BRIBE & UNCERTAINTY IN INDONESIA SOME EVIDENCES FROM MICRO DATA ON CORRUPTION

Ari Kuncoro

1. INTRODUCTION

The word of corruption has been used in many different means and connotations. In the economic context however, it refers mainly to the use of public use for private gain (Shleifer, A., and R.W. Vishny, 1993). Even with this 'narrow' definition ambiguities still persist. The distinction between political and economic corruption can still be blurred. In particular, whether striving for private gains also include policies purposively designed to increase the chances to stay in offices (Bardhan, 1997). Given its definitional ambiguities and illusive nature, for economists the challenging task is to predict the economic impact of corruption, if not to measure it. Here also, the debates have not been settled.

One view suggests that in the prevalence of pervasive and cumbersome regulations, corruption is efficiency enhancing and may help growth. In this regard Huntington (1968) for example asserted that excessive taxes and regulation would remain excessive without bribery, so bribery had in effect acted like deregulation. Lui (1985) in support of this view showed that in a queuing model, corruption could be growth enhancing. In this model the different of the size of bribes by different firms

may reflect their different opportunity cost with respect to bureaucratic delay, so buying lower red tapes could increase efficiency. The Lui's model signifies the speed or grease money argument in which corruption may improve welfare even if some resources have to be spent in such activities. In line with this argument, Bardhan (1997) pointed out that as part of Coasean bargaining problem, the corrupt bureaucrats could award the contract to the highest bidder in bribes. Since only the most cost efficient firm has the ability to pay the largest bribe, an efficient outcome could still be reached.

A complication arises if the bureaucrat considers other factors beside the bribe size, for example nepotism, or in the case where the briber is allowed to supply a low quality good at a high quality price and allowing unqualified applicants with a high willingness to play or in the case when bribery is used to limit the competition. These are the main arguments rejecting the notion that corruption could be efficiency enhancing (for example Susan Rose-Ackerman (1974, 1978 and 1996), Bliss and Di Tella (1997) and Kaufman and Wei (1999). Another crucial argument forwarded by this strand of view is that because the bureaucrats have discretionary power with given regulation – so in effect regulatory burden or regulation may be designed purposely by governments to extract rents, which can be used by officials for various purposes including for personal benefit. In support of this view, Kaufman and Wei (1999) showed that since officials have monopoly power over regulation they could customize the nature and amount of bureaucratic harassment or red tapes on firms to extract maximum bribe possible. In other words, the corruption is not exogenous to the system. For example, corruption can be caused and preserved by a patron-client political system where built-in corrupt practices have been present for the extended period of time.

Another important aspect of corruption that works against economic efficiency is its secretive nature. Unlike taxation, corruption is illegal, avoiding detection and punishment makes corruption less efficient than taxation (Shleifer and Vishny, 1993). Bribe as a form of a contract cannot be reinforced in courts, and thus creates the opportunity for bribe-takers to renege or to demand higher bribe from buyers. Off-course some officials may have to worry about reputation problem but for many this 'rationality' is a rarity.

Moving from the conceptual debates, economists have been trying to establish some sort of common comparative measurement. Due to its secretive nature, the corruption data are often derived from the perception of businessmen. Certainly it has drawback, in particular perception indices raise concerns about biases. Most empirical works examining the determinants of economic growth employed the framework proposed by Barro in1991 to investigate the determinants of economic growth. One early study of the relationship between economic growth and corruption was by Mauro

(1995). Employing Business International (BI) data for 70 countries for the period 1980-83, he found a significant negative relationship between corruption and the average annual economic growth rate over the 1960-85 period and also between corruption and the investment-GDP ratio for 1960-85 and for 1980-85 as well. Using the same framework as Mauro (1995), Rahman et al., (2000) investigated the effect corruption on the Bangladesh economic growth. Using the estimated equation, counter-factual simulation exercises were conducted to examine the extent of which Bangladesh had to reduce the level corruption in order to achieve a certain level of economic growth comparable to some selected countries. The finding suggested that curtailing corruption would attract more investment, domestic and foreign alike, and thus would accelerate economic growth.

