

Contents lists available at [SciVerse ScienceDirect](#)

## Journal of Banking &amp; Finance

journal homepage: [www.elsevier.com/locate/jbf](http://www.elsevier.com/locate/jbf)

## Corruption, growth, and governance: Private vs. state-owned firms in Vietnam

Thuy Thu Nguyen<sup>a</sup>, Mathijs A. van Dijk<sup>b,\*</sup><sup>a</sup>Business Administration Faculty, Foreign Trade University, 91 Chua Lang, Hanoi, Viet Nam<sup>b</sup>Rotterdam School of Management, Erasmus University, Rotterdam, The Netherlands

## ARTICLE INFO

## Article history:

Available online 16 April 2012

## JEL classification:

O10

H70

P37

## Keywords:

Corruption

Growth

Governance

Private firms

State-owned enterprises

## ABSTRACT

We provide a firm-level analysis of the relation between corruption and growth for private firms and state-owned enterprises (SOEs) in Vietnam. We obtain three different measures of the perceived corruption severity from a 2005 survey among 741 private firms and 133 SOEs. We find that corruption hampers the growth of Vietnam's private sector, but is not detrimental for growth in the state sector. We document significant differences in the corruption severity across 24 provinces in Vietnam that can be explained by the quality of provincial public governance (such as the costs of new business entry, land access, and private sector development policies). Our results suggest that corruption may harm economic growth because it favors the state sector at the expense of the private sector and that improving the quality of local public governance can help to mitigate corruption and stimulate economic growth.

© 2012 Elsevier B.V. All rights reserved.

## 1. Introduction

Fighting corruption is high on the policy agenda of many international organizations as well as governments in both developing and developed countries. According to the United Nations Secretary-General Ban Ki-moon's message for International Anti-Corruption Day (held every year on December 9th): "Corruption is a threat to development, democracy and stability. It distorts markets, curbs economic growth and discourages foreign investment" (United Nations, 2010).

A large body of academic research studies the causes and economic consequences of corruption.<sup>1</sup> However, almost all empirical studies in the literature to date measure and analyze corruption at the country-level.<sup>2</sup> There are at least three arguments for why we need more firm-level analyses of the determinants and economic impact of corruption. First, country-level research does not help us to understand the determinants of the level of corruption that individual firms face and why and how the level of corruption varies across firms within a country. Macro-economic factors such as

inflation and economic development and country-level institutions, which have been examined in cross-country studies, cannot explain the substantial within-country variation in corruption we observe.<sup>3</sup> Second, firm-level analyses are crucial to understand why and how the impact of corruption differs across firms. In particular, in many countries the effects of corruption on individual firms are likely to differ due to the unequal treatment of public officials of firms in the private and state sectors of the economy. This issue is especially relevant in socialism-oriented and post-socialist countries, which historically have strong policies that favor the state sector. Third, firm-level studies can have important policy implications and could, for example, provide countries with a high level of corruption with recommendations on which local institutions matter for the prevalence of corruption.

In this paper, we present a firm-level study of the effect of corruption on firm growth in Vietnam, as well as the role of public governance in explaining variation in the corruption severity within the country. Our study is one of a very limited number of within-country studies on corruption. This branch of the literature, to the best of our knowledge, consists of Svensson (2003), Del Monte and

\* Corresponding author. Tel.: +31 10 408 1124; fax: +31 10 408 9017.

E-mail addresses: [thuy.nt@ftu.edu.vn](mailto:thuy.nt@ftu.edu.vn) (T.T. Nguyen), [madijk@rsm.nl](mailto:madijk@rsm.nl) (M.A. van Dijk).<sup>1</sup> For a review and summary, we refer to, e.g., Bardhan (1997), Jain (2001), and Aidt (2003).<sup>2</sup> See, for example, Mauro (1995), Ades and Di Tella (1999), Li et al. (2000), Treisman (2000), Paldam (2002), Herzfeld and Weiss (2003), Persson et al. (2003), Méndez and Sepúlveda (2006), and Ahlin and Pang (2007).<sup>3</sup> We document significant differences in corruption severity across individual firms and provinces in Vietnam. For example, we observe values ranging from 0 to 39 (measured on a scale of 0–40) for one of our survey measures of the severity of corruption as perceived by the 874 Vietnamese firms in our sample. Other studies document significant differences in bribery payments among Ugandan firms and industries (Svensson, 2003; Fisman and Svensson, 2007), and in the level of corruption across US states (Glaeser and Saks, 2006).

Papagni (2007), and Rand and Tarp (2010) on the causes and determinants of corruption and Del Monte and Papagni (2001), Glaeser and Saks (2006), and Fisman and Svensson (2007) on the consequences of corruption. Fisman and Svensson (2007) is the only other study we are aware of that drills down to the firm-level in analyzing the relation between corruption and growth.

Corruption in Vietnam is severe. Vietnam is ranked 118 out of 163 countries in the 2007 Global Corruption Report (in which the most corrupt country is ranked 163).<sup>4</sup> According to Transparency International (2007), Vietnam is one of the countries whose government commitment to ensure adequate support for courts and their personnel has weakened in recent years, inviting corruption and undermining the rule of law.<sup>5</sup> This observation suggests that deteriorating public governance may contribute to higher levels of corruption.

Vietnam is interesting as a single country setting for at least two reasons. First, corruption effects in Vietnam are likely to differ across private and state sectors, due to the unequal treatment of public authorities of firms in these sectors. We study a distinctive business form in Vietnam that operates in the absence of well-established market institutions: state-owned enterprises (SOEs). Vietnam has a tradition of favoring SOEs, which used to be the only major driving force of the economy. Many researchers consider corruption to be bad for economic growth (e.g., North, 1990; Shleifer and Vishney, 1993; Romer, 1994). However, due to the close relationships and the mutual benefits between SOEs and public officials (see, e.g., ANU and CIEM, 2002; Tenev et al., 2003; Nguyen, 2006), SOEs in Vietnam may incur less adverse effects of corruption compared to non-state firms. To the best of our knowledge, we are the first to analyze whether the impact of corruption on firm growth differs across the private and state sectors.

Second, although several prior studies investigate the role of the overall national legal effectiveness and the legal origins in affecting corruption (e.g., Herzfeld and Weiss, 2003; Treisman, 2000), the role of within-country governance structures has received very little attention in the academic literature, partly due to data availability issues. In Vietnam, provinces and cities under the central government are important administrative units. Our detailed data on public governance at the province level in Vietnam offer an opportunity to examine how the local public governance structure and quality affect corruption as experienced in the corporate sector.

We measure corruption from two different perspectives: (i) the level of corruption severity in the local business environment as perceived by firms; and (ii) corruption as the choice to pay and the amount of informal payments in accordance with industry practice as perceived by firms. Previous firm-level studies measure corruption as the bribery payments made by individual firms themselves (Svensson, 2003; Fisman and Svensson, 2007). Such a variable potentially has an endogenous relation with firm growth, because growth affects a firm's ability to pay informal charges (Svensson, 2003). Given the construction of our corruption measures as the perception that firms have of the general severity of corruption in their local business environment or industry, an

advantage of our study is that this endogeneity problem is less of a concern. We elaborate on this issue below.

Our study adds to the scarce literature on corruption at the firm-level within individual country contexts. We provide new evidence on the effect of corruption on growth, and of public governance on corruption across economic sectors in Vietnam. Using information from the World Bank's Productivity and Investment Climate Enterprise Survey and the Vietnam Provincial Competitiveness Index Survey in 2005, we show that corruption has a negative impact on the growth of private firms, but does not harm the growth of SOEs. These findings suggest that the priorities and treatment from the government in favor of the state sector likely generate distortions in the market economy mechanism.

Local public governance structures play a significant role in determining the severity of corruption. The governance factors that have a significant relation with corruption severity are entry costs, land access, the implementation and consistency of policies, and policies for private sector development. These findings suggest that improvements in governance quality, including the leveling of the playing field for firms in all economic sectors, can contribute to curbing corruption, and thus alleviating its adverse effects on firm growth and development.

## 2. Literature

Corruption is widely understood as "the acts in which the power of public office is used for personal gain in a manner that contravenes the rules of the game" (Jain, 2001). People involved in corruption are often public officials and politicians, who control the power of public office. Most empirical studies on the causes of corruption examine large samples of countries. These studies have identified the following major determinants of corruption: rent-seeking opportunities and corporate competition (e.g., Ades and Di Tella, 1999), legal effectiveness (e.g., Herzfeld and Weiss, 2003), and legal origin, religion, and status of economic development (e.g., Treisman, 2000; Paldam, 2002). Cross-country studies on the consequences of corruption generally find a negative impact of corruption on country-level economic growth and investments, although in a few cases the negative effects are weak and/or inconclusive (e.g., Mauro, 1995; Li et al., 2000; Méndez and Sepúlveda, 2006; Ahlin and Pang, 2008). The literature documents a few other consequences of corruption, for example its negative impact on the level of human capital (Mo, 2001).

Corruption may influence a society in a variety of ways. Theoretically, there are two broad viewpoints on the impact of corruption on growth. First, many authors emphasize the possibility that economic growth and/or development are negatively influenced by corruption. According to North (1990), cumbersome and dishonest bureaucracies may delay the distribution of permits and licenses, thereby slowing down the process through which technological advances become embodied in new equipment or new productive processes. Moreover, bureaucrats may distort investments toward projects offering better opportunities for corruption, such as defense and infrastructure (Shleifer and Vishney, 1993). The distortion in the composition of the private sector raises the relative return to rent-seeking activity and, as a result, growth rates and income levels drop. Corruption can also be viewed as a tax on the profits of the productive sector. Romer (1994) suggests that corruption as a tax stifles the entry of new goods or technologies that require an initial fixed investment. An increase in corruption amounts to a tax hike, pulling talented entrepreneurs toward the rent-seeking sector, and, in turn, growth rates drop. Murphy et al. (1991) provide evidence that countries where talented people are allocated to rent-seeking activities tend to grow more slowly.

<sup>4</sup> Vietnam scores 2.6 in the Corruption Perceptions Index (CPI), which ranges between 10 (highly clean) and 0 (highly corrupt). This score is similar to the scores in the 2000–2005 period, but the country's ranking is getting worse. Within-country studies on corruption until now are limited to only three countries: the U.S, Italy and Uganda, which have CPI scores of 7.3, 4.9 and 2.7, and country ranks of 22, 45, and 110, respectively.

<sup>5</sup> Corruption has become a serious issue in the country. It was particularly pressing when in 2006 a number of major corruption cases were uncovered, such as the case of Project Management Unit 18 (PMU18), land corruption in Hai Phong, the corruption case in purchasing equipments by 38 provincial and municipal post offices (CIEM, 2007).

