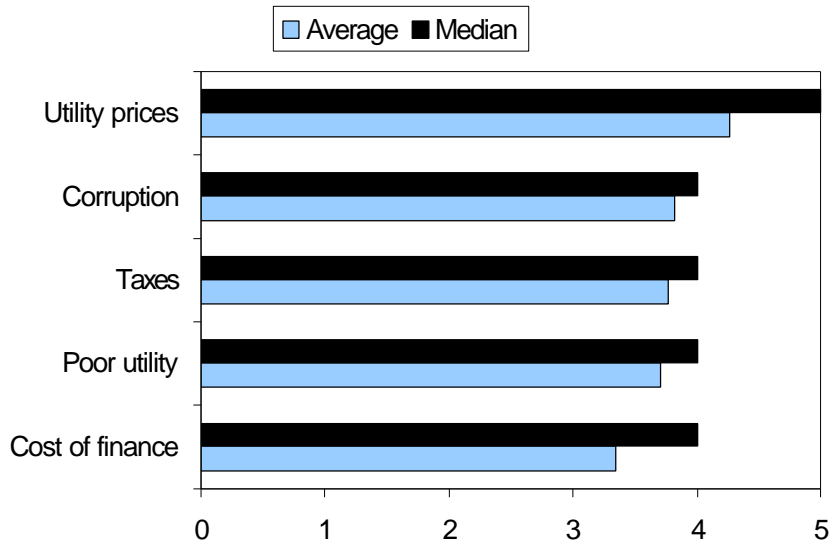


Figure 4. Ranking of constraints to investment: Exporting firms (5 most serious constraints; 1 = no problem, 4=major problem)

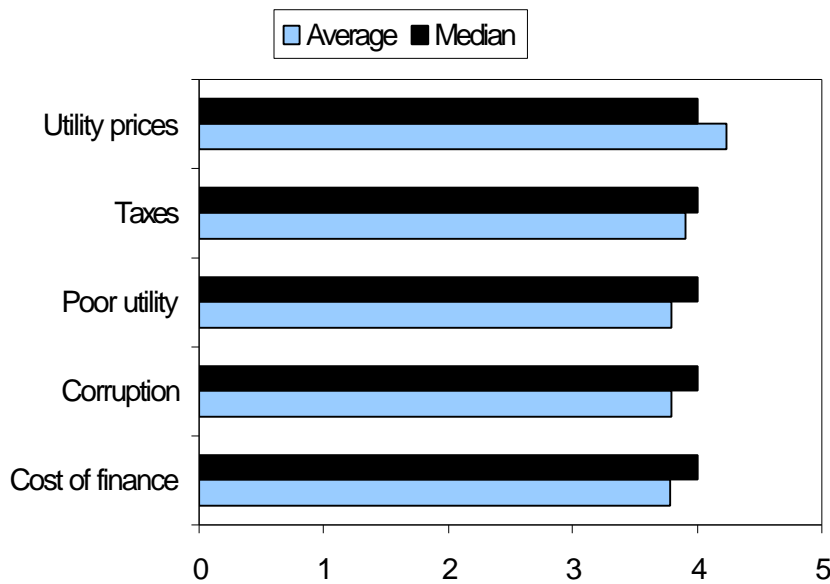


Table 1: Sample characteristics

| | Firms that reported zero bribe payments | Firms that reported positive bribe payments |
|--|--|--|
| Infrastructure service provision | 3.24 | 3.70* |
| Export share | 0.15 | 0.33** |
| Pay tax index | 2.58 | 3.04 |
| Pay tax index (non tax exempted only) | 2.50 | 3.28** |
| Time spent dealing with taxes and regulations (log) | 1.93 | 2.49** |
| Cost of accountant etc. (log) | 3.30 | 4.74** |
| Cost of security (log) | 7.17 | 7.48 |
| Incidence of robbery and theft | 0.52 | 0.58 |
| Size (log) | 3.61 | 3.88 |