2. CORRUPTION AND UNCERTAINTY

Despite the apparent negative relationship between economic growth and corruption, many questions and puzzles remain. Perhaps, the most interesting case is Indonesia under the Suharto's regime where high corruption was apparently compatible with very high growth, while in most other corrupt countries this has not been the case. Corruption in Indonesia seemed to inflict very little cost to the economic development. It seems that different kinds of corruption have different impact on efficiency. There are certainly explanations from the point of view of sociology and political science, but few are rooted in the economic theory, among them Shleifer and Vishny (1993). Using an elementary model of industrial organization they attempted to sort out the consequences of corruption in different countries, different places and also different regimes in the same country.

Shleifer and Vishny compared a case of independent monopolies where at least two government agencies act independently, each provides one good that is complementary to each other (business and building permits for example), with a case where those two agencies are joint-profit maximizer. In the case of independent monopolies, as in the Cournot model, each agency will perceive the other agency's sales as given. As a result, the bribe-inclusive price is set such that the marginal revenue is equal to the marginal cost. In this setting, the bribe per unit of sale is the difference between the official price of permit supplied and the agencies' marginal costs (both are assumed the same). In the case of joint monopoly, each agency takes into account the effect of an extra unit sold on the sales of the complementary permit, and in so doing the revenue form the other source as well. In this situation the marginal revenue in the supply of each permit is less than marginal cost. The conclusion is unmistakable, that per unit bribe is higher and the supply of each permit is lower in the independent monopolist setting than in the case of joint monopolists. The total bribe revenue is

larger in the joint monopolists but the permit buyers receive a larger supply of both permits.

Shleifer and Vishny (1993) used the change from the communist Russia to the post-communist government to illustrate the prediction of this model. The communist party centralized the collection of bribes and established the mechanism to check any deviations from the agreed pattern of corruption. The buyer of government goods (permits) was guaranteed to buy the whole package and not to face any more requests for bribe from various parts of the bureaucracy. Similarly, in Korea the bribes are mostly in the form of lump-sum contributions by the major business leaders to the president's campaign fund, rather than taxing on economic activities. On the other hand, there are some extreme cases such as in India, in post-Communist Rusia and some African countries where different ministries, agencies and different levels of local government all set the bribe rates independently to maximize their own revenues, rather than combined revenue of all bribe takers.

In the Suharto's era the nature of corruption in Indonesia was somewhat similar to the Communist Russia and Korean cases. By that time Indonesia and India were about equally corrupt. The apparent better economic performance for Indonesia might be attributed to the fact that the Indonesian corruption was more centralized, and thus was more predictable. The corruption was controlled by the first family and the top military leadership with partnership with the ethnic Chinese conglomerates (Bardhan, 1997). The reduction of much of uncertainty due to the political stability was also confirmed by McLeod (2000). Although firms were reported to complain about corruption and bureaucratic harassment, most costs associated with corruption and bureaucratic red tape could be predicted and calculated as part of transaction costs. At the national level, the involvement of Soeharto's children in many private businesses was also regarded as efforts on the part of entrepreneurs to reduce business certainties that might come from the harassment of lower level bureaucrats. This pattern was often repeated in provinces where families of prominent figures such as governors and local military commanders were asked by businessmen to join business ventures as protection against harassments from lower level bureaucrats.

The post-Suharto era in Indonesia has resulted in a different nature of corruption. The era of the centralized political systems has gone now, replaced by the system where power and authority are more diffused. It is not too surprising that if the nature centralized corruption - one stop shopping – is also gone, replaced by a more fragmented bribe collection system where central government officials, ministry officials, local government officials and others, like military/police and legislative members both at the national and local levels are demanding bribes. The failure of these agents to

coordinate their bribe-taking behaviors will likely result in higher kevel of bribes in the new equilibrium, just as predicted by the model. In essence, the number of bribe takers may have increased and the corruption may be more detrimental now to the economic efficiency than in the Suharto's era.