However, there is a second strand of the literature that suggests that corruption may actually improve efficiency and help growth, especially in the context of pervasive and cumbersome regulations in developing countries. Several authors (e.g., Leff, 1964; Huntington, 1968; Lui, 1985) suggest that corruption raises economic growth through two types of mechanisms: (i) corrupt practices such as “speed money” would enable individuals to avoid bureaucratic delay<sup>6</sup>; and (ii) government employees who are allowed to levy bribes have incentives to work harder and more efficiently. Although the first mechanism would increase the likelihood that corruption is beneficial to growth only in countries where bureaucratic regulations are cumbersome, the second is independent of the level of red tape (Mauro, 1995).

Most studies of the consequences of corruption are performed on a cross-country scale. The empirical evidence generally supports the viewpoint of harmful effects of corruption. Mauro (1995) documents a significantly negative association between a corruption index and the rates of investment and economic growth in a sample of 67 countries. The effect holds in subsamples of countries that exhibit cumbersome bureaucratic regulations. Using a sample of 46 countries, Mo (2001) finds that a 1% increase in the corruption level reduces the growth rate of a country by 0.72%. Ahlin and Pang (2008) show that across a sample of 71 countries, the control of corruption can help to promote economic growth.

However, there is some evidence that challenges the view that corruption has adverse effects on growth. Li et al. (2000) show that corruption tends to reduce GDP growth rates for 46 countries, but this effect only shows up in some of the regression models. In addition, corruption appears to have a far less harmful effect on growth in Asia than elsewhere. Méndez and Sepúlveda (2006) study the effects of corruption on countries' economic growth in the long run. Unlike other papers, they find evidence of a non-monotonic relation between corruption and growth when restricting the sample to those countries considered politically free. The results indicate that the growth-maximizing level of corruption is significantly greater than zero, with corruption beneficial for economic growth at low levels of corruption, and detrimental at high levels of corruption.

Empirical evidence on the consequences of corruption within countries is scarce, especially for individual firms. The only two examples of firm-level analyses that we are aware of are Fisman and Svensson (2007) and Rand and Tarp (2010). Fisman and Svensson (2007) study the relation between bribery payments and firm growth for Ugandan firms. The authors find that bribery payments work similarly to taxes on firms, and a one-percentage point increase in the bribery rate is associated with a reduction in firm growth of three percentage points. Rand and Tarp (2010) show that the incidence of bribe payments by Vietnamese firms is associated with several firm characteristics (such as visibility, ability to pay, and interaction with public officials), and that bribe payments have a negative effect on firm growth.

A couple of other papers analyze regional data within countries. Del Monte and Papagni (2001) investigate whether corruption is one of the causes of the limited success of the policies designed to stimulate the development of Southern Italy. The results show that corruption has a negative effect on economic growth, private investment, and the efficiency of expenditures on public investment in Italian regions. Glaeser and Saks (2006) use information on corruption severity in the states of the US to examine the impact of corruption on economic development, and find a weak negative relation.

### 3. Corruption in the private and state sectors in Vietnam

#### 3.1. Overview of the private and state sectors

After the national reunification process from 1975 until 1986, Vietnam followed a centrally planned economic regime, in which the only major driving force of the economy was the state sector. SOEs were solely responsible for national industrial production, and cooperatives were mostly in charge of agricultural production. Vietnamese SOEs exclusively dominated many industries, including utilities, aviation, national defense, oil and gas exploration and production, and all heavy industries. In addition, SOEs enjoyed priorities in government investments, using 60% of national capital resources (Nguyen, 2006). The country experienced a post-war period that was characterized by very poor economic conditions. In 1986, an important process of economic reform (“*Doimoi*”) was set in motion, aiming to renovate the socio-economic system toward higher productivity and efficiency, and better national living standards. The *Doimoi* process has led to the decentralization of state economic management, and the replacement of administrative measures in a command economy by economic ones in a socialism-oriented market economy. Vietnam's private sector was officially born and soon became an important engine for economic growth.

The development in the contribution of the Vietnamese private firms to economic growth and national wealth has been remarkable. From nearly nothing before 1989, the Vietnamese private sector produced 50% of total industrial output in 1996, 66% in 2000, and nearly 73% in 2004 (GSO, 2005). The private sector has also created the majority of new jobs and has become the most dynamic component of the Vietnamese economy (Tenev et al., 2003). After the revision of Enterprise Law in 2000, the number of private companies increased even more rapidly. During 1995–1999 around 8000 companies were established (GSO, 2002). Afterwards, the number of registered private companies soared from approximately 35,000 in 2000 to around 84,000 in 2004 (GSO, 2005). In 2005, Vietnamese private firms accounted for nearly 90% of the total number of enterprises, and employed about 44% of all employees. However, the vast majority (around 90%) of the registered private companies are small and medium sized enterprises (SMEs). Recent studies report that private SMEs have difficulties in getting access to resources such as land and financing for further development (JBIC, 2003; Tenev et al., 2003).

Regarding Vietnam's state sector, there were about 5900 SOEs in the country during the 1990s (JBIC, 2003). The number decreased to slightly more than 4500 in 2004 (GSO, 2005) due to the process of privatization of SOEs (referred to as “equitization” in Vietnam), and the policy of the restructuring and/or dissolution of SOEs. However, the equitization accounted for only 9% of total state capital in SOEs until 2005 (Nguyen, 2006). These figures imply that after nearly 20 years of transition from a planned economy towards a socialist-oriented market economy, Vietnam still maintains a significant state sector.

The state sector in Vietnam suffers from a number of problems. SOEs have a large amount of bad debt, though it is usually ignored or erased by the state banking system. The fraction of bad debt in Vietnam's SOEs is kept confidential, but the SOEs' losses are partially known by the public. For example, it was reported that 11 State Civil Engineering Construction Corporations (CIENCOs) suffered very large losses. One of these firms lost VND 2 trillion, roughly equivalent to USD 130 million. Similarly, subsidiaries of the Vietnam State Paper Corporation made a loss of more than USD 2 million in 2004 (Nguyen, 2006). The losses and squandering in state budget investments are estimated to account for 20 to 40 percent of the total investment. At the local level, more than 2000

<sup>6</sup> This argument is not undisputed, for example, “corrupt officials may, instead of speeding up, actually cause administrative delays in order to attract more bribes” (Bardhan, 1997, p.1323).

projects were inspected in 2003 and almost all were discovered to commit violations of state financial regulations, and were thus required to revoke VND 136 billion in the state budget (CIEM, 2006).

It is widely believed that there is not yet a level playing field for private firms in Vietnam. With regard to access to both land and finance, SOEs continue to crowd out the private sector. For example, banks regularly offer loans for SOEs under pressure from governmental authorities – regardless of the risk of the proposed projects (Nguyen, 2006). Private firms to a greater extent depend on social networks for access to capital and business services, but their business networks are weaker than those of SOEs (ANU and CIEM, 2002; Tenev et al., 2003). The government's preferential treatment of SOEs remains a major obstacle for the development of private firms. This view is confirmed by the slow pace of the implementation of recent reform measures, in particular SOE reform (ANU and CIEM, 2002).

### 3.2. Corruption and growth in the private and state sectors

Due to the country's history, private and state sectors in Vietnam face different levels and types of government intervention, and receive different endowments. Moreover, managers in private firms and SOEs are generally believed to have different incentives and targets. Agency theory predicts that managers of SOEs seek to maximize their own benefits rather than those of the state or the firm itself as a result of agency problems and a lack of outside monitoring (Jensen and Meckling, 1976; Grossman and Hart, 1983). Managers in SOEs are not constrained by the threat of bankruptcy and takeovers as in the private sector (Nguyen, 2006). Managers of private firms are disciplined by a number of external control mechanisms such as the labor market for managers and the market for corporate control, and by internal control mechanisms such as executive compensation (Cuervo and Villalonga, 2000).

Politicians, the representatives of state ownership, often exert insufficient effort into monitoring SOEs' managers. First, politicians tend to be concerned with the chances of re-election or promotion, rather than with monitoring SOEs' activities. Second, there is generally a close relationship between SOEs' managers and governmental authorities (Nguyen, 2006). The public authorities, as the owner of SOEs, are likely to give privileges in resource allocation to SOEs. Moreover, many politicians gain their power in the political system after having taken the top executive positions in SOEs. The previous working relationship also induces public officials to deal with SOEs in a more favorable way. Based on these relationships, the SOEs' management likely has more opportunities to approach and lobby public officials to obtain favorable conditions for growth and development.

The close relationship between SOEs and public officials, which is usually perceived as corruption by non-state firms, tends to benefit the performance of SOEs. The benefits can be large, especially in case of the heavy bureaucracy in developing countries like Vietnam. Although the level of corruption may be similar for SOEs and private firms, the effects of corruption on the firm's opportunities for development are likely to be more beneficial for SOEs. We thus expect that the effect of corruption on firm growth differs significantly across SOEs and private firms in Vietnam.

According to CIEM (2005), the major causes of corruption in Vietnam include: (i) abuse of power by public officials; (ii) arbitrary decisions related to policies and administration; (iii) weak accountability of officials and government agencies; and (iv) weak state implementation and monitoring. Transparency International reports emphasize that the court system effectiveness, the rule of law, and the public governance personnel are among the factors that can explain cross-country differences corruption. Academic studies also find evidence that public governance affects corruption (see the discussion in Section 1). Similarly, it seems plausible

that within-country differences in the occurrence and severity of corruption in the business environment are also, at least in part, due to within country variation in public governance. A report by ANU and CIEM (2002) on private firm development in Vietnam concludes that "There are many inconsistencies and a lack of transparency in the existing legal framework. Consequently, the common policy framework might be interpreted in various ways by different provincial authorities. The lack of clarity on regulations creates incentives for opportunistic behavior of local government officials." An analysis of the impact of local public governance on corruption can provide important policy lessons on how to mitigate the severity of corruption.

## 4. Data and methodology

### 4.1. Data sources

We use data obtained from two surveys conducted in 2005. The first survey is the "Productivity and Investment Climate Enterprise Survey" conducted by the World Bank, which is used by several recent papers, including Ayyagari et al. (2010). This dataset includes firm characteristics, financial information, and firms' assessments of various aspects of the local business environment. The second survey is the "2005 Vietnam Provincial Competitiveness Index Survey" organized by the Vietnam Competitive Initiative (VNCI) and the Vietnam Chamber of Commerce and Industry (VCCI). This dataset consists of province-level indicators of public governance quality measured in the Fall of 2004. We present variable definitions in Appendix A.

### 4.2. Measuring growth and corruption

We follow Allen et al. (2007) and define firm growth (*GROWTH*) as the change in the book value of the firm's total assets. We use the change in total assets between the end of 2003 and the end of 2004, obtained from the World Bank survey.