Note: (i) average values; (ii) * [**] denotes rejection of the null hypothesis that the two means are equal at the 10 (5) percent level. Variable definition: infrastructure service = index (0-5) of availability of public services [electricity, water, telephones, waste disposal, paved roads], 1 if available 0, otherwise, index is the sum of the binary availability variables for the five services; export = share of sales exported (1997); pay tax = index (0-6), sum of six binary (0=no, 1=yes) variables reflecting types of taxes the firm pays [import duty, import commission, withholding tax, excise tax, VAT, corporate income tax] (1997); time spent dealing with taxes and regulations = percentage of senior management's time spent each month dealing with government regulations (1997); cost of accountant = monthly cost of accountant, lawyer, agent, specialized service provider to deal with regulation and taxes in US\$ (1997); cost of security = annual cost of security in US\$ (1997); incidence of robbery and theft = binary variable taking the value 1 if the firm was a victim of robbery, and/or theft during 1995-1997, 0 otherwise; size = total employment (1997).

Table 2. Comparison of corruption and other costs, In percent

| | Firms reporting positive graft | | All firms | |
|----------------------------------|--------------------------------|--------|-----------|--------|
| | Mean | Median | Mean | Median |
| Corruption to total costs | 7.9 | 1.0 | 6.4 | 0.5 |
| Interest payments to total costs | 6.8 | 0 | 8.3 | 0 |
| Fuel to total costs | 6.3 | 4.0 | 6.2 | 3.8 |
| Wages to total costs | 18.1 | 15.0 | 18.6 | 15.0 |

Note: 132 firms in sample of enterprises reporting positive graft, and 164 firms in “all firms” sample.

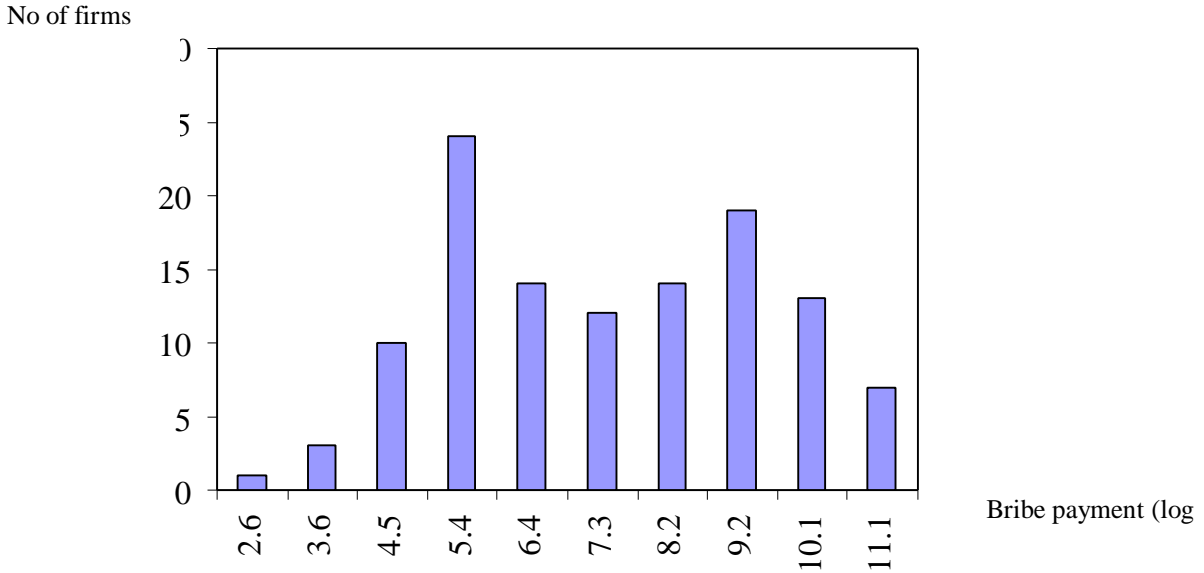
Source: Uganda Enterprise Survey

Table 3. Corruption and investment (US\$)

