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Working Paper 13 — 026

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OCTOBER 2013

ABSTRACT

Bribes can either put "grease" or "sand" in the wheels of commerce, affecting firm performance (at the micro-level) and, ultimately, economic growth (at the macro-level). These two opposing hypotheses on the role corruption plays in countries with weak institutions raise an important empirical question. This study examines this issue using a unique and exceptionally rich dataset on over 2000 micro, small and medium scale enterprises (SMEs) in over thirty cities in the Philippines. Using instruments such as industry-location averages of corruption to deal with endogeneity, and drawing on unique contextual information on public-private interactions on bribery, this study finds inconclusive evidence that bribery, on average, is detrimental to enterprise growth and performance. Yet bribery also occurs in different contexts, and a more nuanced empirical analysis reveals that bribery has a positive impact on the performance of some firms, notably those that are inordinately delayed by bureaucratic red tape and thus may have to proactively seek advantages to grease the process by bribing public officials. This study finds initial evidence that corruption greases the wheels of commerce for Philippine SMEs, particularly in cities with poor business environments.

Key words: corruption, bribery, business permits, small and medium scale enterprises
JEL: D20, H41, O12, O43, P48

*All views and opinions expressed in this paper are the authors' and do not necessarily reflect those of AIM-SRF, UNICEF or the Asian Institute of Management. Contact author: R.U. Mendoza (rumendoza@aim.edu).

Introduction

The nascent empirical literature on corruption[1] suggests that its impact on overall national economic performance and micro-level firm performance is inconsistent. One strand of literature suggests that corruption has a negative effect on firms, as it tends to throw sand in the wheels of commerce, ultimately proving detrimental to economic development as well. In this view, corruption is more strongly associated with an uncertain business environment, possibly deliberate under-provision of public goods (which then opens the door for rent seeking public officials to solicit bribes), underinvestment in human capital (Reinikka and Svensson, 2005), detrimental impact on institutional development (Aidt, 2009), and strong disincentives for firms to invest and expand (Fisman and Svensson, 2007; Meon and Sekkat, 2005). The secrecy and illegality of corruption creates severe market distortions and uncertainty in the business environment. Firms in corrupt environments are penalized, potentially weakening an entire country's growth and development prospects.[2]

Another strand of literature points out how bribes to public officials could help "grease the wheels" of commerce and enable firms to circumvent bureaucratic red tape that would otherwise weaken competitiveness (Bardhan, 1997). This alternative view of corruption recognizes the heterogeneous impact of corruption across firms, including potential benefits to those who are better able to navigate imperfect institutional and policy environments in developing countries.[3] Ultimately, these two views suggest that the impact of corruption on firms' and countries' growth trajectories remain an empirical issue for study.

We respond to this by empirically analyzing bribery data in over 2000 micro, small and medium scale enterprises (MSMEs) spread across over thirty Philippine cities. While we find inconclusive evidence that bribery is detrimental to enterprise growth and performance more nuanced empirical analysis reveals that bribery has a positive impact on the performance of some firms, notably those that are inordinately delayed by bureaucratic red tape and thus may have to proactively seek advantages to grease the process by bribing public officials.

[1] Throughout this paper, we refer to corruption as the sale of government property by officials for personal gain. Even as the main focus is on bribery, this form of corruption is among the most common as far as enterprises are concerned (Shleifer and Vishny, 1993).

[2] See among others, Klitgaard (1991), Mauro (1995), Shleiver and Vishny (1993) and Fisman and Svensson (2007).

[3] See the seminal work of Bardhan (1997) and a more recent analyses and reviews of literature by Aidt (2009), Campos et al (2010), Galang (2012) and Pande (2008).

In what follows, section 1 provides a brief review of the relevant empirical literature, while section 2 elaborates on the data and methodology used in this study. Section 3 identifies the hypothesis and theoretical framework of the study, Section 4 discusses the main empirical results, and section 5 concludes with suggestions on future research.

I. Related of Literature

The corruption literature suggests that the extent corruption "greases" or "throws sand" in the wheels of commerce depends critically on the over-all institutional and governance context (i.e. including the size, predictability and pervasiveness of corrupt practices), the competitiveness of the industries affected (i.e. as more protected industries may offer more opportunities for rent-seeking), and the extent to which firms are able to navigate political and other networks (i.e. as firms are also actors in the business environment and are not merely passive victims of rent-seeking officials), among other factors.[4]

When focusing on firms and bribery (one common type of political corruption[5]), for example, it is not clear whether firms are victims or victimizers. Corrupt officials may extract pay-offs in exchange for business permits. The firms appear to be the "victim" of public officials that seek to privately benefit from the provision of public services. In the other case, firms may approach officials with bribe offers. Firms themselves engage in rent-seeking activities that confer important advantages, which redound to their bottom line.

Empirical research on corruption follows two main tracks: a) cross-country studies which draw mainly on country-level corruption perceptions data; and b) firm-level research utilizing micro-level enterprise surveys of bribery activities and its potential correlates. The over-all findings point to heterogeneous net effects of corruption across firms, industries and countries.

Cross-country Research on Corruption. Cross country studies such as Aidt, Dutta and Sena (2008), Gyimah-Brempong (2002), Mendez and Sepulveda (2005), Meon and Sekkat (2005), and Ugur and Dasgupta (2011) provide support for the "sand in the wheels" hypothesis—corruption is found to be negatively linked to various proxies for income growth. On the other hand, recent cross-country studies by Dreher and Gassebner (2011) and by Mironov (2005) point to the

[4] For a recent comprehensive review of management literature on corruption, management and firm performance, see Galang (2012). See Aidt (2009; 2003), Campos et al (2010) and Pande (2008) for corresponding recent corruption reviews that draw on the economics literature.

[5] Other types of political corruption include graft, patronage, extortion, and cronyism.

possible positive impact of some corruption, notably in the context of excessively bureaucratic environments and very weak institutions. This appears to support the "grease the wheels" hypothesis, which considers that some corruption may help facilitate commerce in an otherwise business-unfriendly environment (see Table 1).

In addition, a broad review by Campos et al (2010) of 460 empirical estimates of the effect of corruption on growth culled from 41 different studies indicates that about:

- 32 percent of these estimates reveal a significant and negative impact of corruption on growth;
- 6 percent provide evidence of a positive and significant link, and about
- 62 percent of the estimates indicate a statistically insignificant and inconclusive relationship.

These results are inconclusive. Most studies also do not consider the long-run effects of corruption on over-all investment and entrepreneurship.[6] Most cross-country studies only consider a restricted number of years and countries due to the limitations of most datasets. This leaves little room for interpreting results beyond the short-term.