We use three different measures of the perceived corruption severity by individual firms as assessed by the World Bank survey. The first measure is the respondents' perception about the corruption level in their local business environment (*CORRUPTION*). This measure is computed as the sum of the subscores of corruption ranks assessed by the firms. The firms are asked to rank the corruption extent of various agencies, using a scale ranging from 0 (no corruption) to 4 (widespread corruption). The agencies to be ranked are tax department officials, officials in business registration and licensing, import/export license authorities, the customs department, construction permit authorities, traffic police, municipal and other police, market controller, land administration agency, and the district peoples' committee.<sup>7</sup> *CORRUPTION* thus represents the general corruption severity in the local business environment as perceived by the firm. The second and third measures concern the corruption severity at the industry-level. We use two proxies for the firm's perception of corruption in its industry: *PAYMENTDUM* is a dummy variable that is equal to one if the firm perceives that there are informal payments to public officials in the industry, and zero otherwise; and *PAYMENTAMOUNT* is the ratio

<sup>7</sup> We calculate Cronbach's alpha coefficient for our measure *CORRUPTION*. The alphas for our different samples range from 0.79 to 0.83, meaning that we have a high reliability in constructing the measure. In addition, we run a factor analysis for the subscores of *CORRUPTION*, and find that there is only one factor that has an eigenvalue greater than 1. For this factor, the factor loadings of the subscores are highly comparable (results are available upon request). The procedures indicate a reliable construction of our measure of *CORRUPTION*. As a robustness check, we perform our empirical analysis for subscores of *CORRUPTION*, instead of this measure itself. The results show that our findings are not driven by any particular subscore.

of informal payments that the industry pays (as estimated by the firm) over annual industry sales.

An important concern in any survey is that the respondents may provide self-serving answers. This concern may be particularly relevant for sensitive topics such as corruption and especially for answers provided by SOEs, whose links to public government may lead them to give biased answers. Although our measures of corruption may suffer from this concern, there are three reasons why we do not expect it to have a major impact on our findings. First, the World Bank has tried to alleviate this concern by only inquiring about the perception of corruption, rather than the level of corruption that individual firms face. Second, the identification of our main result about the differential impact of corruption on private firms and SOEs stems from cross-sectional variation in perceived corruption *within* the subsample of private firms and *within* the subsample of SOEs. Third, almost 70% of the SOEs in our sample indicate that their industry peers pay informal charges as a common industry practice. Although we cannot rule out that this underestimates the true extent of corruption, it does suggest relatively little hesitation on the part of the SOEs to acknowledge the existence of corruption (see also footnote 10 of this paper).

#### 4.3. Determinants of growth

We use the following determinants of growth in our baseline model. First, we include firm age in years (*AGE*). We expect that *AGE* has a negative impact on firm growth, as growth tends to slow down as firms mature. Second, we include firm size (*SIZE*), measured as the logarithm of total sales (we obtain qualitatively similar results when we measure firm size based on total assets). We expect that *SIZE* also has a negative effect on firm growth, as smaller firms are more likely to grow rapidly.

The application and innovation of technology (*TECH*) is likely to be a driving force for growth. *TECH* is a dummy variable based on the answer to a survey question about whether the firm recently acquired new technology that either substantially changed the way the main products are produced or allowed the production of new products. We also consider the utilization of production capacity (*CAPACITY*). Better use of machinery and equipment is likely to bring about a higher growth rate. *CAPACITY* is defined as the amount of output actually produced relative to the maximum amount that could be produced with existing machinery and equipment and regular shifts in 2004.

Financing is another potential determinant of firm growth. We follow Ayyagari et al. (2010) and use financing dummies in the model to explain growth. A dummy for bank financing (*BANKDUM*) takes the value of one if the firm uses a strictly positive amount of bank financing for working capital or new investments, and the value of zero otherwise. Bank financing is defined as loans provided by private commercial banks, state-owned commercial banks, international commercial banks, leasing arrangements, development assistance funds, and/or the state budget. A dummy for informal financing (*INFORMALDUM*) takes the value of one if the firm uses a strictly positive amount of informal financing for working capital or new investments, and the value of zero otherwise. Informal financing is defined as funds coming from family, friends, and/or other informal sources such as money lenders.<sup>8</sup>

In addition to these independent variables, we use 23 province dummies as well as 16 industry dummies to represent the follow-

ing industries: food and beverage, textiles, apparel, leather products, wood and wood products, paper, chemical and chemical products, rubber and plastic products, non-metallic mineral products, basic metals, metal products, machinery and equipment, electrical machinery, electronics, construction materials, and vehicles and other transport equipment.

#### 4.4. Determinants of corruption

We examine how the quality of local public governance affects the corruption severity in the business environment and in industries in Vietnam. We use the provincial governance indicators provided by VNCI and VCCI, which are all standardized to a ten-point scale. The indicators, whose definitions are given in Appendix A, are: (i) *ENTRYCOST*: the regulatory costs of firms to enter business; (ii) *LANDACCESS*: firms' access to land; (iii) *TRANSPARENCY*: transparency and access to information; (iv) *STATEBIAS*: the bias toward state-owned enterprises; (v) *TIMECOST*: time costs of regulatory compliance; (vi) *IMPLEMENTATION*: the implementation and consistency of policies; (vii) *PRIVSECDEV*: the policies for private sector development; and (viii) *PROACTIVE*: the proactivity of provincial leadership. *PCI* (provincial competitiveness index) is an overall measure of public governance quality constructed by VNCI and VCCI as a weighted combination of the subindices.

#### 4.5. Sample

Our initial sample includes all firm observations in the World Bank's survey. The surveyed firms are based in 24 provinces in Vietnam. We exclude firms that do not have information on total assets or sales. We also discard observations with firm age equal to zero, and production capacity greater than one. We remove a small number of outliers, defined as firms with asset growth above 5 or below -5. Next, we incorporate the data of provincial governance variables from the VNCI and VCCI's survey into our sample. Our final data sample consists of 741 private firms and 133 SOEs. Private firms are limited liability corporations, companies with foreign direct investment, one member limited liability companies, joint stock companies, partnerships, and sole proprietorships.

#### 4.6. Methodology

We use regressions to examine the effect of corruption on firm growth while controlling for other growth determinants. The baseline model is as follows:

$$\begin{aligned} GROWTH_i = & \gamma_0 + \gamma_1 AGE_i + \gamma_2 SIZE_i + \gamma_3 TECH_i + \gamma_4 CAPACITY_i \\ & + \gamma_5 BANKDUM_i + \gamma_6 INFORMALDUM_i \\ & + \gamma_7 CORRUPT_i + \varepsilon_i, \end{aligned} \quad (1)$$

where *CORRUPT<sub>i</sub>* is one of our three corruption measures (i.e., *CORRUPTION*, *PAYMENTDUM* or *PAYMENTAMOUNT*) for firm *i*. We investigate differences between private firms and SOEs by interacting all independent variables with an SOE dummy. In robustness checks, we introduce governance variables, industry and/or province dummies into the baseline model (1).

Studies on corruption and growth at the firm-level may suffer from endogeneity problems because firm growth affects a firm's ability to pay bribery or other informal charges. In this study, this endogeneity problem is less likely to play a role due to the construction of our measures of corruption. Corruption is defined as firms' perception and judgment about how corrupt the local business and industrial environments are, rather than the level of corruption that the individual firms face. Industry and province

<sup>8</sup> We note that the variables *BANKDUM* and *INFORMALDUM* may be endogenous as they could be affected by firm performance. We lack a good instrument for these variables, but in an unreported robustness we rerun our main analyses without these two variables and find our main results unaffected.

**Table 1**  
Summary statistics. This table presents summary statistics for the measures of corruption, firm growth, and their determinants for the full sample (Panel A) and for the subsamples of private firms and SOEs (Panel B). Definitions of variables are presented in Appendix A. Panel B also present the differences in the means of the variables across both subsamples and the results on a test of the equality of these means. Differences that are significantly different from zero at the 10% level or better are in boldface font. SIZE in this table is total sales (in million VND), not the logarithm of total sales as used in the regressions.

	Mean	Median	Std. dev.	Min	Max	# Obs.						
<i>Panel A: All firms</i>												
CORRUPTION	7.027	6.000	5.557	0	39	874						
PAYMENTDUM	0.613	1.000	0.487	0	1	862						
PAYMENTAMOUNT	0.007	0.000	0.020	0.000	0.200	765						
GROWTH	0.196	0.106	0.402	-0.592	4.283	874						
AGE	11.919	7.000	12.260	1	115	874						
SIZE	68678.85	9.399	226384.8	0	4,100,000	874						
TECH	0.443	0.000	0.497	0	1	874						
CAPACITY	0.790	0.800	0.193	0.030	1.000	874						
BANKDUM	0.752	1.000	0.432	0	1	874						
INFORMALDUM	0.343	0.000	0.475	0	1	874						
PCI	58.803	59.610	7.566	38.810	76.820	874						
ENTRYCOST	6.415	6.230	0.981	4.270	8.770	874						
LANDACCESS	6.474	6.210	1.288	3.670	8.320	874						
TRANSPARENCY	4.970	5.190	0.894	3.230	6.720	874						
STATEBIAS	5.971	5.900	0.837	4.270	8.530	874						
TIMECOST	6.584	6.560	0.699	4.640	8.350	874						
IMPLEMENTATION	5.369	4.840	1.241	2.770	8.270	874						
PRIVSECDEV	5.490	5.090	1.486	2.390	8.140	874						
PROACTIVE	5.859	6.110	1.681	1.200	9.300	874						
	Private firms		SOEs			Private-SOEs						
	Mean	St. dev.	Min	Max	# Obs.	Mean	St. dev.	Min	Max	# Obs.	Difference	p-Value
<i>Panel B: Samples of private firms and SOEs – comparison</i>												
CORRUPTION	7.066	5.508	0	39	741	6.812	5.840	0	27	133	0.254	0.642
PAYMENTDUM	0.601	0.490	0	1	732	0.677	0.469	0	1	130	<b>-0.076</b>	0.094
PAYMENTAMOUNT	0.007	0.021	0.000	0.200	654	0.007	0.015	0.000	0.100	111	0.000	0.995
GROWTH	0.204	0.399	-0.592	4.283	741	0.147	0.415	-0.550	2.500	133	0.057	0.145
AGE	9.687	10.143	1	65	741	24.353	15.282	2	115	133	<b>-14.666</b>	0.000
SIZE	49,726	186,996	0	4,100,000	741	174,271	360,096	0	2,776,733	133	<b>-124,544</b>	0.000
TECH	0.435	0.496	0	1	741	0.489	0.502	0	1	133	-0.054	0.252
CAPACITY	0.790	0.193	0.030	1.000	741	0.790	0.195	0.070	1.000	133	-0.001	0.976
BANKDUM	0.714	0.452	0	1	741	0.962	0.191	0	1	133	<b>-0.249</b>	0.000
INFORMALDUM	0.366	0.482	0	1	741	0.218	0.414	0	1	133	<b>0.148</b>	0.000
PCI	58.778	7.728	38.810	76.820	741	58.946	6.616	38.810	76.820	133		
ENTRYCOST	6.387	0.982	4.270	8.770	741	6.571	0.968	4.270	8.770	133		
LANDACCESS	6.486	1.283	3.670	8.320	741	6.407	1.316	3.670	8.320	133		
TRANSPARENCY	4.959	0.897	3.230	6.720	741	5.032	0.878	3.230	6.720	133		
STATEBIAS	5.980	0.868	4.270	8.530	741	5.917	0.632	4.270	8.530	133		
TIMECOST	6.589	0.698	4.640	8.350	741	6.551	0.709	4.640	8.240	133		
IMPLEMENTATION	5.383	1.245	2.770	8.270	741	5.291	1.221	2.770	8.270	133		
PRIVSECDEV	5.449	1.491	2.390	8.140	741	5.718	1.439	2.560	8.140	133		
PROACTIVE	5.867	1.722	1.200	9.300	741	5.814	1.436	1.200	9.300	133		

dummies should thus capture any endogenous effect of growth on our measures of corruption.