| | All firms | Sample of firms reporting positive graft | Sample of firms reporting positive investment | Sample of firms reporting positive investment, and graft |
|---------------------|-----------|--|---|--|
| Corruption (mean) | 6,818 | 8,376 | 9,108 | 11,645 |
| Investment (mean) | 149,000 | 124,545 | 253,636 | 220,909 |
| Corruption (median) | 455 | 1,727 | 909 | 4,545 |
| Investment (median) | 1,136 | 418 | 27,273 | 37,273 |
| No. of firms | 172 | 140 | 101 | 79 |

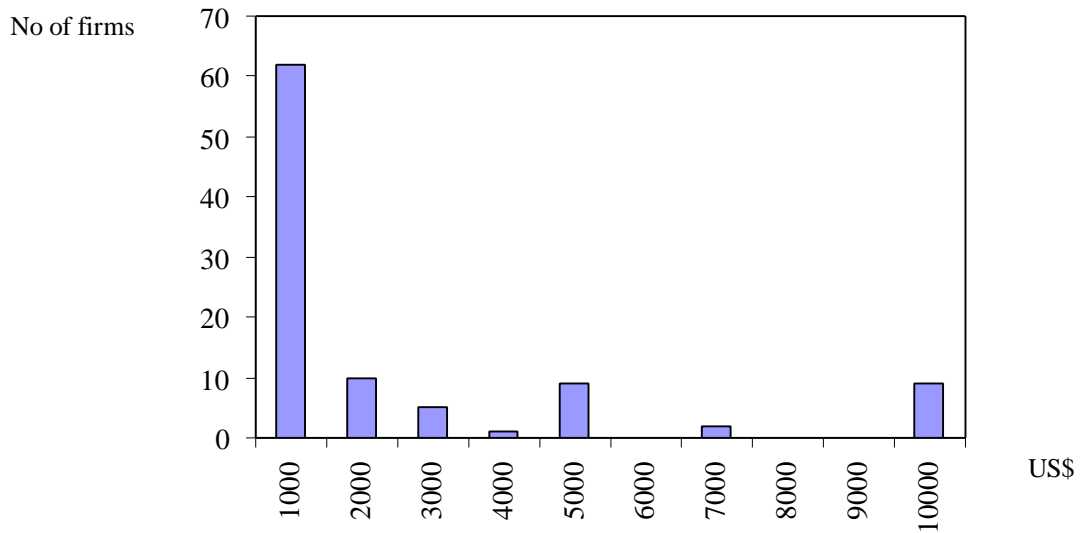
Source: Uganda Enterprise Survey

Figure 5: Distribution of firms according to bribe payments (log)



Source: Uganda Enterprise Survey

Figure 6: Distribution of firms according to bribe payments



Source: Uganda Enterprise Survey

Table 4: Sample characteristics of firms that reported positive bribes^{(i),(ii), (iii)}

| | All firms | All firms ^(iv) | Firms reporting low bribe payments | Firms reporting high bribe payments ^(iv) |
|----------------------|-----------|---------------------------|------------------------------------|---|
| Profit | | | | |
| - <i>mean</i> | 211,060 | 284,390 | 57,540 | 540,110 |
| - <i>median</i> | 27,270 | 27,270 | 11,230 | 95,690 |
| - <i>Std. dev.</i> | 1,134,460 | 1,048,116 | 119,660 | 1,489,290 |
| Bribes | | | | |
| - <i>mean</i> | 7,850 | 6,270 | 280 | 13,020 |
| - <i>median</i> | 910 | 910 | 180 | 9,090 |
| - <i>Std. dev.</i> | 19,840 | 13,480 | 280 | 17,390 |
| Capital stock | | | | |
| - <i>mean</i> | 365,760 | 346,760 | 174,550 | 540,890 |
| - <i>median</i> | 90,910 | 90,910 | 38,640 | 227,270 |
| - <i>Std. dev.</i> | 667,190 | 648,260 | 394,500 | 809,010 |
| Employment | | | | |
| - <i>mean</i> | 119 | 109 | 36 | 192 |
| - <i>median</i> | 34 | 33 | 20 | 81 |
| - <i>Std. dev.</i> | 262 | 251 | 53 | 346 |
| Reversibility | | | | |
| - <i>mean</i> | .001 | .001 | .002 | -.000 |
| - <i>median</i> | .011 | .011 | .012 | .009 |
| - <i>Std. dev.</i> | .034 | .034 | .033 | .035 |
| Obs. | 119 | 117 | 62 | 55 |