Firm-level Research on Corruption. More recent research on corruption and its economic impact have utilized a small, but still growing number of firm-level datasets. This approach offers some distinct advantages over the cross-country studies. First, using micro-level datasets often provides a richer set of information to model the analysis. While not eliminating the risk of omitted variables, this does increase the flexibility of researchers to consider firm characteristics, the context of its operations and the outcomes of interest (e.g. total sales, profits, etc.). Second, firm-level empirical analyses also allow researchers more maneuvering to mitigate econometric problems that plague cross-country empirical analyses, notably endogeneity across indicators of income and economic growth with almost any variable of policy interest (including corruption). In addition, some forms of corruption such as bribery could also be linked to firm-level performance. On the one hand, corrupt bureaucrats could try to extract bribe payments by targeting more productive firms or those firms with higher willingness to pay the bribe. On the other hand, firm managers and agents could also actively seek favors from public officials, by

[6] Answering this question requires endogenizing the countries' levels of corruption, which would prove a difficult task (Dreher and Gassebner, 2011).

bribing them in exchange for these de facto advantages over other firms. Endogeneity is a key challenge for empirical research. A wider set of instrumental variables and other empirical approaches could be deployed using firm-level datasets.[7] Finally, firm level data typically contains richer information on the decision-making unit of interest—the firm (or the entrepreneur)—in turn providing richer and more practical insights for both business managers and policymakers.

In recent years, firm-level datasets have become increasingly available to researchers, providing the means to analyze the impact of corruption on firm performance, or the micro-level analogue of the corruption-economic growth conundrum. These firm-level studies typically analyze the impact of bribery by firms of public officials on firm performance indicators, such as investments, sales growth and profits. The evidence is mixed. On the one hand, some studies suggest that increased bribery is detrimental to the firm, and that it throws sand in the wheels of firm performance. Bribery is linked to lower investments (Asiedu and Freeman, 2009), weaker employment growth (Aterido, Hallward-Driemeier, and Pages, 2007) and suppressed firm output growth (Fisman and Svensson, 2007; Hallward-Driemeier, Walllsten and Xu, 2006; Seker and Yang, 2012). On the other hand, and much like the country-level studies, some firm-level studies are either inconclusive or opposite, bribery is linked to stronger firm performance.

[7] Instruments for corruption include industry and location averages of bribery, which could help explain general propensities for bribery that may not necessarily be linked to firm performance (the typical variable of interest on the right hand side) (e.g. Fisman and Svensson, 2007). Aidt et al (2008) utilizes the GMM approach.

Table 1. Summary of Selected Studies on Corruption and Economic Growth Using Cross-Country Data

Authors	Dataset	Main Findings
Aidt, Dutta and Sena (2008)	About 70 industrial and developing countries during the period from 1970-2000	• Using measures of corruption perceptions developed by Transparency International and the World Bank, this study finds a one point reduction in the corruption perceptions index increases growth in the short-run by 0.5-0.6 percentage points and by 0.37-0.39 percentage points in the long-run.
Dreher and Gassebner (2011)	43 countries over the 2003-2005 period	• The relationship between corruption and entrepreneurship changes with the over-all context of the firm. At near zero cost of starting a business, an increase in the corruption perception index by 1 index point reduces entrepreneurship by 0.31%; however, at the maximum cost of starting a business (in the sample, 131.3) a corresponding increase in corruption increases entrepreneurship by 4.2%. • With a minimum of 2 days required to start a business, an increase in the corruption index by 1 point reduces entrepreneurship by 0.7%; however, at the maximum of 152 days to start a business, it results in a 3% increase in entrepreneurship.
Gyimah-Brempong (2002)	Unbalanced panel of 21 African countries during 1993-1999	• Unit increase in corruption (proxied by the Transparency International Corruption Perceptions Index) reduces the growth rates of GDP by between 0.75 and 0.9 percentage points and reduces per capita income between 0.39 and 0.41 percentage points per year. • In addition to slowing the growth rate of per capita income, corruption is also associated with high income inequality.
Mendez and Sepulveda (2005)	85 industrial and developing countries during 1960-2000	• Growth maximizing level of corruption (proxied by IMD's and Transparency International's corruption indicators) is greater than zero, and corruption is beneficial for economic growth and lower levels of incidence and detrimental at high incidence.
Meon and Sekkat (2005)	71 developing countries during 1970-1998	• Using various corruption indicators, this study finds that corruption has a negative effect on both growth and investment. • The negative effect of corruption is more severe with weaker indicators of quality of governance, suggesting evidence that corruption "sands the wheels" more than it "greases the wheels"
Mironov (2005)	141 industrial and developing countries during 1996-2004	• "Bad corruption" (or corruption associated with weaker institutions) is negatively associated with GDP growth, while "residual corruption" (or corruption that is uncorrelated with other governance indicators) is positively linked to growth in countries with poor institutions. • Residual corruption is also positively associated with capital accumulation and productivity growth in developing countries.

Ugur and Dasgupta (2011)	Meta-analysis of over 100 cross-country studies of corruption in low income countries	• Unweighted mean of reported elasticity estimates (on the impact of corruption on per capita GDP growth) is 1.07, suggesting that a one-unit decrease in perceived corruption (based on the corruption perception indicator) is associated with an increase in per capita GDP growth of about 1.07 percentage points.

Source: Authors' Compilation

Table 2. Summary of Selected Studies on Corruption and Firm Growth using Firm Level Data

Authors	Dataset	Main Findings
Asiedu and Freeman (2009)	10,032 firms in 81 countries covered by the World Bank Enterprise Surveys during the period 1999-2000	• Firm level measures of corruption (proxied by self-reported bribery incidence) are negatively linked to investment growth in the pooled sample. • Country level measures of corruption (proxied by different indicators, including World Bank, Transparency International and others) are negatively associated with investment growth only for Transition countries in the sample. • For Transition countries, a one standard deviation increase in corruption (depending on the exact measure) leads to a 9.71 to 11.19 percent decline in investment.
Aterido, Hallward-Driemeier, and Pages (2007)	70,000 enterprises spread across 102 developing and 5 high income economies covering six regions over the period 2000-2006	• Smaller firms complained more about corruption, and small firms are more likely to pay bribes, compared to micro and large firms. The bribe expressed as share of sales, on average, is about one-third higher for small firms, compared to other sized firms. • Increased incidence of bribes of 10 percentage points reduces the employment rate of large firms by approximately 1.4 points, and increases the growth of micro firms by 1.4 percent.
De Rosa, Gooroochurn and Gorg (2010)	11,000 firms in 28 countries of Central and Eastern Europe and Central Asia covered by the Business Environment and Enterprise Performance Survey (BEEPS) in 2009	• Corruption has, on balance, a negative impact on enterprise performance measures; and highly corrupt environments have a much larger impact on firm performance. • As the value of the corruption perceptions index (CPI) increases (or as the environment becomes less corrupt), the total effect of bribery on firm productivity becomes less negative, and at a certain threshold becomes positive. • Countries with an institutional (CPI) score greater than 2.99 demonstrate a positive link between bribery and firm productivity.
Fisman and Svensson (2007)	243 Ugandan SMEs, surveyed in 5 locations and covering 14 different industries in 1998	• Using industry location averages as an instrument for bribery, there is evidence that both taxation and bribery are negatively linked to firm growth. • One percentage point increase in bribery rate is associated with a reduction in firm growth of three percentage points (an effect that is three times that of taxation).