In the second part of our paper, we investigate whether the corruption severity assessed by firms is dependent on public governance quality in the local environment. To this end, we estimate the following equation:

$$CORRUPT_i = \beta_0 + \sum_{k=1}^8 \beta_k GOVERNANCE_k + \eta_i, \quad (2)$$

where  $GOVERNANCE_k$  ( $k = 1, \dots, 8$ ) denote the subindices of Vietnam's Provincial Competitiveness Index, i.e., *ENTRYCOST*, *LANDACCESS*, *TRANSPARENCY*, *TIMECOST*, *IMPLEMENTATION*, *STATEBIAS*, *PROACTIVE*, and *PRIVSECDEV*. We use OLS regressions to explain the perceived level of corruption in the local business environment (*CORRUPTION*) and the perceived amount of informal payments as industry practice (*PAYMENTAMOUNT*), and logit regressions to explain the perceived probability that a firm within a particular industry pays informal charges (*PAYMENTDUM*). All regression results are based on robust standard errors.

#### 4.7. Summary statistics

Table 1 presents summary statistics of our corruption measures and the other variables for our full sample of firms (Panel A), as well as separately for the subsamples of private firms and SOEs (Panel B). Corruption levels in Vietnam are high. More than 60% of firms think that their industry peers pay informal charges as a common industry practice.<sup>9</sup> The surveyed firms estimate that the firms operating within their industry on average pay 0.7% out of their sales to corrupt public officials. For comparison, the average return on sales (computed as the ratio of after-tax profits over sales, not reported in Table 1) is 1.74% and 0.5% for private firms and SOEs, respectively. Hence, the perceived amount of informal payments represents a very large fraction of profitability. Our corruption variables appear to capture different aspects of the perceived severity of

<sup>9</sup> We note that there is a notable difference in the indicated extent of corruption with surveys that directly ask whether the firms themselves pay informal charges. Rand and Tarp (2010) document that in a separate survey also held in 2005 only 37 percent of the firms indicated that they provided informal payments.

corruption. The correlations between *CORRUPTION*, *PAYMENTDUM*, and *PAYMENTAMOUNT* (not tabulated) range from 10% to 47%. The subsamples of private firms and SOEs show similar patterns for the corruption measures. The only exception is *PAYMENTDUM*, which has a slightly lower average value for private firms.<sup>10</sup>

Private firms have a higher average growth rate than SOEs, but the difference is not statistically significant. SOEs in our data sample are significantly older, and bigger in terms of sales. This is consistent with the newly emerged private sector in Vietnam. Private firms depend more heavily on the informal sources of financing, while SOEs have better access to bank financing.

## 5. Corruption and growth

Table 2 present the estimation results of 12 variations of Eq. (1) to explain cross-sectional variation in firm growth. For each of our corruption measures (*CORRUPTION*, *PAYMENTDUM*, and *PAYMENTAMOUNT*), we estimate three regression specifications that differ in their inclusion of industry and province dummies. We also estimate the model without any corruption measure. All models use the full sample of private firms and SOEs, although information on *PAYMENTDUM* and *PAYMENTAMOUNT* is missing for a limited number of firms. The  $R^2$  values in Table 2 lie between 0.08 and 0.12 and are comparable to those reported by other studies on firm-level economic growth (e.g., Allen et al., 2007; Ayyagari et al., 2010).

The key result of Table 2 is that the effect of corruption on firm growth in Vietnam differs significantly across private firms and SOEs. The coefficients on *CORRUPTION* and *PAYMENTAMOUNT* are significantly negative at the 5% level or better in all six specifications we consider. These effects indicate that for the full sample of firms – which is dominated by private firms – corruption has a significantly negative effect on firm growth. The economic magnitude of this effect is large. For example, a one standard deviation (1SD) increase in *CORRUPTION* is associated with a reduction in firm growth by 7%. And a 1SD increase in *PAYMENTAMOUNT* is associated with a reduction in firm growth by 2.5%. This negative effect is not obvious; it suggests that the corruption acts more like a tax (Romer, 1994) than like “speed money” (Lui, 1985).

In each of the six specifications for these two corruption variables, the coefficient on the interaction term between the SOE dummy and the corruption variable is positive – and significantly so in three of these specifications. The coefficient on the interaction term is also significantly positive in all three specifications that include *PAYMENTDUM* as the corruption measure. These findings indicate that corruption has a significantly less adverse impact on SOEs when compared to private firms. In fact, the regressions with *PAYMENTDUM* and *PAYMENTAMOUNT* suggest that corruption

has a positive effect on the growth of SOEs, as the sum of the coefficients on the corruption variable itself and the interaction with the SOE dummy is positive.<sup>11</sup> In unreported tests, we estimate the regressions separately for private firms and SOEs and find a significantly negative effect of corruption on the growth of private firms, and a positive but statistically insignificant effect on SOE growth.

In sum, we find that corruption adversely affects the development of private firms in Vietnam, while it does not hamper the growth of SOEs. Vietnam’s state sector has underperformed the private sector on many dimensions (see, e.g., the difference in average profitability reported in Section 4.7), despite enjoying large investments from the government.<sup>12</sup> The close relationship between SOEs and public officials seems to induce corruption that benefits both parties, compensating the potential negative effects of corruption. Corruption may play a role in keeping relatively inefficient SOEs in operation. Corruption in Vietnam may thus have severe adverse effects on the free market mechanism that the country has aimed to adopt.

A second interesting result in Table 2 concerns the role of formal and informal financing in promoting growth. Small and medium-sized enterprises (i.e., most private firms in Vietnam) generally have a harder time getting access to formal sources of capital than larger and more established firms (see, e.g., Ang, 1992; Berger and Udell, 1998). As a consequence, they more often rely on informal sources of funding, such as loans from family, friends, or money lenders, rather than banks and other financial institutions. In our sample, 71.4% of the private firms have access to bank financing for their working capital and/or new investments, compared to 96.2% of SOEs (see Table 1). In general, private firms receive bank credit in the form of short-term credit, primarily for day-to-day working capital or trading needs, rather than for more long-term fixed capital investment needs. As a result, 36.6% of the private firms rely on informal financing, compared to 21.8% of the SOEs.

Table 2 shows that reliance on informal financing deters growth of both private firms and SOEs. The coefficient on *INFORMALDUM* is negative in all 12 regression models and significantly so in eight. The coefficient on the interaction term between *INFORMALDUM* and the SOE dummy is also negative in all regressions, which suggests that reliance on informal finance is an even worse indicator of growth for SOEs, although the effect is not statistically significant. Firms may thus choose to resort to informal financing, but this appears unfavorable for further development and growth. Somewhat surprisingly, the dummy variable for access to bank financing does not explain cross-sectional variation in growth. But the interaction term between *BANKDUM* and the SOE dummy is significantly positive in seven out of 12 regressions. SOEs’ advantage in access to bank financing may partly help these firms to enhance their growth, when compared to the general situation for the corporate sector in Vietnam.

Besides the corruption and financing variables, we find a number of significant results for the control variables. As expected, growth is negatively associated with firm age, and positively with technology application and capacity utilization. Table 2 also reports the number of significant coefficients on the 16 industry and 23 province dummies. As the number of significant coefficients

<sup>10</sup> The levels of perceived corruption in Panel B of Table 1 cannot be directly compared across the subsamples of private firms and SOEs, since these subsamples differ along more dimensions than just the ownership status. To make the average levels of perceived corruption more comparable across both types of firms, we discard SOEs for which we do not have a corresponding private firm in the same province that operates in the same industry. We keep all other SOEs in the sample as well as the matching private firms. This procedure generates a subsample of 436 observations. We then redo the comparison across private firms and SOEs in Panel B of Table 1 in the paper and test for the difference in the means. The perceived level of corruption according to two measures (*CORRUPTION* and *PAYMENTAMOUNT*) is again not economically or statistically significantly different across both types of firms. For the other measure (*PAYMENTDUM*), we actually find that SOEs indicate economically and statistically significantly higher levels of corruption than private firms. When we only match SOEs to one private firm in the same province and industry that is closest in terms of its total assets, we find that differences in the average level of each corruption variable across both types of firms are neither economically nor statistically significant. We interpret these results as evidence that alleviates the concern that SOEs systematically understate the level of corruption in the local business environment or industry.

<sup>11</sup> The economic significance of the net positive effect of corruption on SOE firm growth seems sizable. A 1SD increase in *PAYMENTDUM* (*PAYMENTAMOUNT*) is associated with an increase in SOE firm growth of 5.9% (1.7%). However, these effects are not statistically significant.

<sup>12</sup> In 2006, Vietnamese SOEs borrowed VND 48.5 trillion for investments in business expansion, while in total they created a value of VND 42 trillion of production (source: public media news about Vietnam’s Nation Assembly congress, 2008). Although SOEs have been given priorities in receiving government investments and exhaust 60% of national capital resources, for the past ten years they generated only about 40% of total profit before taxes (Nguyen, 2006).

**Table 2**  
Determinants of firm growth – The role of corruption. This table presents OLS regression results to explain cross-sectional variation in firm growth (*GROWTH*) for the full sample of firms. Definitions of variables are presented in Appendix A. *p*-Values based on standard errors that are robust to heteroskedasticity are in italics. Coefficients that are significant at the 10% level or better are in boldface font. The number of significant coefficients on province and industry dummies/the total number of dummies is shown in parentheses. The table also reports the result of an *F*-test on the joint significance on all industry and province dummies combined. Significance at the 1%, 5%, and 10% levels is indicated by a, b, and c, respectively.