Note: (i) sample of firms for which data on corruption and other variables are available; (ii) profits, bribes, resale values in US\$; (iii) low bribe payment is graft smaller than US\$ 1000; (iv) excluding two extreme outliers. Variable definition: profit = gross sales less operating costs and interest payments in US\$ (1997); capital stock = resale value of plant and equipment in US\$ (1997); reversibility = residual from the regressing of the ratio of resale to replace values of the capital stock to the average age of the capital stock and a constant (all variables in logs); employment = total employment (1997).

Source: Uganda Enterprise Survey

Table 5: Corruption regressions^{(i),(ii),(iii)}

| Equation | (1) ^(iv) | (2) ^(v) | (3) ^(vi) | (4) ^{(vi),(vii)} |
|------------------------|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| Constant | 9,490 (6062) | 9.21 ^{***} (1.81) | 135.2 ^{**} (65.0) | 121.6 [*] (53.1) |
| Employment | 12.32 ^{**} (5.98) | .0027 (.0017) | | |
| Profit | .0037 ^{***} (.0010) | 5.5E-7 ^{***} (9.0E-8) | .0040 ^{***} (7.4E-4) | .0050 ^{***} (.0007) |
| Opportunity cost | -.259 ^{***} (.088) | -3.5E-5 ^{***} (1.2E-5) | -.238 ^{**} (.093) | -.245 ^{**} (.094) |
| Capital stock | .0059 ^{**} (.0023) | 9.8E-7 ^{**} (3.7E-7) | .0041 [*] (.0023) | .039 ^{**} (.0023) |
| Wald ^(viii) | 28.23 ^{##} | 49.30 ^{##} | 36.31 ^{##} | 51.02 ^{##} |
| S.E. regression | 12,169 | 1.74 | 122.9 | 123.8 |
| Adjusted R2 | .18 | .35 | .21 | |
| Observations | 117 | 117 | 117 | 117 |

Notes: (i) standard errors in parenthesis are adjusted for heteroskedasticity (Heckman, 1979); (ii) all regression are adjusted for selectivity, the inverse Mills ratio is not reported (see Svensson, 1999); (iii) *** [**] (*) denote significant at the 1 [5] (10) percent levels; (iv) dependent variable is bribe payments in USD; (v) dependent variable is log of bribe payments in USD; (vi) all variables scaled by employment; (vii) 2SLS estimation, (viii) Wald is the Wald test statistic for testing if the coefficients on *employment*, *profit*, *opportunity cost*, and *capital stock* are zero, ## (#) denotes the rejection of the null hypothesis of zero coefficients at the 1 (5) percent level. Variables are defined in notes to Table 4. Opportunity cost is the product of capital stock and reversibility.