While in other countries decentralization may have nothing to do with corrupt behavior, in Indonesia, already burdened with the corruption problem in the Suharto's era, it only makes the fragmentation of the bribe collection system much worse. The complaints from the Indonesian chamber of commerce (KADIN) on the rise of corruption at the local government level, immediately after the enactment of the Law of decentralization in 2001, come from the fact that a lot of new local regulations especially on taxes, levies and various type of permits are created designed to create artificial complementary regulations. For illustration if in the past a business permit and a commercial driving license were enough to ship goods from one district to another, now a special pass is needed from the district's revenue office because some goods are subject to taxation.

The list of new complementary permits can go on and on as corruption opportunities stimulate the entry of other permit issuers armed with new regulations. This phenomenon is called overgrazing the commons, in which officials from all levels of government (national and local), different ministries and agencies prey on the same economic activities (Treisman, 1999). To summarize, although there are other important non-economic factors also play in the equation, the fragmentation of the bribe collection system, the creation of artificial complementary regulations to extract bribes and the free entry of new corrupt agencies in the post-Suharto Indonesia, provide some important clues, why the corruption in the Suharto's New Order seemed to exert no negative influence to economic growth in that era.

3. BRIBE AND UNCERTAINTY: A THEORETICAL MODEL

3.1 Firm

A simple theoretical model of bribery is developed based on the adaptation of Henderson and Kuncoro (2004). A firm is assumed to bribe local officials in order to reduce all kind of government burdens like tax liability and regulatory burdens associated with regulations such as the total number of permits required to operate businesses, the published fire safety standard or the stated number of days that a given license application can take and the like. If a firm negotiates the effective burden will be:

(1) $$g = H - f(b,t)$$

In (1), H is the full regulatory burden, b is bribe expenses and t is time spent with officials. The function f(b,t) actually represents how much actually the burden H will be

reduced that also captures the negotiation technology. We assume that the bribe negotiation technology exhibits the characteristics of $f_b>0$, $f_t>0$, $f_{bb}<0$, $f_{tt}<0$. For officials to agree with the proposal, they also want share of the total gains f(.).The amount of f(.) will be distributed between firm and officials. How much a firm eventually would get, will depend on the bargaining strength of each party. Let θ^f be a uniformly distributed between 0 and 1 representing the firm's bargaining power then the net gain for a firm is given by,

(2)

where $q^f + q^g = 1$, and q^g representing the government bargaining power. For a firm the outcomes of negotiation are uncertain such that,

(3) $$\theta^f = E\theta^f + \nu$$

where Eq^f is the average probability to obtain dispensation f(.) which is known to a firm, but the final outcome of bargaining remains uncertain since n is a random variable with zero mean and variance σ^2, which follows a normal distribution or $n \sim N(0,\sigma^2)$. The random variable n captures the uncertainty of bribe because the promised services are not necessarily delivered after the bribe is paid for example because discretion of officials, too many people/agencies to bribed and so on. For a firm, as long as the net reduced burdens still exceed the bribe payment, it will proceed with the bribing. Paying bribe is worthwhile for a firm if $Eq^f f(b.t)>b$. In the meantime the official will keep the amount of $\theta^g f(.)+b)$.

A firm is assumed to choose b and t to maximize the utility of the net gain,

(4) $$V = V(\theta^f f(b,t) - H - b)$$

Since the outcome V is a function of only a single random variable θ^f, we can rewrite the problem as a utility maximization with the mean-standard deviation approach (Meyer [1987]). With this approach a firm chooses b and t to maximize a function of expected outcome and the standard deviation (or variance) of the outcome V only. The above function can be written as

(5) $$V = V(Y,\Sigma)$$

where $Y = \theta^f f(b,t) - H - b$, and $S = \sigma f(b,t)$ Since a firm is risk-averse, V(Y,S) is increasing in Y, $V_y>0$ and $V_S<0$. In addition we assume that $V_{yy}<0$ and $V_{SS}<0$. The first order conditions of the utility maximization is given by,