Hallward-Driemeier, Walllsten and Xu (2006)	1500 enterprises in 5 Chinese cities	• Reducing the mean score of corruption (measured by an indirect question on the amount of bribes required) by 1 standard deviation positively affects sales growth by 24.7 percent
Malesky and Samphantharak (2008)	500 firms in 10 Cambodian provinces during the 2004-2006 period	• Firms exposed to a change in provincial governor (a shock to their bribe schedule) invest significantly less in subsequent periods. • Corruption (indicated by survey data and commercial sex workers) is significantly lower in provinces with new governors.
Rand and Tarp (2010)	1661 SMEs in Vietnam, covering 2005 and 2007	• Bribe incidence is empirically linked to firm-level differences in: a) visibility; b) sunk costs; c) ability to pay; and d) level of interaction with public officials. • Becoming formal is associated with higher revenue growth, and it outweighs the additional bribe cost of formalization.
Seker and Yang (2012)	Over 6500 firms in Latin America and the Caribbean	• Using macro-level averages of corruption (across locations and sectors) to address the endogeneity of corruption and firm performance, these authors found evidence that firms engaged in bribery actually grew 23.6 percent slower than firms not engaged in bribery.
Wang and You (2012)	12400 firms in 30 out of 34 Chinese provinces, covering 31 industries, surveyed in 2005	• Corruption (proxied by the proportion of days within a year that a firm interacts with government departments in taxation, public security, environment and labor and social security) is positively linked to firm sales income. • Nevertheless, they also find evidence that corruption is not a binding constraint on firm growth in an environment of underdeveloped financial markets – corruption begins to deter firm growth in the context of more developed financial markets.

Source: Authors' Compilation

An instance of conflicted results is a study of about 70,000 firms in over 100 countries by Aterido, Hallward-Driemeier, and Pages (2007). Increased bribery was shown to be detrimental to the employment growth of large firms. However, this same study found evidence that bribery was positively linked to the growth of micro-firms.

A study of 11,000 firms in 28 countries of Central and Eastern Europe and Central Asia covered by the Business Environment and Enterprise Performance Survey (BEEPS) in 2009 by De Rosa et al (2010) uncovered evidence that corruption generated, on balance, a negative impact on enterprise performance measures. Highly corrupt environments produced a much larger negative impact on firm performance. Nevertheless, according to this same study by De Rosa et al (2010), as the value of the corruption perceptions index (CPI) increased (or as the environment became less corrupt), the total effect of bribery on firm productivity became less negative, and at a certain threshold switched to a positive link. In particular, countries with an institutional rating greater than a certain threshold value demonstrated a positive link between bribery and firm productivity.

Taken together, these results suggest that corruption could result in different outcomes, depending on the specific context and characteristics of the firm. Hence, firm-level studies also point to possible heterogeneous effects of corruption on firm performance. The corruption-firm performance link is also as inconclusive as the corruption-economic growth link. Contributing to the evidence and understanding in this area motivates the analyses undertaken in the present study.

II. Data and Methodology

The main source of data for this paper is the AIM Enterprise Survey[8], which is conducted by the Asian Institute of Management in collaboration with government partners such as the National Competitiveness Council of the Philippines. The survey was conducted during a period in the 2nd and 3rd quarters of 2012. A total of 2,040 micro, small and medium scale enterprises (SMEs) were included in the 2012 survey. Information on the firms offers the opportunity to assess their

[8] Prior to 2012, the AIM Enterprise Survey was conducted for the first time during the 2nd and 3rd quarters of 2009. The corruption section for the two rounds of surveys however asked different bribery questions. The 2009 corruption question is a binary variable—whether respondent or someone s/he knows ever engaged in bribery. The number of firms surveyed for both years were: Over 2,000 firms in the 2012 survey; and 1,740 firms in 2009. (Over 1,000 firms from 2009 were tracked down and interviewed again in 2012). Likewise, the coverage of the cities in the 2012 survey increased from 29 to 34.

performance against factors of interest, including bribery incidence. The dataset consists of firms from 34 Philippine cities[9] , which span across 16 regions and 13 industries.

Sixty SMEs in each of these cities were interviewed in this study. The number however does not assume the specific city-level characteristics of firms. In light of allowing a broader inference of results, probability weights were generated to account for differences in the average employment sizes subsumed under micro, small and medium enterprises in each of the city covered in this study. The provision of weights in effect provides more value for firm-level variables which have larger employment sizes based on city aggregates. The figures therein the 2011 Updating of the List of Establishments conducted by the National Statistics Office was used to proxy and generate the 2012 weights. Note that 3 observations posted employment sizes greater than 200: This means that the firms have exceeded the threshold allowed to be considered as a micro, small or medium enterprise in the Philippines. These observations were subsequently dropped.

Similar to earlier studies, steps were taken to strengthen the data collection process on the sensitive topic of corruption.[10] First, data on bribery was collected using a widely used question in previous surveys to generate sensitive information: "*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?*". Thus, indirect approach allows the respondent to provide information without being implicated; and this is more likely to generate truthful responses. Second, the survey was implemented with the support of partners such as the Asian Development Bank and the National Competitiveness Council of the Philippines. The credibility of these institutions helped strengthen the firms' participation in the survey, and emphasized the development-oriented focus of the initiative. Third, the corruption questions were asked in the latter part of the survey instrument to allow the enumerator to first elicit confidence from the respondent. Fourth, enumerators for this survey also received special

[9] These cities are Angeles City, Bacolod City, Baguio City, Batangas City, Butuan City, Cagayan de Oro City, Cebu City, Cotabato City, Dagupan City, Davao City, General Santos City, Iligan City, Iloilo City, Lapu Lapu City, Legazpi City, Lucena City, Mandaue City, Marikina City, Naga City, Olongapo City, Ormoc City, Pagadian City, Pasay City, Puerto Princesa City, Quezon City, San Fernando City (La Union), Santiago City (Isabela), Surigao City, Tacloban City, Taguig City, Tagum City, Tuguegarao City, Valenzuela City, and Zamboanga City.

[10] Similar strategies have been used by Fisman and Svensson (2007, page 68).

training to engage more effectively with entrepreneurs and managers who were likely to serve as respondents. Finally, feedback mechanisms were put in place so that enumerators facing challenges in eliciting responses would report back to the research team for possible adjustments in the survey strategy. This allowed the research team to be more certain about the quality of the responses.

Note that the bribery question not only asked for the percentage of informal payments paid by firms in 2011, but also the percentage paid in 2009. Lagged corruption (i.e., 2009 corruption asked in the 2012 survey) will be used in this study for robustness purposes. This is anchored on the assumption that corruption takes time before its repercussions eventually affect the performance of commerce. The same goes for another key variable, taxation, wherein lagged taxes are used to verify effect on commerce: taxes paid to the government, for instance, are often paid within or even after the calendar year, and so its effects may belatedly affect firm growth.

Asking respondents to recall lagged corruption and taxation questions (i.e., amounts paid a number of years earlier than the time of interview), that figures are self-reported, and that corruption in itself is a hidden activity can result in measurement errors. Such errors however can be solved using grouped means as instrumental variables. Fisman and Svensson (2007) used industry-location averages of corruption and taxation to address endogeneity issues and measurement errors in the data.