Model	(1)		(2)		(3)		(4)		(5)		(6)	
	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value
AGE	<b>-0.003<sup>b</sup></b>	0.02	<b>-0.004<sup>a</sup></b>	0.01	<b>-0.003<sup>b</sup></b>	0.04	<b>-0.003<sup>b</sup></b>	0.02	<b>-0.004<sup>a</sup></b>	0.01	<b>-0.003<sup>b</sup></b>	0.03
SIZE	0.01	0.53	0.01	0.18	0.01	0.33	0.01	0.42	0.02	0.11	0.01	0.23
TECH	<b>0.11<sup>a</sup></b>	0.00	<b>0.11<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00	<b>0.11<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00
CAPACITY	<b>0.22<sup>a</sup></b>	0.00	<b>0.20<sup>a</sup></b>	0.01	<b>0.22<sup>a</sup></b>	0.00	<b>0.21<sup>a</sup></b>	0.00	<b>0.19<sup>a</sup></b>	0.01	<b>0.21<sup>a</sup></b>	0.00
BANKDUM	0.02	0.55	-0.01	0.86	0.00	0.96	0.01	0.65	-0.01	0.71	-0.01	0.80
INFORMALDUM	<b>-0.06<sup>c</sup></b>	0.06	-0.04	0.16	<b>-0.05<sup>c</sup></b>	0.07	<b>-0.06<sup>c</sup></b>	0.06	-0.04	0.16	<b>-0.05<sup>c</sup></b>	0.07
CORRUPTION							<b>-0.01<sup>b</sup></b>	0.02	<b>-0.01<sup>b</sup></b>	0.04	<b>-0.01<sup>b</sup></b>	0.02
PAYMENTDUM												
PAYMENTAMOUNT												
SOE	-0.12	0.48	-0.26	0.17	-0.22	0.25	-0.15	0.41	-0.23	0.23	-0.21	0.27
SOE * AGE	0.00	0.36	0.00	0.30	0.00	0.51	0.00	0.37	0.00	0.34	0.00	0.56
SOE * SIZE	0.00	0.99	0.00	0.83	0.01	0.68	0.00	0.89	0.00	0.88	0.00	0.89
SOE * TECH	-0.11	0.16	-0.08	0.35	-0.13	0.11	-0.12	0.12	-0.09	0.25	<b>-0.14<sup>c</sup></b>	0.07
SOE * CAPACITY	-0.03	0.85	0.05	0.74	0.01	0.95	-0.03	0.87	0.05	0.75	0.01	0.93
SOE * BANKDUM	<b>0.13<sup>c</sup></b>	0.08	0.13	0.15	<b>0.14<sup>c</sup></b>	0.08	<b>0.13<sup>c</sup></b>	0.09	0.12	0.20	<b>0.13<sup>c</sup></b>	0.10
SOE * INFORMALDUM	-0.04	0.50	-0.07	0.32	-0.06	0.38	-0.05	0.49	-0.08	0.26	-0.07	0.32
SOE * CORRUPTION							0.01	0.16	<b>0.01<sup>b</sup></b>	0.04	<b>0.01<sup>c</sup></b>	0.07
SOE * PAYMENTDUM												
SOE * PAYMENTAMOUNT												
Industry dummies	Yes (5/16)		No		Yes (2/16)		Yes (5/16)		No		Yes (2/16)	
Province dummies	No		Yes (4/23)		Yes (2/23)		No		Yes (2/23)		Yes (2/23)	
<i>F</i> -test on industry/province dummies	3.85 <sup>a</sup>		2.38 <sup>a</sup>		2.74 <sup>a</sup>		3.56 <sup>a</sup>		2.34 <sup>a</sup>		2.64 <sup>a</sup>	
# Obs.	874		874		874		874		874		874	
<i>R</i> <sup>2</sup>	0.09		0.08		0.12		0.10		0.08		0.12	
Model	(7)		(8)		(9)		(10)		(11)		(12)	
	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value
AGE	<b>-0.003<sup>b</sup></b>	0.02	<b>-0.004<sup>a</sup></b>	0.01	<b>-0.003<sup>b</sup></b>	0.03	<b>-0.003<sup>b</sup></b>	0.03	<b>-0.003<sup>b</sup></b>	0.02	<b>-0.003<sup>c</sup></b>	0.06
SIZE	0.01	0.42	0.01	0.13	0.01	0.27	0.00	0.69	0.01	0.34	0.01	0.51
TECH	<b>0.11<sup>a</sup></b>	0.00	<b>0.11<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00	<b>0.12<sup>a</sup></b>	0.00
CAPACITY	<b>0.21<sup>a</sup></b>	0.01	<b>0.20<sup>a</sup></b>	0.01	<b>0.21<sup>a</sup></b>	0.00	<b>0.19<sup>b</sup></b>	0.02	<b>0.17<sup>b</sup></b>	0.02	<b>0.19<sup>b</sup></b>	0.02
BANKDUM	0.02	0.62	-0.01	0.78	0.00	0.89	0.01	0.73	-0.01	0.77	-0.01	0.80
INFORMALDUM	<b>-0.06<sup>c</sup></b>	0.08	-0.04	0.22	<b>-0.05<sup>c</sup></b>	0.10	<b>-0.07<sup>c</sup></b>	0.06	-0.05	0.15	<b>-0.06<sup>c</sup></b>	0.07
CORRUPTION												
PAYMENTDUM	-0.03	0.42	-0.01	0.68	-0.02	0.62						
PAYMENTAMOUNT							<b>-1.31<sup>a</sup></b>	0.01	<b>-1.09<sup>b</sup></b>	0.02	<b>-1.20<sup>a</sup></b>	0.01
SOE	-0.13	0.50	-0.29	0.15	-0.24	0.24	-0.22	0.26	-0.33	0.11	-0.30	0.17
SOE * AGE	0.00	0.40	0.00	0.36	0.00	0.55	0.00	0.91	0.00	0.96	0.00	0.86
SOE * SIZE	-0.01	0.57	-0.01	0.70	0.00	0.90	0.01	0.48	0.02	0.30	0.02	0.32
SOE * TECH	-0.10	0.22	-0.06	0.48	-0.12	0.16	-0.13	0.13	-0.10	0.27	-0.14	0.11
SOE * CAPACITY	-0.02	0.91	0.08	0.61	0.03	0.85	0.01	0.94	0.06	0.69	0.04	0.78
SOE * BANKDUM	<b>0.16<sup>c</sup></b>	0.08	<b>0.17</b>	0.10	<b>0.17<sup>c</sup></b>	0.06	0.09	0.31	0.06	0.52	0.08	0.36
SOE * INFORMALDUM	-0.06	0.42	-0.09	0.23	-0.08	0.30	-0.03	0.72	-0.05	0.57	-0.04	0.58
SOE * CORRUPTION												
SOE * PAYMENTDUM	<b>0.13<sup>c</sup></b>	0.06	<b>0.15<sup>b</sup></b>	0.04	<b>0.14<sup>b</sup></b>	0.05						
SOE * PAYMENTAMOUNT							<b>2.85<sup>b</sup></b>	0.04	1.75	0.22	2.36	0.13
Industry dummies	Yes (4/16)		No		Yes (2/16)		Yes (3/16)		No		Yes (1/16)	
Province dummies	No		Yes (4/23)		Yes (2/23)		No		Yes (5/23)		Yes (3/23)	
<i>F</i> -test on industry/province dummies	3.30 <sup>a</sup>		2.44 <sup>a</sup>		2.55 <sup>a</sup>		3.04 <sup>a</sup>		2.31 <sup>a</sup>		2.41 <sup>a</sup>	
# Obs.	862		862		862		765		765		765	
<i>R</i> <sup>2</sup>	0.09		0.08		0.12		0.09		0.09		0.12	

is small and the improvement in *R*<sup>2</sup> limited, it seems that industry and regional effects do not capture much of the cross-sectional variation in growth that our firm-level variables do not account for.

In the next section, we examine whether variation in the severity of corruption across firms and provinces can be explained by variables that measure provincial public governance. It may be the case that these variables also have a direct effect on firm growth. In unreported tests, we therefore add the provincial governance variables to the baseline models in Table 2. The regressions do not uncover a strong direct effect of provincial governance on firm growth, once we control for the effects of firm-level growth

determinants and sector dummies. The only governance variable with a robust effect on firm growth is *ENTRYCOST*. Its negative coefficient suggests that firms tend to grow less quickly in provinces with more cumbersome entry regulations. One potential explanation may be that firms facing less competition from start-ups tend to reduce output and may have fewer incentives to innovate and grow. There is no significant difference between the effects on private firms and SOEs.

We also examine whether the interaction between provincial governance and corruption can explain variation in growth across firms. For two of the corruption measures (*CORRUPTION* and *PAY-*



**Table 3**

Corruption across provinces. This table presents the mean values (as well as the number of observations) of the perceived corruption severity in the local business environment (*CORRUPTION*), the perceived existence of informal charges as industry practice (*PAYMENTDUM*), and the perceived level of informal charges paid as industry practice (*PAYMENTAMOUNT*) for the full sample (Panel A) and for the subsamples of private firms (Panel B) and SOEs (Panel C). We follow the conventions of the PCI index report of the VCCI and order provinces from the North to the South of Vietnam. Definitions of variables are presented in Appendix A.

Province	<i>CORRUPTION</i>		<i>PAYMENTDUM</i>		<i>PAYMENTAMOUNT</i>	
	Mean	# Obs.	Mean	# Obs.	Mean	# Obs.
<i>Panel A: Full sample</i>						
Hanoi	9.156	109	0.583	97	0.011	108
Hai Phong	11.119	67	0.955	56	0.012	67
Ha Tay	4.231	26	0.500	24	0.007	26
Bac Ninh	7.476	21	0.714	15	0.007	21
Hai Duong	11.700	10	1.000	7	0.002	10
Nam Dinh	7.423	26	0.731	26	0.009	26
Thanh Hoa	9.434	53	0.830	49	0.006	53
Nghe An	3.222	27	0.259	22	0.001	27
Ha Tinh	2.840	25	0.458	23	0.004	24
Thua Thien Hue	7.786	14	1.000	12	0.028	14
Da Nang	4.719	32	0.531	30	0.003	32
Quang Nam	1.786	14	0.357	13	0.005	14
Quang Ngai	2.167	6	0.400	4	0.005	5
Binh Dinh	6.882	34	0.412	33	0.003	34
Khanh Hoa	6.676	34	0.588	33	0.012	34
Ho Chi Minh city	7.983	181	0.692	151	0.006	172
Binh Duong	6.552	58	0.569	47	0.008	58
Dong Nai	5.563	32	0.469	30	0.002	32
Ba Ria-Vung Tau	4.714	14	0.500	12	0.001	14
Long An	5.286	28	0.679	24	0.006	28
Dong Thap	0.000	6	0.167	6	0.000	6
An Giang	1.933	15	0.333	14	0.000	15
Tien Giang	4.063	16	0.188	13	0.000	16
Can Tho	3.615	26	0.308	24	0.000	26
<i>ANOVA (F test) of mean differences of the variable across provinces</i>						
<i>p-Value</i>	0.000		0.029		0.000	
<i>Panel B: Sample of private firms</i>						
Hanoi	8.931	87	0.540	78	0.010	87
Hai Phong	11.731	52	0.942	45	0.012	52
Ha Tay	4.348	23	0.478	21	0.005	23
Bac Ninh	7.476	21	0.714	15	0.007	21
Hai Duong	11.000	9	1.000	6	0.002	9
Nam Dinh	7.818	22	0.727	22	0.009	22
Thanh Hoa	9.620	50	0.840	46	0.007	50
Nghe An	3.056	18	0.278	14	0.001	18
Ha Tinh	2.905	21	0.400	19	0.004	20
Thua Thien Hue	8.077	13	1.000	12	0.028	13
Da Nang	4.250	24	0.500	24	0.003	24
Quang Nam	1.667	9	0.333	9	0.002	9
Quang Ngai	2.000	3	0.333	3	0.007	3
Binh Dinh	6.968	31	0.387	30	0.003	31
Khanh Hoa	6.613	31	0.581	30	0.010	31
Ho Chi Minh city	7.704	152	0.660	129	0.006	144
Binh Duong	6.833	54	0.593	44	0.008	54
Dong Nai	5.821	28	0.500	26	0.002	28
Ba Ria-Vung Tau	5.000	12	0.500	10	0.001	12
Long An	5.407	27	0.667	23	0.007	27
Dong Thap	0.000	5	0.200	5	0.000	5
An Giang	1.917	12	0.333	11	0.000	12
Tien Giang	4.357	14	0.214	11	0.000	14
Can Tho	3.565	23	0.261	21	0.000	23
<i>ANOVA (F test) of mean differences of the variable across provinces</i>						
<i>p-Value</i>	0.000		0.185		0.000	
<i>Panel C: Sample of SOEs</i>						
Hanoi	10.045	22	0.762	19	0.015	21
Hai Phong	9.000	15	1.000	11	0.008	15
Ha Tay	3.333	3	0.667	3	0.024	3
Bac Ninh		0		0		0
Hai Duong	18.000	1	1.000	1	0.005	1
Nam Dinh	5.250	4	0.750	4	0.010	4
Thanh Hoa	6.333	3	0.667	3	0.002	3
Nghe An	3.556	9	0.222	8	0.000	9
Ha Tinh	2.500	4	0.750	4	0.003	4
Thua Thien Hue	4.000	1	1.000	0		1
Da Nang	6.125	8	0.625	6	0.000	8
Quang Nam	2.000	5	0.400	4	0.013	5