Source: Uganda Enterprise Survey

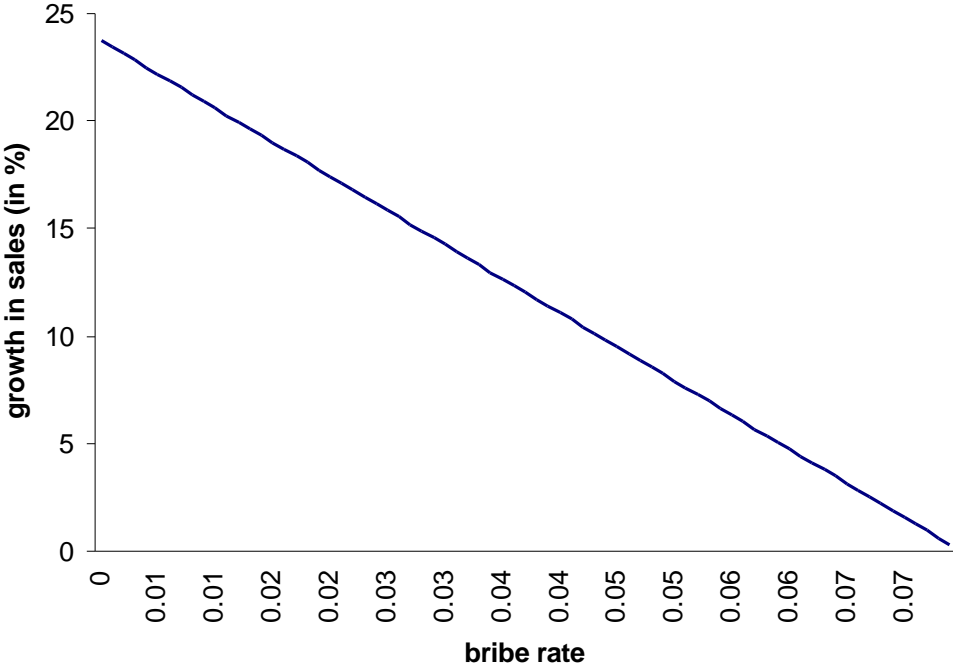
Table 6. Effects on corruption of changes in firm characteristics

| Equation | (1) ⁽ⁱ⁾ <i>Change in bribe payment due to a one standard deviation increase in [USD (st.d.)]</i> | (2) ⁽ⁱⁱ⁾ <i>Change in bribe payment due to a one percent increase in [%]</i> |
|---------------------------------|--|--|
| Capital stock ⁽ⁱⁱⁱ⁾ | 3,696 (0.27) | 0.218 |
| Profits ^(iv) | 4,402 (0.33) | 0.152 |
| Opportunity cost ^(v) | -3,077 (-0.23) | -0.118 |
| Employment | 2,836 (0.23) | 0.632 |

Note: (i) calculations based on Regression 1, Table 5, with standard deviations in parenthesis; (ii) regressions is evaluated at the mean values of the explanatory variables; (iii) calculations based on regression 3, Table 5; (iv) see Svensson (1999) for details regarding the elasticities of corruption with respect to profit, capital, and the reversibility index. Variables are defined in notes to Table 4-5.

Source: Uganda Enterprise Survey

Figure 7. Corruption and growth



Note: Bribe rate is the average bribery to sales rate. The bribe rate varies from 0 to 0.075 (7.5 %) in the sample. The graph is based on the results reported in Fisman and Svensson (1999) and is evaluated at the mean of the controls initial sales (in logarithms), firm’s age (in logarithms), and the average tax to sales rate.

Source: Uganda Enterprise Survey

Figure 8: Partial correlation (graft & connection costs-public grid)