Of the 2,037 firms in the dataset, 386 indicated that they ‘don’t know’ how much was paid for bribery-related activities in 2009. Sixty-nine firms ‘refused’ to provide an answer, and 149 firms did not provide a reason for not providing any bribery figure. 1,255 firms said that there were no informal payments paid by their firms. In aggregate, 178 firms indicated a bribery percentage greater than 0. In light of missing data, tests of proportions were made for potential selection bias. Testing whether the same percentage of those which declared informal payment figures and those which didn't have similar sales growth, we do not reject the null hypothesis since we have a 2-sided p-value of .1092. However, those which provided bribery figures have higher sales growth than those which did not ($Pr(Z < z) = 0.0546$). Higher employment growth is also confirmed for those which indicated bribery figures (significant at the 10% level; $Pr(Z < z) = 0.0965$).

Given potential selection bias in the sample, unique information on the specific public-private interactions of bribery were drawn upon to explain differences in firm performances.

Respondents were asked the following Corruption Motivation question: "*What is the usual motivation in paying 'informal payments' to facilitate a business transaction with the government?"* and given the following choices to select: "*a) a government official outright asked for it", b) inordinate delay in business related process with the government, c) voluntary from the firm to obtain favors and get ahead of other businesses"*. The sample indeed is driven by firms which are motivated to engage in bribery activities due to delays in transactions with the government; and firms which make informal payments voluntarily to get ahead of their competitors. On the aggregate, nearly 89% of the firms sampled indicated either "b" or "c". Conversely, about 11% indicated that bureaucrats approached respondent firms for informal payments.

Table 3 has descriptive statistics for key variables in the empirical analysis. The summary shows the weighted means and standard deviations of variables.

Table 3. Summary Statistics of Key Variables

Variable	Observations	Mean	Standard Deviation
sales growth	1549	0.03824	0.32944
employment growth	1780	0.00815	0.13555
bribery in 2009	1433	0.00966	0.04918
taxes in 2009	1360	0.15463	0.12371
ln (firm age)	2026	2.22613	0.94737
ln (total sales in 2009)	1550	13.51675	1.60880
Trade	2037	0.02438	0.15427
college graduate	2035	0.24389	0.37123
concentration of dynasty	2037	0.21563	0.15175

III. Hypothesis and Theoretical Framework

The hypothesis of the study is: Corruption can be beneficial, detrimental, or have ambiguous effects on firm performance, depending on the context under which corruption is taking place.

The following additional assumptions are also considered:

1. Both the firm and the bureaucrat are rational, self-interested, and utility-maximizing.
2. The bureaucrat may or may not have information on the firm's expected/future performance.
3. The amount of bribery levied depends on the bureaucrat's knowledge on the present and/or future performance of the firm, the firm's propensity to pay, and the probability of the bureaucrat getting caught.
4. The effect of corruption on firm performance depends on public-private interactions of bribery. It is either that a) the firm approaches the bureaucrat or b) the bureaucrat approaches the firm and demands for informal payments.

In light of the hypothesis, the main objective is to analyze the potential drivers behind firm performance (proxied by sales growth and employment growth), with a focus on the possible impact of corruption (as measured by bribery incidence). The empirical model is based on Fisman and Svensson (2007), and is expressed here as follows:

$$GROWTH_i = \beta_0 + \beta_1 BRIBE_i^{INS} + \beta_2 X_i + \varepsilon_i$$

The indicator for firm performance[11] is proxied by sales growth, and defined as: $GROWTH_i = [\log(2012\ Sales_i) - \log(2009\ Sales_i)]/2$. As regards employment growth, firm performance is calculated as: $GROWTH_i = [\log(2012\ Number\ of\ Employees_i) - \log(2009\ Number\ of\ Employees_i)]/2$

The indicator for corruption, $BRIBE_i^{INS}$, is the percentage of bribery (as a function of sales) indicated by each firm. Here, endogeneity is a key challenge, since rent-seeking bureaucrats may target more productive firms, while at the same time, bribery itself may negatively impact on

[11] Profit is not used as an indicator for firm performance in this study. Firm profits can be subjected to reporting bias (as firms would be reluctant to disclose their profits) and that expenses/losses by firms can actually be explained by other factors (e.g., macroeconomic climate).

firm performance. In response, we use industry-location averages[12] of bribery as instruments for the bribery variable, hence the superscript *INS*. As noted in the literature, the industry-specific factors behind bribery are influenced by technology and the rent-extraction propensities of bureaucrats in that industry. Both are plausibly assumed to be exogenous to the firm, and therefore not directly linked to firm performance (Fisman and Svensson, 2007). Finally, X_i is a vector of explanatory variables for firm performance widely used in the literature, including the taxes paid to the government, firm age, firm size, whether the firm exports or imports from other countries, educational attainment of firm managers and employees, and political structure of the city that the firm is located in. Table 4 provides a brief description of each variable and their expected empirical link to bribery incidence, based on the theoretical literature.

Similar to bribery, taxes paid by firms to the government have an endogenous relationship with firm growth (Fisman and Svensson, 2007). Given the expectation of better performance, firms would perhaps be more inclined to report more earnings and pay taxes more generously. Likewise, on the assumption that tax collectors knew of this information, they would try to extract higher tax payments from firms.

Aside from the corruption and taxation variables used as explanatory variables, the control variables in our model are consistent with the model used by Fisman and Svennson (2007): firm age, firm size and export/import orientation. Firms are expected to grow depending on its size during the previous years, as well as the number of years of operation. Firms which engage with other overseas counterparts through exports and/or imports are expected to have more interaction with tax officials. These firms may also be more recognized and targeted by tax officials more so than other non export/import firms.

Other variables in the regression and likewise pertinent to firm growth include: human capital and features of the firm's city (Dethier, Hirn and Straub, 2010). Human capital is proxied by the educational attainment of firm managers and employees. A city-level characteristic that we are interested in is the political structure of the city: this is proxied by the concentration of the political dynasty in the firm's city. Firms operating under political dynasties may mean that the public officials that firms are transacting with are most plausibly affiliated with the political dynasties. Unless dynasties change, firms would most probably be transacting with the same

[12] Industry classification is based on the Philippine Statistical Industrial Code (PSIC)'s categories, whereby 13 industries are identified in the sample (out of 16 industries possible). Locations are categorized at the regional level.

officials for the duration of the political dynasties' terms. Thus, firms may know the officials in these different government offices and may be given advantages that in turn can be beneficial for firms. Firms affiliated with the sitting dynastic officials' rivals may experience bureaucratic hold-ups in business-related government transactions, in turn affecting firm performance.