(continued on next page)

Table 3 (continued)

Province	CORRUPTION		PAYMENTDUM		PAYMENTAMOUNT	
	Mean	# Obs.	Mean	# Obs.	Mean	# Obs.
Quang Ngai	2.333	3	0.500	1	0.000	2
Binh Dinh	6.000	3	0.667	3	0.004	3
Khanh Hoa	7.333	3	0.667	3	0.034	3
Ho Chi Minh city	9.448	29	0.857	22	0.002	28
Binh Duong	2.750	4	0.250	3	0.000	4
Dong Nai	3.750	4	0.250	4	0.001	4
Ba Ria-Vung Tau	3.000	2	0.500	2	0.001	2
Long An	2.000	1	1.000	1	0.001	1
Dong Thap	0.000	1	0.000	1	0.000	1
An Giang	2.000	3	0.333	3	0.000	3
Tien Giang	2.000	2	0.000	2	0.000	2
Can Tho	4.000	3	0.667	3	0.001	3
ANOVA (F test) of mean differences of the variable across provinces						
p-Value			0.106		0.007	

MENTDUM), the interaction with STATEBIAS is significantly positive for SOEs, but not significant for private firms. This finding is consistent with the conjecture that the positive effects of corruption on SOEs are more pronounced in provinces that offer more preferential treatment to SOEs.

## 6. Corruption and governance

### 6.1. Corruption differences across provinces

Corruption varies significantly across provinces in Vietnam. From October 2006 till September 2007, 400 corruption cases in Vietnam were brought to court, involving 820 persons. The total estimated damages in these cases were estimated to be up to VND 290 billion. The cases took place with particularly high frequencies in Hanoi, Ho Chi Minh city, Nghe An, Thanh Hoa, Long An, Binh Thuan (news release on Vnexpress.net by Hoang Khue on 17 December, 2007).

Table 3 shows the mean of the three corruption measures for each of the 24 provinces in our sample, for our full sample of firms (Panel A), as well as separately for the subsamples of private firms (Panel B) and SOEs (Panel C). The table also presents the results of an ANOVA to test for differences in the means across provinces. Most of these tests clearly reject the hypothesis that the level of corruption is the same in each province. The exception is PAYMENTDUM, for which the *p*-value of the ANOVA becomes higher than 0.10 (but still below 0.20) for the subsamples. The highest levels of corruption in the local business environment are found in the provinces of Hai Duong, Hai Phong, Thanh Hoa, Hanoi, Ho Chi Minh city, and Thua Thien Hue. The least corrupt environments are in Dong Thap, Quang Nam, An Giang, Quang Ngai, Nghe An, and Can Tho.

These statistics are confirmed by anecdotal evidence. For example, in Hai Phong, the vice president of the municipal people's committee was brought to criminal court in December 2007 for his involvement in two big corruption cases of land allocation. Hai Phong also dismissed the general secretary of the communist party in one municipal district and the director of the municipal department of natural resources and environment, both of whom were convicted for land corruption. In Thanh Hoa, many local leaders at the commune level were arrested and sentenced for up to 10 years, also for land corruption. Similarly, in Ho Chi Minh city, the president of the Go Vap district people's committee, the general secretary of the communist party, and many other officials were caught and sentenced for 11 to 25 years due for bribery and land corruption in July 2007. Land corruption cases mostly

involved illegal allocation of land for private usage or for unauthorized groups of people.<sup>13</sup>

### 6.2. The relation between provincial public governance and corruption

Table 4 presents the regression results of Eq. (2) to explain cross-sectional variation in perceived corruption using the provincial governance indicators.<sup>14</sup> Panel A shows OLS regression results with CORRUPTION as the dependent variable. We interact a SOE dummy with all explanatory variables to capture any potential differences for SOEs. Although the effect of the overall governance index (*PCI*) is not significant, the results show that several of the subindices have a significant effect on the perceived level of corruption in the local business environment. We find that better land access (*LANDACCESS*) reduces perceived corruption. Good land access means that firms have legal land-use rights and that there is sufficient land available for business expansion at reasonable prices. Because a lot of corruption cases involve land corruption and as land corruption mostly has to do with land distribution (see Section 6.1), better land access reduces public officials' control over land and thus their power to extract payments. The marginal effect of a 1SD increase in *LANDACCESS* is a reduction of 0.77 in *CORRUPTION*, which corresponds to 13.9% of the cross-sectional SD of *CORRUPTION*.

Strikingly, the coefficient on the interaction of *LANDACCESS* with the SOE dummy is significantly positive. In fact, the sum of the coefficient on this interaction term and the coefficient on *LANDACCESS* itself is positive (though only marginally significant in unreported regression results for the subsample of SOEs separately). This result suggests that when provinces provide better access to land resources, SOEs may be more willing to make informal payments to influence public officials in the competition for land resources with private firms.

Similarly, we find that in provinces with stronger policies for promoting private sector development (*PRIVSECDEV*), private firms (SOEs) perceive lower (higher) levels of corruption. A potential explanation is that SOEs are more willing to make informal payments when they face the risk of losing their privileges over the private sector. A higher score for the implementation and consistency of policies (*IMPLEMENTATION*) is associated with a lower perception about corruption in the business environment. The coefficients of this variable are consistently negative and

<sup>13</sup> We extract information about corruption cases from articles in Vietnam's officially authorized electronic newspapers, e.g., Vnexpress, Tienphong, and Thanhnien.

<sup>14</sup> Appendix B reports the values of the *PCI* and its subindices for the 24 provinces in our sample.

**Table 4**

Determinants of corruption – the role of public governance. This table presents the regressions to explain variation in the corruption severity in the local business environment (*CORRUPTION*, Panel A), the probability of firms' paying informal charges as industry practice (*PAYMENTDUM*, Panel B), and the level of informal charges paid as industry practice (*PAYMENTAMOUNT*, Panel C) using provincial public governance indicators. Definitions of variables are presented in [Appendix A](#). The coefficients significant at the 10% level are in boldface font. *p*-Values based on robust standard errors are in italics. Intercepts are not reported. Significance at the 1%, 5% and 10% levels is indicated by a, b, and c, respectively.