(6a) $$V_Y E\theta^f f_b + V_\Sigma \lambda f_b - 1 = 0$$

(6b) $$V_Y E\vartheta^f f_t + V_\Sigma \lambda f_t = 0$$

Our previous assumptions on V(.) and f(b,t) ensure the utility function of (4) is well behaved, so (6a) and (6b) can then be solved for the bribes and time functions,

(7a) $$b = b(H, E\theta^f, \lambda)$$

(7b) $$t = b(H, E\theta^f, \lambda)$$

Proposition 1: *Paying bribes will improve the utility V if the marginal increase of outcomes* $V_Y E_s^f$ *is greater than the marginal decrease of utility* $V_S l$ *associated with the uncertainty of negotiation.*

Proof 1: It is straightforward to show that from (6a) V is increasing in outcomes, Y, and decreasing in S, while both E_s^f and l are positive. So if the average probability of successful negotiation is sufficiently higher than the risk (l), then the result will be established.

In other words, the average probability of getting dispensation must be attractive enough compared to the risk of non-delivery, before a firm decides to enter negotiation to reduce burden. If the probability of success is close to zero then there is no point for a firm to waste money and time to negotiate, since certainly it would be failed, so the only option is to accept the full burden of regulations, H, or to quit the business.

To examine how bribes are affected by government-related burdens, time spent and bribe uncertainty, ignoring the effect of •on Y, we totally differentiate (6a) with respect to b, H, t,l to obtain,

(8) $$db = \frac{a_1}{z} dH + \frac{a_2}{z} dt + \frac{a_3}{z} d\lambda$$

where z is given by,

(9) $$z = -V_y E\theta^f f_{bb} - V_{YY}(E\theta^f)^2 (f_b)^2 - V_\Sigma \lambda f_{bb} - V_{\Sigma\Sigma}\lambda^2 (f_b)^2$$

Equation (5) explains how the bribes change (db), due to the changes in regulatory burden (dH). It is straightforward to show that if proposition 1 holds and our assumptions of V(.) and f(b,t) are fulfilled then z will be positive.

Proposition 2: *An increase in regulation burden H will require a firm to pay higher bribes.*

Proof 2: if proposition 1 holds then the coefficient z will be positive, what we need to do is to show that the coefficient a_1 is positive as well. The coefficient a_1 is given by,

(10) $$a_1 = -V_{YY} E\theta^f f_b - V_{\Sigma\Sigma}\lambda f_b$$

Since V_{YY}, $V_{SS}<0$ and E_s^f, $f_b>0$, then a_1 is positive. In the case of tax liability, higher tax payment would induce firm to spent more money on bribes to lower it.

Proposition 3: *Time delay is positively related to bribes as long as it is still for a firm beneficial to enter negotiation.*

Proof 3: if proposition 1 holds then a firm would enter negotiation which means z is positive. So we need to show under what condition the coefficient a_2 is positive. The coefficient a_2 is given by,

(11) $$a_2 = V_Y E\theta^f f_{bt} + V_{YY}(E\theta^f)^2 f_b f_t + V_\Sigma \lambda f_{bt} + V_{\Sigma\Sigma}\lambda^2 f_b f_t$$

A positive coefficient for a_2 requires that

(12) $$\frac{(V_Y E\theta^f + V_\Sigma \lambda) f_{bt}}{f_b f_t} > -(V_{YY}(E\theta^f)^2 + V_{\Sigma\Sigma}\lambda^2)$$

Our assumptions on V(.) ensures that the LHS of the above inequality is positive, so to establish the proposition we need to ensure that the RHS is positive and also larger. If the proposition 1 holds then the term ($V_y E_s^f + V_S l$) is positive. Since f_b and f_t are both

positive then we need f_{bt} to be positive (b and t are complement) and sufficiently large. This means b and t have to be strong complement.