Table 4. Possible Factors behind Firm Performance

Variable	Data Description	Expected Link	Theoretical Underpinning
bribery incidence	bribe amount in Philippine peso as share of total sales (2009)	+ / -	The link is positive if bribery enables firms to overcome bureaucratic red tape and weak institutions; negative if bribery weakens the competitiveness of firms and triggers rent-seeking rather than efficiency-minded investments. In rent-seeking situations, some firms may demonstrate a positive link between bribery and firm performance, due possibly to advantages conferred by corrupt public officials on the firm.
taxes	taxes[13] (amount in Philippine peso) as share of total sales (2009)	-	Taxes imposed on firms are costs and hinder firm growth. Literature supporting the negative link between growth and taxation includes Aidt (2009), Fisman and Svennson (2007) and Mauro (1995).
ln (firm age)	natural logarithm of the firm's age	+/-	Firm size is a control for firm-level characteristics. Older firms (suggesting more visibility) can be targeted by tax officials for bribe extraction. Older firms moreover may also be on the 'maturity stage' of growth and thus grow slower than firms in the 'start-up' stage.Older running firms may also have economies of scale and friendlier ties with institutions (e.g., banks, government offices) (Gbetnkom, 2012).
ln (sales in 2009)	natural logarithm of firm sales in 2009	+/-	Measuring firm size according to sales can affect both informal payments and future growth (e.g., Fisman and Svensson (2007), Asiedu and Freeman (2009)). Depending on firm size, smaller firms may be bounded by certain constraints (e.g., access to

[13] Taxes refer to those paid to the internal revenue and local government units.

			finance) that hinder them to grow. While having comparative advantage than other smaller firms, larger firms may also be targeted by bureaucrats for bribe extraction. Firm size (and thus heightened visibility to tax officials) can influence bribe extraction by bureaucrats (Svensson, 2003).
trade	1 if firm trades in the ASEAN/outside ASEAN	+	The ability to trade with international partners allows firms to export goods and increase their revenues and firm performance. Firms can likewise import goods and provide a better product line to its consumers, and this in turn can affect firm growth. Note however that engagements in trade makes firms more susceptible to bribe extraction than those which do not.
college graduate	proportion of employees with at least a 4-year degree course	+	As a measure of the level of human capital of firms, studies commonly point to education as valuable and advantageous to the growth of firms.
political dynasty	proportion of dynastic officials over relevant posts (e.g., mayor, vice mayor, councilor and district representative) in the city	+/-	Concentration of power in the hands of a few political families for a number of election terms help reflect the type of local government that firms interact with (and thus may reduce uncertainty in firm's engagement with the government). This type of interaction may help grease the wheels in order to allow firms to get ahead. Yet, this variable may go the other way as well when political dynasties are inefficient in terms of delivering the public goods governments ought to deliver or that firms are rivals with the sitting dynastic politicians. This in turn may negatively affect the growth of firms.

Source: Authors' Synthesis Based on the Empirical Literature.

IV. Empirical Results

Running OLS regressions without addressing endogeneity show the significantly positive correlations between corruption and sales growth. A one-percentage point increase in corruption

increases growth by over 1.1 percentage points. Using Hausman's test[14] to confirm endogeneity, the coefficient increases when endogeneity issues are addressed using industry-averages of corruption as an instrumental variable. The IV regression[15] indicates a coefficient of over 8 percentage points. (See Table 5.)

While the empirical literature generally indicates a negative relationship between taxation and firm sales growth, this relationship is shown to be ambiguous based on this study's empirical results. This result holds even when endogeneity issues between growth and taxation are controlled for. Firm age, trade orientation of firms, and dynasty concentration of cities similarly did not provide significant correlations with firm growth in the IV estimation results.

Significant variables in the regression results include the logarithm of firm size (as measured by the total sales in 2009). Results in the IV estimation indicate that a one percentage point increase in the logarithm of firm size decreases firm growth by less than one percentage point (around 0.07). The educational attainment of firm managers/owners positively relates with sales growth. Results suggest that a one-percentage point increase in the proportion of employees with at least a 4-year degree course increases growth by around 0.25 percentage points.

Other potential independent variables were added along with key variables in the regressions, such as the degree of market competition and the level of engagement in the public sector. Such variables however did not yield any significance, and thus are no longer reported.

This study uses information on the context and possible motivations driving firms to engage in bribery activities. This allows us to provide more nuanced evidence on the relationship between corruption and growth. As indicated in the previous section, a majority of the respondents indicated reasons suggesting that they engaged in bribery to "grease the wheels" of commerce. That is, they bribed in order to overcome inordinate delays in government processes, or to gain an advantage in business. In both cases, firms approached the bureaucrats. In the sample, relatively fewer firms were approached by bureaucrats. In light of such information, we

[14] In this test for endogeneity, the first regression consists of regressing corruption with the instrument and the other explanatory variables. The residuals from this regression is further used as an explanatory variable (along with the control variables) in the second regression with firm growth as the dependent variable. Results showed that the residuals are statistically significant to firm growth. This confirmed endogeneity between growth and corruption. See Hausman (1978).

[15] This IV estimation technique uses the two-stage least squares (2sls) method. In this method, the first-stage regression consists of corruption being regressed with the instrument and the explanatory variables. Fitted value of corruption is predicted. The predicted/fitted value of corruption is used for the second-stage regression. In the second-stage, firm growth is regressed with all the independent variables, and the fitted value of corruption.

run regressions which consider the following two main sets of public-private interactions: (a) firm approaches the bureaucrat, and (b) bureaucrat outright ask for informal payments. Bribery motivations indicating "inordinate delays in business related processes with the government" and "voluntary from the firm to get ahead of businesses" are subsumed under "a" on the assumption that both the former and latter motivates firms to approach the bureaucrat and engage in advantageous bribery. On the other hand, firms that are approached by bureaucrats may not necessarily produce advantages for the firms—instead this situation appears to suggest a form of "corruption tax" levied by the bureaucrat. Differentiating the context of bribery activities in this way allows us to check whether or not the effect of corruption changes depending on the motivations indicated by firms.

As expected, models predicated by "a" showed a significantly positive relationship between corruption and firm sales growth. Similar to the Full Sample (where all firms are included even if motivations for bribery differ), the coefficients for corruption become larger when endogeneity and measurement errors are addressed. Values range from over 8.6 to 8.9 percentage points. (See Table 6.)

In the case of regressions reported according to motivation "b" wherein the government official outright demanded bribery payments, such a relationship between bribery payments and firm sales growth becomes ambiguous (i.e., no statistical significance between corruption and firm performance). These results are not surprising given anecdotal evidence that those which are asked for informal payments are more often than not firms which are constricted to pay for such costly demands. Such costly payments may even ultimately retard the performance of firms. (See Table 7.)

An ambiguous relationship between corruption and growth is reinforced when firm performance is expressed using employment growth. This is true even when regressions are not distinguished according to motivations for bribery engagements (See Table 8). Inconclusive evidence on the relationships between employment growth and corruption are confirmed in the models predicated by motivations. (See Tables 9 and 10).

Table 11 provides a synthesis of the regression results indicating the effect of both corruption and taxation on firm growth, as differentiated according to sales growth and employment growth and according to the impetus for engagement in bribery. The over-all results

indicate that bribery has an ambiguous link to firm performance, on average. However, the link tends to be clearer when the bribery context is specified.

Dealing with Outliers. To determine the robustness of the estimation results, potential outliers are identified using the *bacon* or the "blocked adaptive computationally efficient outlier nominators" method suggested by Billor, Hadi and Velleman (2000).