Model	(1)		(2)		(3)		(4)	
	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value
<i>Panel A: Determinants of the corruption in the local business environment (OLS regression)</i>								
PCI	−0.01	0.83						
ENTRYCOST			0.08	0.78				
LANDACCESS			<b>−0.59<sup>b</sup></b>	0.02	<b>−0.60<sup>b</sup></b>	0.02	<b>−0.59<sup>b</sup></b>	0.02
TRANSPARENCY			0.37	0.18	0.36	0.18	0.38	0.16
STATEBIAS			0.17	0.62	0.18	0.58		
TIMECOST			−0.56	0.14	−0.53	0.13	<b>−0.61<sup>c</sup></b>	0.06
IMPLEMENTATION			<b>−1.65<sup>a</sup></b>	0.00	<b>−1.66<sup>a</sup></b>	0.00	<b>−1.69<sup>a</sup></b>	0.00
PRIVSECDEV			<b>−0.35<sup>b</sup></b>	0.05	<b>−0.33<sup>b</sup></b>	0.04	<b>−0.34<sup>b</sup></b>	0.03
PROACTIVE			<b>0.80<sup>a</sup></b>	0.01	<b>0.82<sup>a</sup></b>	0.00	<b>0.90<sup>a</sup></b>	0.00
SOE	−3.27	0.42	0.06	0.99	1.12	0.90	−7.91	0.24
SOE * PCI	0.05	0.46						
SOE * ENTRYCOST			0.65	0.28				
SOE * LANDACCESS			<b>1.43<sup>a</sup></b>	0.01	<b>1.31<sup>b</sup></b>	0.02	<b>1.41<sup>a</sup></b>	0.01
SOE * TRANSPARENCY			−0.20	0.75	−0.06	0.92	−0.14	0.83
SOE * STATEBIAS			−1.20	0.14	−1.23	0.13		
SOE * TIMECOST			−0.49	0.55	−0.24	0.76	0.08	0.92
SOE * IMPLEMENTATION			−0.49	0.42	−0.52	0.41	−0.23	0.69
SOE * PRIVSECDEV			0.55	0.16	<b>0.69<sup>c</sup></b>	0.09	<b>0.98<sup>a</sup></b>	0.01
SOE * PROACTIVE			−0.53	0.44	−0.34	0.64	−0.98	0.09
# Obs.		874		874		874		874
R <sup>2</sup>		0.001		0.10		0.10		0.09
Model	(5)		(6)		(7)		(8)	
	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value
<i>Panel B: Logit regression of firms' choice of paying informal charges</i>								
PCI	−0.01	0.15						
ENTRYCOST			0.17	0.17	0.18	0.13	0.14	0.19
LANDACCESS			−0.09	0.36	−0.08	0.35	−0.07	0.39
TRANSPARENCY			<b>0.18<sup>c</sup></b>	0.09	<b>0.19<sup>c</sup></b>	0.08	0.15	0.11
STATEBIAS			0.13	0.36	0.14	0.27	0.16	0.17
TIMECOST			−0.11	0.47	−0.10	0.49		
IMPLEMENTATION			<b>−0.37<sup>a</sup></b>	0.00	<b>−0.36<sup>a</sup></b>	0.00	<b>−0.34<sup>a</sup></b>	0.00
PRIVSECDEV			<b>−0.23<sup>a</sup></b>	0.00	<b>−0.22<sup>a</sup></b>	0.00	<b>−0.21<sup>a</sup></b>	0.00
PROACTIVE			0.02	0.85				
SOE	1.12	0.57	4.35	0.38	<b>7.62<sup>b</sup></b>	0.03	3.45	0.17
SOE * PCI	−0.01	0.69						
SOE * ENTRYCOST			−0.13	0.72	−0.21	0.54	−0.40	0.22
SOE * LANDACCESS			<b>0.56<sup>b</sup></b>	0.05	<b>0.42<sup>c</sup></b>	0.06	<b>0.42<sup>b</sup></b>	0.05
SOE * TRANSPARENCY			0.38	0.24	0.39	0.24	0.12	0.69
SOE * STATEBIAS			−0.51	0.30	<b>−0.79<sup>b</sup></b>	0.05	<b>−0.64<sup>c</sup></b>	0.09
SOE * TIMECOST			−0.64	0.14	<b>−0.73<sup>c</sup></b>	0.07		
SOE * IMPLEMENTATION			−0.40	0.17	<b>−0.57<sup>a</sup></b>	0.01	<b>−0.33<sup>c</sup></b>	0.08
SOE * PRIVSECDEV			<b>0.49<sup>c</sup></b>	0.07	<b>0.37<sup>c</sup></b>	0.08	0.34	0.11
SOE * PROACTIVE			−0.36	0.42				
# Obs.		862		862		862		862
Pseudo-R <sup>2</sup>		0.005		0.06		0.06		0.06
Model	(9)		(10)		(11)		(12)	
	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value	Coeff.	<i>p</i> -Value
<i>Panel C: Determinants of how much informal charge firms pay (OLS regression)</i>								
PCI	0.00	0.99						
ENTRYCOST			<b>0.001<sup>c</sup></b>	0.07	<b>0.001<sup>b</sup></b>	0.05	<b>0.001<sup>b</sup></b>	0.05
LANDACCESS			−0.001	0.21	−0.001	0.24	−0.001	0.25
TRANSPARENCY			0.000	0.80	0.000	0.80		
STATEBIAS			0.000	0.86	0.000	0.85		
TIMECOST			<b>−0.002<sup>b</sup></b>	0.05	<b>−0.002<sup>b</sup></b>	0.04	<b>−0.002<sup>b</sup></b>	0.02
IMPLEMENTATION			<b>−0.002<sup>a</sup></b>	0.01	<b>−0.002<sup>a</sup></b>	0.01	<b>−0.002<sup>a</sup></b>	0.00
PRIVSECDEV			0.000	0.94				
PROACTIVE			0.001	0.47	0.001	0.54	0.001	0.39
SOE	0.02	0.21	0.035	0.19	<b>0.045<sup>c</sup></b>	0.08	<b>0.032<sup>c</sup></b>	0.07
SOE * PCI	0.00	0.19						
SOE * ENTRYCOST			0.000	0.95	0.000	0.84	0.000	0.92
SOE * LANDACCESS			0.000	0.94	0.000	0.82	−0.001	0.38
SOE * TRANSPARENCY			−0.004	0.13	<b>−0.004<sup>c</sup></b>	0.09		
SOE * STATEBIAS			−0.002	0.48	−0.003	0.32		
SOE * TIMECOST			−0.001	0.55	−0.002	0.44	−0.003	0.21

(continued on next page)

Table 4 (continued)

Model	(1)		(2)		(3)		(4)	
	Coeff.	p-Value	Coeff.	p-Value	Coeff.	p-Value	Coeff.	p-Value
SOE * IMPLEMENTATION			0.000	0.93	−0.001	0.70	−0.001	0.64
SOE * PRIVSECDEV			0.001	0.48				
SOE * PROACTIVE			0.000	0.88	0.001	0.66	0.000	0.84
# Obs.		765		765		765		765
R <sup>2</sup>		0.002		0.02		0.02		0.02

significant, and show no difference between private firms and SOEs. The economic significance is substantial; a 1SD increase in *IMPLEMENTATION* is associated with a reduction of 2.05 in *CORRUPTION*, or 36.8% of the cross-sectional SD.

The perceived level of corruption in the local business environment is greater when *PROACTIVE* (the “proactivity and astuteness of provincial leadership in implementing central policy – designing their own initiatives for private sector development, and working within national regulatory frameworks”) is greater, a result that could potentially be attributed to active provincial leadership creating more rent-seeking opportunities. Again, the economic significance is considerable. A 1SD increase in *PROACTIVE* is associated with an increase of 0.24SD in *CORRUPTION*.

Panel B of Table 4 shows logit regression results with *PAYMENTDUM* as the dependent variable. Again, we find that a number of the subindices show a significant association with perceived corruption. The results for *IMPLEMENTATION* and *PRIVSECDEV* are similar to those in Panel A. Better implementation and consistency of policies and stronger policies for promoting private sector development are associated with lower perceived levels of corruption. Similar to Panel A, we also find that higher values for *LANDACCESS* are associated with higher levels of corruption for SOEs.<sup>15</sup> *STATEBIAS* has a negative effect on corruption for SOEs. The effect of *TRANSPARENCY* on corruption is positive, which is counter-intuitive (although the statistical significance is weak).

Panel C of Table 4 presents OLS regression results with *PAYMENTAMOUNT* as the dependent variable. There are three governance subindices that have a consistently significant effect in all specification. In line with Panels A and B, the implementation and consistency of policies (*IMPLEMENTATION*) is significantly negatively related to corruption. In addition, we observe that higher regulatory entry costs for firms (*ENTRYCOST*) are associated with more perceived corruption. This result makes sense, as high entry costs are an indication of bureaucracy, which facilitates rent-seeking behavior. Panel C also shows that the more time firms spend on bureaucratic compliance (*TIMECOST*), the lower perceived informal charges. This result suggests that informal charges and bureaucratic compliance are substitutes. The economic significance is somewhat smaller than in Panel A, but is still non-negligible for several of the variables. For example, a 1SD increase in *IMPLEMENTATION* is associated with a reduction of 0.12SD in *PAYMENTAMOUNT*.

Overall, the results in Table 4 suggest that provincial public governance plays an important role in shaping the severity of corruption perceived by Vietnamese firms. Land access, the promotion of private sector development, and the implementation and consistency of policies have the strongest and most consistent effects on corruption. The effects of the first two of these variables are significantly weaker, if not reversed, for SOEs. These results suggest that improvements in local public governance quality can contribute to curbing corruption.

<sup>15</sup> Greene (2010) suggests that caution should be applied in the interpretation of standard statistical tests of interaction terms in non-linear model (such as the logit model we estimate for *PAYMENTDUM*).

## 7. Conclusions

This paper contributes to the limited literature on the link between corruption, growth, and public governance within the context of a single country. Our study highlights the importance of distinguishing between private and state sectors. Using a sample of nearly 900 Vietnamese firms across 24 provinces, we show that corruption has different effects on private firms and state-owned enterprises (SOEs). Specifically, we find a significantly negative relation between the growth of private firms and the severity of corruption as perceived by these firms. Corruption imposes significantly less harm on the growth of SOEs. In fact, we find a positive but insignificant relation between SOE growth and the corruption experienced by SOEs, a result that may arise from the special relationship between SOEs and public officials. As the private sector in Vietnam has proven itself to be more efficient than the state sector, our results suggest that the government’s discriminatory treatment of firms in different sectors distorts the business environment and is harmful for the development of the economy.

We document that corruption varies widely across provinces in Vietnam. We provide evidence that the quality of provincial public governance plays an important role in determining the level of corruption. Key aspects of local public governance include regulatory entry costs, land access, the implementation and consistency of policies, and policies for private sector development.

Our results emphasize the relevance of within-country research on corruption, which is important to understand why and how corruption affects the economy, and can thus provide important policy lessons for central and local governments. We suggest that improvements in public governance quality and the leveling of the playing field for firms in all business sectors can help to reduce corruption and thus mitigate its harmful effects on economic growth.

## Acknowledgements

We are grateful to the World Bank for providing their survey data on Vietnamese firms, and to VNCI and VCCI for providing Vietnam’s Provincial Competitiveness Indices. We thank Abe de Jong, Niels Hermes, Rez Kabir, Robert Lensink, Darius Miller, Tu-Anh Nguyen, Peter Roosenboom, seminar participants at Erasmus University, the July 2008 “Management, Economic Policy and Growth” conference (Ho Chi Minh City, Vietnam), the 2008 Corporate Finance Day (Rotterdam, the Netherlands), and the 2010 University of Twente Symposium on International Corporate Finance and Governance, and especially Thomas Boulton (our discussant at the Twente Symposium) and an anonymous referee for many helpful comments and suggestions. We gratefully acknowledge the receipt of the best paper award at the “Management, Economic Policy and Growth” conference.

## Appendix A. Variable definitions

See Table A1.