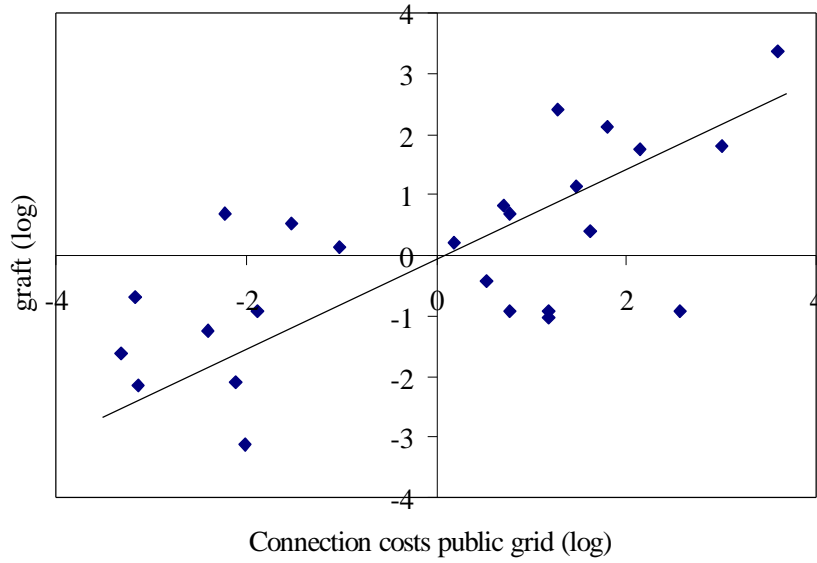
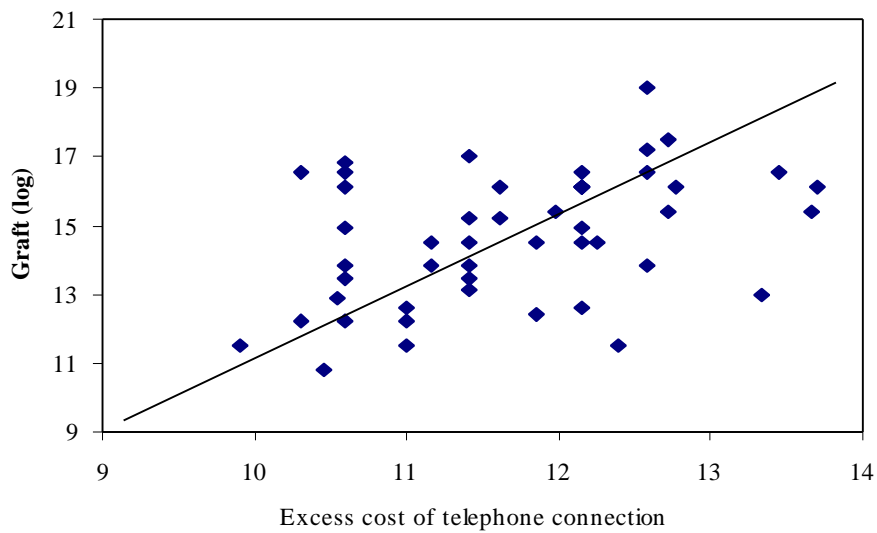


Figure 9: Correlation (graft & excess cost of telephone connection)



Source: Uganda Enterprise Survey

Table 7. Partial correlation between connection costs and bribery

| Equation | (1) ^{(iii),(iv)} | (2) ^(v) |
|---------------------------|---------------------------------------|---|
| Dependent variable | Connection costs public grid (log) | Excess cost of telephone connection (log) |
| Constant | 9.162 (.000) | 10.75 (.000) |
| Bribe payments (log) | .508 (.000) | .068 (.001) |
| Adjusted R2 | .44 | .15 |
| Observations | 25 | 62 |

Note: (i) standard errors adjusted for heteroskedasticity (White, 1980); (ii) p-values in parenthesis; (iii) regression 1 includes a proxy of informality (*infrastructure service*); (iv) connection costs (public grid) has mean 6,330,400 US\$ and median 2,500,000 US\$; (v) excess cost of telephone connection has mean 155,600 US\$ and median 90,000 US\$.

Source: Uganda Enterprise Survey

Table 8. Differences in tax assessment and corruption

| | Tax assessment differ by 0-50 % | Tax assessment differ by 51-100% |
|--|------------------------------------|-------------------------------------|
| Graft rate (bribery USD/employment) | 59.6 | 157.6 |
| Graft level (USD) | 4,530 | 14,450 |
| Time spent dealing with taxes etc. (%) | 15.1 | 16.5 |
| Number of firms | 37 | 18 |

Source: Uganda Enterprise Survey

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