Outliers are determined for sales growth, corruption and taxes. The 99th percentile of the chi-squared distribution is chosen as a cut-off value for distinguishing between outliers and non-outliers. This means that observations which have distances larger than the 99th percentile are marked as outliers. Four outliers are identified for the concerned OLS variables. Three of the outliers detected posted bribery figures between 40% and 80% of total sales. One outlier has a change in the logarithm of total sales of over three. When the method is applied for the second stage of the IV regression, a single outlier is detected. Removing *bacon* outliers for both the OLS and IV estimations shows the following results (See Table 12): corruption in the OLS model now becomes insignificantly linked with growth. However, corruption in the IV specification remains significant at the 10% level, with a coefficient value of 8.5. Repeating the regressions for motivation model "a", the IV estimation shows that an increase in bribery by a percentage point results to an increase in growth by 8.6 percentage points. Results for both models may imply that the outliers are somehow exaggerating the effects of corruption on growth (i.e. more especially on the OLS specifications). This provides grounds for not including the outliers in the regressions. Notably, since outliers come from observations whose motivations are subsumed under "a", regressions for motivation model "b" remain unchanged.

The selection of threshold values used to isolate outliers from non-outliers is determined by researchers, and there are no metrics for the percentile choice (Weber, 2010). Repeating the process by using the 95th percentile (i.e., a lower percentile determines a higher percentage of outliers nominated) now leads to 45 outliers identified for the OLS variables, and 3 outliers determined for the IV specification. When outliers are dropped and both regressions are re-estimated (Table 13), the coefficient of corruption for the IV regression in the full sample model becomes smaller (i.e., 5.8) although figures remain significant at the 5% level[16]. Likewise,

[16] Using the 90th percentile as parameter, similar results are generated when outliers are omitted: the informal payments in the IV model showed a significant value of over 5 percentage points.

motivation models predicated by "a" showed that a percentage point increase in corruption translates to about 5.9 percentage points of growth (robust at the 10% level) when endogeneity is curbed. Excluding the outliers thus results in a more conservative effect of corruption on firm performance. In summary, the effect of corruption on growth remains positive for the IV specifications in the full sample model and motivation model "a" (and even when outliers

V. Conclusion

According to the growing literature on corruption and firm performance, bribes can either put "grease" or "sand" in the wheels of commerce. Bribes could therefore affect firm performance at the micro-level and, ultimately, economic growth at the macro-level. Therefore, the impact of corruption on firm performance is an empirical question. This study examines this issue using a unique and exceptionally rich dataset on over 2000 micro, small and medium scale enterprises (SMEs) in over thirty cities in the Philippines. The study turns to an instrumental variables technique to address the possible endgoeneity of corruption and firm performance. It also draws on unique contextual information on public-private interactions on bribery, in order to ascertain how exactly bribery can affect firm performance. This approach acknowledges the possibility raised by earlier studies that corruption could be similar to a tax on firms (since it may not necessarily offer any advantages), or corruption could also be akin to a form of compensation paid to the bureaucrat for providing slightly better public services. According to the empirical results herein, there is inconclusive evidence that bribery, on average, is detrimental to enterprise growth and performance. Yet bribery also occurs in different contexts, and a more nuanced empirical analysis reveals that bribery has a positive impact on the performance of some firms, notably those that are inordinately delayed by bureaucratic red tape and thus may have to proactively seek advantages to grease the process by bribing public officials. This study finds initial evidence that corruption greases the wheels of commerce for Philippine SMEs, particularly in cities with poor business environments.

Table 5. Effect of Corruption and Taxation on Sales Growth (full sample)

Method	OLS				IV			
Dependent Variable: Sales growth	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
infpayment0	1.15793***	1.15813***	1.25926***	1.13685***	8.77021**	8.88170**	8.65800**	8.51043*
	[0.33687]	[0.33671]	[0.29487]	[0.31285]	[4.43469]	[4.52258]	[4.37235]	[4.43935]
totaltaxes0	0.09867	0.09856	0.07558	0.05998	-0.34505	-0.36582	-0.34805	-0.33937
	[0.13197]	[0.13275]	[0.12758]	[0.12403]	[0.43139]	[0.44694]	[0.42272]	[0.43216]
Lnage	-0.02578	-0.02580	-0.02694	-0.02295	-0.00490	-0.00590	-0.00924	-0.00906
	[0.01826]	[0.01839]	[0.01758]	[0.01724]	[0.02502]	[0.02539]	[0.02376]	[0.02356]
				-	-	-	-	-
lnsize09	-0.03223**	-0.03224**	-0.03963**	0.04075***	0.06824**	0.06876**	0.07950**	0.07902**
	[0.01482]	[0.01483]	[0.01537]	[0.01521]	[0.03059]	[0.03092]	[0.03178]	[0.03206]
Trade		0.00157	0.00458	-0.00432		0.07978	0.07967	0.07702
		[0.04485]	[0.04524]	[0.03950]		[0.07057]	[0.07281]	[0.07546]
Collegegrad			0.15742*	0.15772*			0.25200**	0.25032**
			[0.08540]	[0.08544]			[0.11202]	[0.11359]
Dyncon				0.33436***				0.04551
				[0.11680]				[0.15621]
Constant	0.51602**	0.51612**	0.58758***	0.51806**	0.94409**	0.95300**	1.05172**	1.03467**
	[0.21404]	[0.21422]	[0.22024]	[0.20534]	[0.42012]	[0.42590]	[0.42249]	[0.43943]
Observations	928	928	927	927	928	928	927	927
R-squared	0.04968	0.04968	0.07452	0.09499				

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 6. By Motivation(a): Firm Approaches the Bureaucrat

Method	OLS				IV			
Dependent Variable: Sales growth	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
infpayment0	1.20919***	1.20954***	1.30771***	1.17104***	8.82571*	8.92945*	8.74313*	8.67799*
	[0.31560]	[0.31531]	[0.27560]	[0.30078]	[4.72825]	[4.81454]	[4.69591]	[4.81185]
totaltaxes0	0.08495	0.08475	0.06143	0.04846	-0.34389	-0.36542	-0.35740	-0.35429
	[0.13479]	[0.13555]	[0.13052]	[0.12679]	[0.44005]	[0.45653]	[0.43555]	[0.44487]
Lnage	-0.02799	-0.02804	-0.02864	-0.02505	-0.00888	-0.00988	-0.01201	-0.01191
	[0.01950]	[0.01963]	[0.01859]	[0.01820]	[0.02662]	[0.02702]	[0.02522]	[0.02513]
				-	-	-	-	-
lnsize09	-0.03335**	-0.03336**	-0.04134**	0.04259***	0.06971**	0.07015**	0.08150**	0.08130**
	[0.01607]	[0.01608]	[0.01665]	[0.01649]	[0.03206]	[0.03235]	[0.03332]	[0.03368]
Trade		0.00282	0.00439	-0.00146		0.07816	0.07651	0.07555
		[0.04588]	[0.04714]	[0.04041]		[0.07196]	[0.07516]	[0.07757]
Collegegrad			0.16617*	0.17084*			0.25733**	0.25695**
			[0.09268]	[0.09288]			[0.11962]	[0.12035]
Dyncon				0.35242***				0.02395
				[0.12651]				[0.16240]
Constant	0.53800**	0.53818**	0.61532***	0.54255**	0.97336**	0.98147**	1.08664**	1.07832**
	[0.22912]	[0.22933]	[0.23571]	[0.21917]	[0.44285]	[0.44834]	[0.44540]	[0.46625]
Observations	840	840	839	839	840	840	839	839
R-squared	0.05245	0.05246	0.07839	0.09960				