Table A1

Variable	Definition
<i>Panel A: The World Bank's "Productivity and Investment Climate Enterprise Survey"</i>	
CORRUPTION	Sum of all the subscores of corruption ranks indicated by the firms (scale: from 0 = no corruption to 4 = widespread corruption in the local business environment). The subscores are corruption levels for tax department officials, officials in business registration and licensing, import/export license authorities, customs department, construction permit authorities, traffic police, municipal and other police, market controller, land administration agency, and district peoples' committee
PAYMENTDUM	Dummy variable that is equal to one if the firm perceives that there are informal payments to public officials in the industry, and zero otherwise. Answer to the question: "We've heard that establishments are sometimes required to make gifts or informal payments to public officials to "get things done" with regard to customs, taxes, licenses, regulations, services etc. Does it occur for establishments in your industry (not necessarily yours)?"
PAYMENTAMOUNT	Ratio of informal payments that the industry pays (as estimated by the firm) over annual industry sales,
GROWTH	Growth rate of total assets.
SIZE	Logarithm of total sales (sales are in million VND)
AGE	Firm age (in years)
TECH	Dummy variable for new technological application. Answer to the question "Has your establishment acquired new technology over 2004 and 2003 that either substantially changed the way the main products are produced or allowed the production of new products?"
CAPACITY	Capacity utilization: the ratio of output actually produced over the maximum amount that could be produced
BANKDUM	Dummy variable that is equal to one if the firm uses bank financing for working capital or new investments, and zero otherwise. Bank financing comes from private commercial banks, state-owned commercial banks, international commercial banks, leasing arrangements, development assistance funds, and state budget
INFORMALDUM	Dummy variable that is equal to one if the firm uses informal financing for working capital or new investments, and zero otherwise. Informal financing comes from family, friends, and informal sources such as money lenders
<i>Panel B: VNCI and VCCI's "Vietnam Provincial Competitiveness Index Survey"</i>	
Variable	Definition
ENTRYCOST	Provincial index that measures the time it takes firms to register, acquire land, and receive all the necessary licenses to start a business, the number of licenses required, and the perceived degree of difficulty to obtain all licenses and permits
LANDACCESS	Provincial index that measures two aspects of the access to land for firms: how easy it is to access land and the security of tenure once land is acquired
TRANSPARENCY	Provincial index that measures whether firms have access to the proper planning and legal documents necessary to run their business
TIMECOST	Provincial index that measures how much time firms expend on bureaucratic compliance, as well as how often and how long firms must shut their operations down for inspections by local regulatory agencies
INFORMALCHARGE	Provincial index that measures how much firms pay in informal charges and how much of an obstacle those extra fees pose for their business operations (not used in the regressions)
IMPLEMENTATION	Provincial index that measures the implementation and consistency of policies
STATEBIAS	Provincial index that measures the perceived bias toward SOEs in terms of incentives, policy, and access to capital
PROACTIVE	Provincial index that measures the proactivity and astuteness of provincial leadership in implementing central policy, designing their own initiatives for private sector development, and working within national regulatory frameworks
PRIVSECDEV	Provincial index that measures provincial services for private sector trade promotion, provision of regulatory information to firms, business partner matchmaking, provision of industrial zones, and technological services for firms
PCI	Provincial competitiveness index: a weighted combination of the nine subindices (ENTRYCOST, LANDACCESS, TRANSPARENCY, TIMECOST, INFORMALCHARGE, IMPLEMENTATION, STATEBIAS, PROACTIVE, and PRIVSECDEV)

Table B1

This appendix presents the values of the Provincial Competitiveness Index (PCI) and its subindices for the 24 provinces in Vietnam that are included in our sample. Definitions of variables are presented in Appendix A.

Province	PCI	ENTRYCOST	LANDACCESS	TRANSPARENCY	STATEBIAS	TIMECOST	IMPLEMENTATION	PRIVSECDEV	PROACTIVE
Hanoi	60.32	7.28	6.05	4.12	5.72	6.78	4.32	7.73	6.23
Hai Phong	59.40	7.02	5.68	5.69	5.98	6.42	4.69	5.29	5.32
Ha Tay	38.81	4.27	3.67	3.75	4.27	6.10	4.84	3.27	1.20
Bac Ninh	58.06	6.19	6.21	5.37	4.68	8.35	6.62	2.39	7.53
Hai Duong	45.79	4.50	5.26	4.18	5.39	6.18	6.62	2.93	3.39
Nam Dinh	45.97	5.82	4.23	4.19	5.85	7.41	2.77	2.56	1.60
Thanh Hoa	49.29	4.86	5.05	4.54	5.27	7.06	4.17	4.30	3.65
Nghe An	59.56	7.15	4.18	5.55	6.01	6.52	5.82	5.82	5.61
Ha Tinh	51.67	4.66	6.09	4.52	5.90	5.80	5.60	5.06	4.62
Thua Thien Hue	56.77	6.31	5.56	4.49	5.15	6.48	5.52	6.93	5.07
Da Nang	70.67	8.77	6.90	6.72	5.26	8.24	6.35	7.54	7.18
Quang Nam	59.72	6.23	6.22	4.65	5.92	5.23	8.00	7.03	7.01
Quang Ngai	47.99	5.27	5.32	3.85	5.33	5.65	5.67	3.96	4.13
Binh Dinh	60.60	5.50	6.40	6.04	5.85	5.92	7.05	5.45	7.11
Khanh Hoa	54.08	6.22	6.05	3.33	5.85	5.46	6.30	5.09	5.62
Ho Chi Minh city	59.61	6.23	8.32	5.57	6.28	6.56	4.55	4.99	6.11
Binh Duong	76.82	7.65	7.88	6.05	8.53	6.29	7.39	6.92	9.30
Dong Nai	64.14	6.52	6.42	5.19	6.30	7.88	5.30	4.58	7.74
Ba Ria-Vung Tau	59.15	5.33	7.06	4.69	5.80	6.43	6.54	5.93	6.54
Long An	58.49	7.24	6.37	3.51	6.22	6.23	5.34	5.17	5.89
Dong Thap	58.65	6.27	6.76	4.72	6.29	5.60	6.01	4.53	5.91
An Giang	50.90	6.36	7.07	4.10	4.75	4.64	7.96	4.18	5.61
Tien Giang	55.89	6.40	6.71	3.23	6.19	6.58	8.27	3.72	5.51
Can Tho	61.29	6.13	6.01	5.15	5.40	6.75	5.97	8.14	5.62

## Appendix B. Provincial governance indices

See Table B1.

### References

- Ades, A., Di Tella, R., 1999. Rents, competition, and corruption. *American Economic Review* 89, 982–993.
- Ahlin, C., Pang, J., 2008. Are financial development and corruption control substitutes in promoting growth? *Journal of Development Economics* 86, 414–433.
- Aidt, T., 2003. Economic analysis of corruption: a survey. *Economic Journal* 113, 632–652.
- Allen, F., Chakrabarti, R., De, S., Qian, J., Qian, M., 2007. Financing Firms in India. SSRN Working Paper.
- Ang, J.S., 1992. On the theory of finance for privately held firms. *Journal of Small Business Finance* 1, 185–203.
- ANU (Australian National University, Asia Pacific School of Economics and Management), CIEM (Central Institute for Economic Management), 2002. Private Enterprise Development in Vietnam. International Finance Corporation (IFC), Washington, DC.
- Ayyagari, M., Demirgüç-Kunt, A., Maksimovic, V., 2010. Formal versus informal finance. Evidence from China. *Review of Financial Studies* 23, 3048–3097.
- Bardhan, P., 1997. Corruption and development: a review of the issues. *Journal of Economic Literature* 35, 1320–1346.
- Berger, A., Udell, G., 1998. The economics of small business finance. The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking and Finance* 22, 613–673.
- CIEM (Central Institute for Economic Management), 2005. Vietnam's Economy in 2004. Science and Techniques Publishing House, Hanoi.
- CIEM, 2006. Vietnam's Economy in 2005. Political Publishing House, Hanoi.
- CIEM, 2007. Vietnam's Economy in 2006. Financial Publishing House, Hanoi.
- Cuervo, A., Villalonga, B., 2000. Explaining the variance in the performance effects of privatization. *Academy of Management Review* 25, 581–590.
- Del Monte, A., Papagni, E., 2001. Public expenditure, corruption, and economic growth: the case of Italy. *European Journal of Political Economy* 17, 1–16.
- Del Monte, A., Papagni, E., 2007. The determinants of corruption in Italy: regional panel data analysis. *European Journal of Political Economy* 23, 379–396.
- Fisman, R., Svensson, J., 2007. Are corruption and taxation really harmful to growth? Firm level evidence. *Journal of Development Economics* 83, 63–75.
- Glaeser, E., Saks, R., 2006. Corruption in America. *Journal of Public Economics* 90, 1053–1072.
- Greene, W., 2010. Testing hypotheses about interaction terms in nonlinear models. *Economics Letters* 107, 291–296.
- Grossman, S.J., Hart, O.D., 1983. An analysis of the principal-agent problem. *Econometrica* 51, 7–46.
- GSO, 2002. Statistical Yearbook 2001. Statistics Publishing House, Hanoi.
- GSO (General Statistics Office), 2005. Statistical Yearbook 2004. Statistics Publishing House, Hanoi.
- Herzfeld, T., Weiss, C., 2003. Corruption and legal (in)effectiveness: An empirical investigation. *European Journal of Political Economy* 19, 621–632.
- Huntington, S.P., 1968. *Political Order in Changing Societies*. Yale University Press, New Haven, CT.
- Jain, A.K., 2001. Corruption: a review. *Journal of Economic Surveys* 15, 71–121.
- JBIC (Japan Bank for International Corporation), 2003. Soft Infrastructure Development for Better Financial Access of Small and Medium Enterprises in Vietnam. Policy Paper, Tokyo.
- Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3, 303–360.
- Leff, N., 1964. Economic development through bureaucratic corruption. *American Behavioral Scientist* 8, 8–14.
- Li, H., Xu, L.C., Zou, H., 2000. Corruption, income distribution, and growth. *Economics and Politics* 12, 155–182.
- Lui, F.T., 1985. An equilibrium queuing model of bribery. *Journal of Political Economy* 93, 760–781.
- Mauro, P., 1995. Corruption and growth. *Quarterly Journal of Economics* 110, 681–712.
- Méndez, F., Sepúlveda, F., 2006. Corruption, growth and political regimes: cross country evidence. *European Journal of Political Economy* 22, 82–98.
- Mo, P.H., 2001. Corruption and economic growth. *Journal of Comparative Economics* 29, 66–79.
- Murphy, K., Shleifer, A., Vishney, R., 1991. The allocation of talent: implications for growth. *Quarterly Journal of Economics* 106, 503–530.
- Nguyen, T.A., 2006. Fiscal risks from the perspective of state-owned enterprises in Vietnam. In: Paper Under Sponsorship of Ministry of Finance of Vietnam Presented in APEC Finance Ministers' Meeting, Hanoi.
- North, D.C., 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge University Press, Cambridge.
- Paldam, M., 2002. The cross-country pattern of corruption: economics, culture and the seesaw dynamics. *European Journal of Political Economy* 18, 215–240.
- Persson, T., Tabellini, G., Trebbi, F., 2003. Electoral rules and corruption. *Journal of the European Economic Association* 4, 958–989.
- Rand, J., Tarp, F., 2010. Firm-Level Corruption in Vietnam. Working Paper, United Nations University.
- Romer, P., 1994. New goods, old theory, and the welfare costs of trade restrictions. *Journal of Development Economics* 43, 5–38.
- Shleifer, A., Vishney, R., 1993. Corruption. *Quarterly Journal of Economics* 108, 599–617.
- Svensson, J., 2003. Who must pay bribes and how much? Evidence from a cross section of firms. *Quarterly Journal of Economics* 118, 207–230.
- Tenev, S., Carlier, A., Chaudry, O., Nguyen, Q.T., 2003. Informality and the Playing Field in Vietnam's Business Sector. IFC, World Bank and MPDF, Washington, DC.
- TI (Transparency International), 2007. *Global Corruption Report 2007*. Cambridge University Press, Cambridge.
- Treisman, D., 2000. The causes of corruption: a cross-national study. *Journal of Public Economics* 76, 399–457.
- United Nations, 2010. Secretary-General Ban Ki-moon's message for International Anti-Corruption Day, to be Observed on 9 December. <<http://www.un.org/News/Press/docs/2010/sgsm13292.doc.htm>> (accessed 12.02.12).