The notion that the average probability of success must be high enough compared to the risk of rejection - to attract a firm into a negotiation - suggests an interesting implication for corrupt officials. The average success probability and bribe uncertainty (l) is interrelated, higher uncertainty means lower probability of success. If there are too many agents with veto power then the bribe system is highly uncertain - a firm will stay away from a negotiation – preferring to accept the full regulation burden H or quitting the business. This means corrupt officials will lose potential bribe incomes. So in effect, this puts some degree of rationality on officials' behavior by imposing some restraint on the temptation to make bribes highly uncertain, with the presumption that it would result in higher bribes, which in fact is not.

Proposition 4: *An increase in bribe uncertainty will induce a firm to pay lower bribes.*

Proof 4: By proposition 1 the coefficient z is positive so we need to show that a_3 is negative. The coefficient of a_3 is given by,

(13) $$a_3 = V_{\Sigma} f_b + V_{\Sigma\Sigma} \lambda^2 (f_b)^2$$

Since $V_{..}$, $V_{..} < 0$, the coefficient a_3 is unambiguously negative. In the extreme case if the probability of success is close to zero then b will be close to zero as well since a firm will not bet any sum of money for something that will be lost for certain.

3.2. Local Government

A local government maximizes the revenue both from legal (taxation and levies) and not so illegal sources (bribery),

(14) $$R = N(H,b)(H + b + \theta^g f(b,t))$$

where N is the number of firms resided in a particular district. It is assumed that $N_H < 0$, so firms will run away from the district if H increases. High bribes would also tend to drive away firms from the district. In this case the additional incomes from bribe and the shared net gain (g) will be lost. This serves as a threat point for officials, as not to be excessive in charging bribes. This implies $N_b < 0$ and $N_{bb} < 0$. The officials do not choose θ^g, rather this is influenced by the officials characteristics like education. But if the officials are too shortsighted then θ^g will be very close to one, and a firm will get almost nothing from bribery so in this case it will stay away from negotiation or simply just leaving the district. The local government problem is to choose H, b and t to maximize (14),

The first order condition is given by,

(15a) $$N_b(H + b + \theta^g f(.)) + N(1 + \theta^g f_b) = 0$$

(15b) $$N\theta^g f_t = 0$$

(15c) $$N_b(H + b + \theta^g f(.)) + N(.) = 0$$

which can be solved for,

(16a) $b = b(\theta^g, N)$

(16b) $t = b(\theta^g, N)$

(16c) $H = b(\theta^g, N)$

Intersecting (16a) and (7a) we can estimate how the equilibrium of bribes change because the changes in H, γ^g, E_γ^f, », and N. The officials' bargaining parameter γ^g is influenced by the size of local bureaucracy. The firm's bargaining parameter E_γ^f is unobserved but it is affected by firm's characteristic such as size, export-orientation, ownership, and location, so we can substitute in these variables. In the empirical exercises we estimate the equilibrium condition of bribes formed from the semi-reduced form of (7a) and (16a), where time t is included as explanatory variable in the form.[2]

(17) $b = b(t, H, E\theta^f, \lambda, N)$

4. DATA

The primary concern in the study of corruption is how to get reliable data. For this purpose LPEM-FEUI launched two CODB (Cost of Doing Business) surveys at the end of 2001 and 2003. Unlike many empirical studies of corruption that rely on perceptions of the extent of corruption itself within a country or region, this study attempts to measure corruption at the firm level by asking managers the amount of bribes paid annually as a percentage of production cost. Even with a carefully designed question set there is a chance that respondents would refuse to answer such a question—or to answer it honestly—and the strategy for collecting information on bribe payments was designed with this in mind.

We employ both data sets to examine the extent of corruption at district level in 2001 and 2003, to assess the business climate after the laws of decentralization went into effect in January 2001. Unfortunately we have no data on corrupt behavior of local bureaucrats before these laws went into effect, which could be used to measure changes in firms' response to any consequent changes in bureaucrats' behavior in the new government structure setting. Instead we attempt to obtain two snapshots of the post-decentralization determinants of bribery, controlling for firm, location and industry characteristics. The important difference between the 2001 and 2003 CODB surveys is that the latter focused exclusively on the producers and distributors of necessity goods. Also, geographically the 2003 survey only covers 13 districts - 11 in Java and 2 Sumatera, compared to 64 districts in 2001.