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 7. By Motivation (b): Bureaucrat Asks for Informal Payments

Method	OLS				IV			
Dependent Variable: Sales growth	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
infpayment0	0.10091	0.09545	0.15993	0.12226	8.17203	8.28525	6.55496	3.30270
	[0.34912]	[0.35386]	[0.34518]	[0.37884]	[7.91075]	[7.98492]	[4.70040]	[3.20634]
totaltaxes0	0.59824**	0.60106**	0.59149**	0.52119**	-1.00582	-0.82328	-0.22759	-0.06298
	[0.27785]	[0.28037]	[0.27181]	[0.25696]	[2.49363]	[2.19267]	[1.44398]	[1.06734]
Lnage	0.01373	0.01414	0.01199	0.02527	0.05653	0.05469	0.03187	0.03713
	[0.02672]	[0.02719]	[0.02612]	[0.02833]	[0.06835]	[0.06782]	[0.04904]	[0.03469]
lnsize09	-0.01599	-0.01583	-0.01673	-0.01773	-0.03443	-0.03817	-0.04115	-0.02801
	[0.01434]	[0.01445]	[0.01393]	[0.01353]	[0.03856]	[0.03869]	[0.03027]	[0.02645]
Trade		-0.03785	-0.02917	-0.13924		0.17898	0.15878	-0.05366
		[0.06949]	[0.06251]	[0.09215]		[0.25222]	[0.18327]	[0.12381]
Collegegrad			0.03095	-0.01471			0.17396	0.05301
			[0.07933]	[0.08415]			[0.16205]	[0.10903]
Dyncon				0.24947				0.28730
				[0.15473]				[0.21560]
Constant	0.14396	0.14096	0.14897	0.10597	0.43380	0.45824	0.43067	0.23547
	[0.19074]	[0.19290]	[0.18491]	[0.18737]	[0.52125]	[0.53672]	[0.40370]	[0.29274]
Observations	86	86	86	86	86	86	86	86
R-squared	0.08555	0.08607	0.09009	0.12892				

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 8. Effect of Corruption and Taxation on Employment Growth (full sample)

Method	OLS				IV			
Dependent Variable: Employment Growth	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
infpayment0	0.07082	0.07313	0.05988	0.02857	-0.74979	-0.74289	-0.71164	-1.09568
	[0.10609]	[0.10730]	[0.10400]	[0.10014]	[0.58915]	[0.59520]	[0.58185]	[0.71442]
totaltaxes0	0.13490	0.13346	0.13622	0.13169	0.35535*	0.35400*	0.35133*	0.37401**
	[0.10613]	[0.10693]	[0.10653]	[0.10410]	[0.19132]	[0.19430]	[0.19025]	[0.18257]
Lnage	0.01728*	0.01766*	0.01751*	-0.01656	0.02231**	0.02239**	0.02196**	-0.02154*
	[0.01019]	[0.01025]	[0.01020]	[0.01007]	[0.01133]	[0.01130]	[0.01113]	[0.01110]
lnsize09	0.00289	0.00285	0.00381	0.00357	0.00262	0.00259	0.00398	0.00522
	[0.00581]	[0.00581]	[0.00567]	[0.00567]	[0.00688]	[0.00685]	[0.00671]	[0.00684]
Trade		0.01922	0.01894	0.01656		0.00516	0.00536	-0.00168
		[0.02645]	[0.02911]	[0.03230]		[0.03130]	[0.03520]	[0.04102]
Collegegrad			-0.02043	-0.02034			-0.03266*	-0.03707**
			[0.01393]	[0.01435]			[0.01710]	[0.01866]
Dyncon				0.08393**				0.11966***
				[0.03923]				[0.04399]
Constant	-0.00703	-0.00600	-0.01526	-0.03299	-0.01851	-0.01801	-0.03065	-0.07513
	[0.07576]	[0.07569]	[0.07395]	[0.07304]	[0.08012]	[0.07963]	[0.07703]	[0.08104]
Observations	911	911	910	910	911	911	910	910
R-squared	0.03100	0.03163	0.03447	0.04315				

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 9. By Motivation (a): Firm Approaches the Bureaucrat

Method	OLS				IV			
Dependent Variable: Employment Growth	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
infpayment0	0.06857	0.07073	0.05570	0.02337	-0.65178	-0.64509	-0.61503	-0.92087
	[0.11004]	[0.11124]	[0.10744]	[0.10308]	[0.58915]	[0.59484]	[0.58464]	[0.69217]
totaltaxes0	0.14170	0.14036	0.14367	0.13996	0.36439*	0.36294*	0.36144*	0.37616**
	[0.10913]	[0.10993]	[0.10919]	[0.10686]	[0.19176]	[0.19491]	[0.19071]	[0.18409]
Lnage	-0.01905*	-0.01941*	-0.01933*	0.01856*	-0.02389**	-0.02396**	-0.02367**	0.02328**
	[0.01089]	[0.01095]	[0.01089]	[0.01074]	[0.01192]	[0.01190]	[0.01175]	[0.01168]
lnsize09	0.00416	0.00412	0.00536	0.00512	0.00308	0.00306	0.00464	0.00560
	[0.00623]	[0.00623]	[0.00606]	[0.00606]	[0.00710]	[0.00707]	[0.00689]	[0.00699]
Trade		0.01821	0.01812	0.01661		0.00524	0.00570	0.00098
		[0.02667]	[0.02998]	[0.03310]		[0.03153]	[0.03596]	[0.04129]
Collegegrad			-0.02547*	0.02435			-0.03612**	0.03783**
			[0.01459]	[0.01502]			[0.01749]	[0.01858]
Dyncon				0.08273**				0.11561***
				[0.04215]				[0.04458]
Constant	-0.02029	-0.01931	-0.03120	-0.04871	-0.02302	-0.02254	-0.03711	-0.07710
	[0.08071]	[0.08063]	[0.07846]	[0.07759]	[0.08249]	[0.08197]	[0.07889]	[0.08161]
Observations	827	827	826	826	827	827	826	826
R-squared	0.03637	0.03695	0.04119	0.04925				

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 10. By Motivation (b): Bureaucrat Asks for Informal Payments