[2] We experimented with various measure of the location size effect N, like number of firms, employment in manufacturing, but none of them is significant. Therefore, in the estimation this variable is dropped.

Of 1808 firms interviewed, 1333 respondents said they had paid bribes in 2001, while the rest claimed not to have done so. The simple bribe mean *for those firms reporting paying bribes* was 10.8% of annual production costs. We looked at several characteristics of firms in order to obtain initial insights into the bribery process that might guide the formulation of hypotheses advanced in the modelling section (**Table 1**). It was observed that bribe rates appeared to increase with size, but then decrease. Small firms pay bribes less than smaller-medium firms (10.4% versus 11.6%), larger-medium firms pay less (9.6%), and large firms pay the lowest rates of all (8.2%) (see table 1 for size category definitions). Table 1 also reveals that manufacturing firms tend to pay lower bribe rates (9.3%) than service firms (11.3%), while agribusiness is in the middle (10.3%). Urban-based firms appear to pay somewhat higher bribe rates than those in non-urban areas (11.8% and 10.3%, respectively). Exporters pay slightly smaller bribe rates than non-exporters (9.7% versus 10.4%), and foreign firms pay higher rates (12%) than those domestically owned (10.2%).

Table 2 summarizes the descriptive statistic across several firm characteristics. The overall bribe mean in 2003 is 4.1%, while in 2001 it is 10.8 %. Due to the difference in sample coverage, any statistical means from these data sets may not directly comparable. It is possible that some forces of competition among districts to attract firms by offering low taxes and bribes are already at play. But this notion needs to be examined thoroughly using a tax competition model, which is beyond the scope of this paper. The patterns of bribes across firm characteristics very much resemble the 2001 survey, although they are approximately only half of the figures in 2001.

5. EMPIRICAL INVESTIGATION

To ascertain the empirical relationship between bribes, tax liability, time spent with officials and regulatory burden, a bribe function based on equation (7a) and equation (6a) is estimated econometrically,

(17) $$B = a + \mathbf{b}.\mathbf{X} + \mathbf{c}.\mathbf{Y} + \mathbf{d}.\mathbf{Z} + u$$

where B is the level of bribe payments, $\mathbf{X}$ is a vector of 'government variables' that influence the relationship between firms and government officials, $\mathbf{Y}$ is a vector of 'firm variables', $\mathbf{Z}$ is a vector of 'district variables', u is the error term, and a, $\mathbf{b}$, $\mathbf{c}$ and $\mathbf{d}$ are parameters to be estimated. The inclusion of several firm characteristics as explanatory variables is to capture the firm's bargaining parameter. How some of these variables affect bribe rates can be hypothesized *a priori* with the help of the theoretical model, but for others the sign of the coefficients will have to be determined empirically. In equation (17) the dependent variable is the *bribe rate* (bribe payments as a percentage of production

costs). The definitions of the government-related, firm-related, and district-related variables hypothesized to determine the bribe rate are as follows:

Government-related variables

The first four explanatory variables in (6)—*tax payments, time spent and regulatory burden, and bribe uncertainty*—reflect government-related aspects of the environment faced by firms.

Tax payments. Corruption or bribe-taking activity appears not only in relation to regulatory matters, but also in relation to tax assessment: specifically, bribes are solicited or paid in order to obtain more favorable tax assessments. As predicted in the theoretical model, the higher is the burden (formal tax liability), the more vulnerable is the firm to a bribe demand (or the more susceptible is the tax official to a bribe offer), so we hypothesize that firms liable to pay large amounts of tax can be expected to pay relatively large bribes in order to avoid doing so; tax paid (as a percentage of total annual costs) is taken to be a proxy for the formal tax liability.[3]

Regulatory burden. The number of operational licenses required for normal business operation, measures regulatory burden faced by a firm.[4]

Time spent. The time spent variable captures the proportion of their time firms' managers need to spend negotiating with officials to reduce regulatory delays in relation to requirements for business permits, fire safety measures, environment safety standards as well as lobbying for lower tax payment. Unlike nominal regulatory burdens, this has more to do with time delays rather than the number of regulations per se. Bureaucrat has discretion over the actual implementation of a given regulation, so in effect red tape or bureaucratic delays can be customized to prolong negotiation – purposely to extract more bribes from firms.[5]

Bribe Uncertainty. Respondents were asked to assess the degree of predictability of bribe payment, on a six-point scale of responses ranging from 'very predictable' (= 1) to 'very unpredictable' (= 6). An inverse relationship between bribe uncertainty and bribes reflect that a firm is risk-averse. They will not bet money something that is highly uncertain. It is argued that this variable reflects the degree of fragmentation of the bribe collection system in the district. If there are multiple regulatory agencies with overlapping veto power in the regulatory process, this implies both a need to pay a greater number—and

[3] Tax offices located in the districts and municipalities are not part of local government, but rather, part of the central government machinery for collecting the central government tax such as corporate income tax. This has important implications for anti-corruption efforts at the district level.

[4] Kaufmann and Wei (1999) termed this as nominal harassment

[5] In Kaufmann and Wei (1999), this is regarded as effective harassment.

larger total amount—of bribes, and a lower degree of confidence that bribes can buy complete protection from further bureaucratic predation.

Local Government Attitude toward Business Sector. The greater freedom from central control as a consequence of decentralization has greatly weakened an important constraint on this type of government behavior at local level. It is worth noting that local government officials are still overwhelmed by decentralization euphoria. At the same time, at least some of their officials are presumably well aware of the scope for increasing their personal incomes in the form of bribes from customizing regulations or from businesses desirous of avoiding regulation burdens. In effect here we attempt to measure the local government bargaining parameter è ^{g}. To accomplish this we use the subjective measure of local government general attitude toward business sector obtained from firms' responses. Firms were asked about how helpful the local government in facilitating their businesses. The responses range from 1=very unhelpful to 6=very helpful. We hypothesize that the more helpful is the local government the less is the bribes.

Firm-related variables

Location. We include a dummy variable to distinguish firms in urban areas (***kota***) from those in non-urban areas (***kabupaten***), given that the data presented in tables 2a and 2b suggest rather lower bribe rates in non-urban areas. It is hard to imagine why bribe rates should differ by location, however, and the observed differences in these tables may simply be masking the effect of differences in size or sector representation between urban and non-urban are.

Sector. Anecdotal evidence suggests that officials prefer to prey on hotels and restaurants (i.e. service sector firms) rather than manufacturing and agribusiness firms. Industry sector dummy variables are included to distinguish manufacturing and services firms, while agribusiness is the reference case.

Foreign Ownership. Foreign firms may be less likely to pay bribes because of restrictions imposed by their headquarters. For example, the US and some countries in the EU have laws that explicitly forbid firms to bribe foreign government officials.[6] On the other hand, foreign ownership may make a firm more vulnerable to bureaucratic predation, and for this reason foreign firms typically have domestic partners chosen for their ability to ward off such predation. They will be more vulnerable, but the cost may take the form of a stream of dividends to the domestic partner, rather than bribes paid direct to corrupt officials. Foreign ownership is measured by a dummy variable, having the value 1 for foreign firms and 0 otherwise.

[6] United States' Foreign Corrupt Practice Act (1997); OECD convention on Combating Bribery of Foreign Public Officials in International Business Transactions (1999).

Export Orientation. It is difficult to speculate on the relationship between export orientation and the payment of bribes. If exporting firms locate in export-processing zones where there are fewer formal requirements for permits of all kinds, they may be protected from the necessity of paying bribes. Firms' export orientation is represented by a dummy variable, taking the value 1 for exporters, and 0 otherwise. In turn, a firm is classified as an exporter if it exports at least 5% of its output.