Method	OLS				IV			
Dependent Variable: Employment Growth	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
infpayment0	-0.14438	-0.13546	-0.03857	-0.08280	0.81095	0.85338	0.41956	-0.80856
	[0.24432]	[0.24733]	[0.29213]	[0.29474]	[2.19116]	[2.22049]	[1.70923]	[1.40630]
totaltaxes0	-0.21143	-0.21599	-0.22260	-0.25931	-0.44493	-0.35579	-0.18711	-0.11654
	[0.20085]	[0.20252]	[0.20291]	[0.20733]	[0.86011]	[0.79001]	[0.61353]	[0.56346]
Lnage	-0.00568	-0.00634	-0.00893	-0.00222	-0.00131	-0.00228	-0.00794	-0.00395
	[0.01932]	[0.01961]	[0.02043]	[0.02242]	[0.02567]	[0.02555]	[0.02210]	[0.02442]
lnsize09	-0.00475	-0.00501	-0.00605	-0.00661	-0.00559	-0.00728	-0.00853	-0.00503
	[0.00549]	[0.00554]	[0.00574]	[0.00580]	[0.01125]	[0.01039]	[0.00888]	[0.00916]
Trade		0.06091	0.07098	0.01785		0.08443	0.07916	-0.00376
		[0.04299]	[0.04368]	[0.06025]		[0.07451]	[0.06556]	[0.06672]
Collegegrad			0.03653	0.01329			0.04603	-0.00455
			[0.03567]	[0.03500]			[0.05600]	[0.03817]
Dyncon				0.12000				0.11619
				[0.08897]				[0.11246]
Constant	0.12057*	0.12542*	0.13385*	0.11446	0.14489	0.15527	0.15153*	0.09136
	[0.06935]	[0.07078]	[0.07501]	[0.07279]	[0.10673]	[0.10716]	[0.08694]	[0.07274]
Observations	82	82	82	82	82	82	82	82
R-squared	0.04592	0.04975	0.06499	0.08956			0.04601	0.02134

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 11. Summary on the Effect of Lagged Corruption and Taxation on Firm Performance

Dataset	Dependent variable	Comments:
Full sample	Sales growth	Corruption: significantly (+) for OLS and IV Taxation: no effect for OLS and IV
Full sample	Employment growth	Corruption: no effect for OLS and IV Taxation: no effect for OLS and sig. (+) for IV
Motivation: Bureaucrat Asks for Informal Payments	Sales growth	Corruption: no effect for OLS and IV Taxation: sig. (+) for OLS and no effect for IV
Motivation: Bureaucrat Asks for Informal Payments	Employment growth	Corruption: no effect for OLS and IV Taxation: no effect for OLS and IV
Motivation: Firm Approaches the Bureaucrat	Sales growth	Corruption: sig. (+) for OLS and IV Taxation: no effect for OLS and IV
Motivation: Firm Approaches the Bureaucrat	Employment growth	Corruption: no effect for OLS and IV Taxation: no effect for OLS and sig. (+) for IV

Table 12. Effect of Corruption and Taxation on Sales Growth
***outliers removed (threshold of 99th Percentile)**

Full Sample	Method	
Dependent variable: sales growth	OLS	IV
infpayment0	0.21489	8.48899*
	[0.54962]	[4.45629]
totaltaxes0	0.12262	-0.25645
	[0.11013]	[0.42639]
lnage	-0.01471	-0.00185
	[0.01529]	[0.02309]
lnsize09	-0.03365**	0.07693**
	[0.01502]	[0.03253]
trade	-0.00541	0.08050
	[0.04133]	[0.07290]
collegegrad	0.07675*	0.17430**
	[0.03971]	[0.08837]
dyncon	0.34594***	0.04545
	[0.11537]	[0.15714]
Constant	0.40347**	0.98164**
	[0.19647]	[0.44826]
Observations	923	926
R-squared	0.07491	

By Motivation (a): Firm Approaches the Bureaucrat	Method	
Dependent variable: sales growth	OLS	IV
infpayment0	0.21911	8.60250*
	[0.62428]	[4.80133]
totaltaxes0	0.11702	-0.26759
	[0.11173]	[0.43740]
lnage	-0.01593	-0.00423
	[0.01608]	[0.02456]
lnsize09	-0.03553**	0.07886**
	[0.01627]	[0.03412]
Trade	-0.00112	0.07983
	[0.04229]	[0.07370]
Collegegrad	0.08386*	0.17353*
	[0.04298]	[0.09080]
Dyncon	0.36261***	0.02166
	[0.12438]	[0.16260]
Constant	0.42569**	1.02032**
	[0.21055]	[0.47464]
Observations	835	838
R-squared	0.07795	

By Motivation (b): Bureaucrat Asks for Informal Payments	Method	
Dependent variable: sales growth	OLS	IV
infpayment0	0.12226	3.30270
	[0.37884]	[3.20634]
totaltaxes0	0.52119**	-0.06298
	[0.25696]	[1.06734]
Lnage	0.02527	0.03713
	[0.02833]	[0.03469]
lnsize09	-0.01773	-0.02801
	[0.01353]	[0.02645]
Trade	-0.13924	-0.05366
	[0.09215]	[0.12381]
Collegegrad	-0.01471	0.05301
	[0.08415]	[0.10903]
Dyncon	0.24947	0.28730
	[0.15473]	[0.21560]
Constant	0.10597	0.23547
	[0.18737]	[0.29274]
Observations	86	86
R-squared	0.12892	

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Table 13. Effect of Corruption and Taxation on Sales Growth
***outliers removed (threshold of 95th percentile)**

Full Sample	Method	
Dependent variable: sales growth	OLS	IV
infpayment0	-0.75777	5.83591**
	[1.89534]	[2.86466]
totaltaxes0	0.13833	-0.13001
	[0.10495]	[0.35500]
lnage	-0.01061	-0.00508
	[0.01523]	[0.01990]
lnsize09	-0.01910**	-0.05175***
	[0.00948]	[0.01886]
trade	-0.00674	0.05344
	[0.04092]	[0.05855]
collegegrad	0.06997*	0.13497*
	[0.03811]	[0.06891]
dyncon	0.24579***	0.07662
	[0.08433]	[0.12765]
Constant	0.21523	0.65316**
	[0.13712]	[0.27407]
Observations	882	924
R-squared	0.05318	

By Motivation (a): Firm Approaches the Bureaucrat	Method	
Dependent variable: sales growth	OLS	IV
infpayment0	-0.90289	5.86422*
	[1.97837]	[3.09946]
totaltaxes0	0.12554	-0.13357
	[0.10834]	[0.36076]
lnage	-0.01146	-0.00753
	[0.01617]	[0.02093]
lnsize09	-0.01975*	-0.05243***
	[0.01010]	[0.01969]
trade	-0.00290	0.05320
	[0.04209]	[0.05900]
collegegrad	0.07520*	0.13407*
	[0.04130]	[0.07100]
dyncon	0.25025***	0.06220
	[0.09070]	[0.13361]
Constant	0.22474	0.67221**
	[0.14535]	[0.28828]
Observations	800	836
R-squared	0.05380	

By Motivation (b): Bureaucrat Asks for Informal Payments	Method	
Dependent variable: sales growth	OLS	IV
infpayment0	0.59919	3.30270
	[1.43429]	[3.20634]
totaltaxes0	0.56715**	-0.06298
	[0.27419]	[1.06734]
lnage	0.02097	0.03713
	[0.02998]	[0.03469]
lnsize09	-0.02086	-0.02801
	[0.01583]	[0.02645]
trade	-0.14340	-0.05366
	[0.10080]	[0.12381]
collegegrad	-0.01221	0.05301
	[0.08839]	[0.10903]
dyncon	0.27839	0.28730
	[0.17842]	[0.21560]
Constant	0.14189	0.23547
	[0.22252]	[0.29274]
Observations	80	86
R-squared	0.13735	

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