Size. Since harassment also takes up government officials' time, they may focus on bigger firms to get bigger returns on their 'investment'. On the other hand, officials may be content to accept lower bribe rates from large firms, given that these will translate into larger absolute amounts of bribe income. Moreover, they may be reluctant to try to extract bribes from large firms because of their protective connections to higher-ranking local or national officials. Size is indicated here by firms' annual sales in the previous year. Three dummy variables are created to represent smaller-medium, larger-medium and large categories, while the small category is used as the reference case.[7]

Results

• Bribes in Normal Business Operation

The empirical results are shown in **Table 3** and **4**. **Table 3** presents the result for bribes in a normal daily operation, while table 4 is bribes for the setting up of a new business.

In **Table 3**, the coefficient of the *tax payments* variable is positive and has the highest significance at the 5% level for all specifications in the 2001 and 2003 surveys. This result is somewhat difficult to interpret: on the surface, it seems that higher tax payments go hand in hand with larger bribes, whereas the purpose of paying bribes is (in part) to reduce the firm's tax assessment. The explanation for this result is presumably that firms' true tax liabilities differ considerably as a percentage of production costs, and that those for which this liability is relatively high have to pay relatively large bribes to have their actual tax assessments reduced by any given proportion. In other words, firms that pay large bribes may also pay large amounts in tax, yet may also benefit from relatively large corrupt reductions in their assessed tax liabilities.

The coefficient for the *time-spent* variable is also positive and significant at the 5% level in both years. This suggests that firms' efforts in terms of the time for negotiation go hand in hand with the increase of their bribe payments to reduce the cost of delay: refusal would mean that potential profits could not be fully realized. From the point of view of government officials the implication is that that there is a positive payoff in

[7] At the beginning of the survey respondents were asked the monetary value of annual sales, but the response rate was very low. It was therefore decided subsequently to ask respondents only to place their firms within one of these four size categories.

terms of bribe income from increasing the volume of red tape that hinders firms' operations, and thus suggests that there is some degree of customization of harassment by officials.

The coefficient for *regulatory burden* is positive and significant only in the 2001 sample, but statistically speaking it is weaker than the time-spent variable. Customizing time delay to extract bribes is perhaps easier to do than compromising the regulations, since due to its relative secrecy corrupt officials in effect could apply the principle of price discrimination to firms' willingness to pay bribes, and thus extracting more firms' surpluses. For corrupt officials, reducing regulation burdens is perhaps harder to conceal - it runs the risk of revealing the true value of regulatory permit goods to other firms - which would drive the price down. Also, it would invite unnecessary attention from other officials competing for the same bribes. For this reason, customizing time delay is perhaps more important as a source of bribes incomes than bending the regulatory burdens.

The *bribe uncertainty* variable coefficient has the wrong sign (positive) but significant for the 2001 sample. While the coefficient for the 2003 sample agrees with the model prediction that an increase in uncertainty would reduce a firm's desire to bribe. The result may suggest that the fragmentation on bribes is far more severe in latter years. After the implementation of decentralization laws in 2001 firms found that the efficacy of bribe system fell significantly because more and more people need to be bribed. First, firms might try to compensate lower bribe efficacy by increasing the amount of bribes, which produces a positive coefficient but soon they realized that they were betting money for outcomes that was increasingly uncertain – paying bribes would not always result in dispensation or reduction in regulation burdens. So the later coefficient is negative. The outcomes of bribes might be highly uncertain presumably because so many officials with veto power involved in negotiation - or the officials are really greedy – thinking that they can extract more money by making the bribe collection system is even more uncertain. So, firms might to choose to underground, for example operating without license and at the same time avoiding increasingly unreliable and fragmented bribe collection system. This agrees with the prediction of the model - that if the uncertainty is too high it would deter a firm from negotiating its bribe offer to the official.

The coefficient the *government attitude* toward business sector is negative and significant at the 5% level in 2001 and but insignificant in 2003, suggesting that initially there were districts that more friendly toward business sector and charge somewhat lower bribes, but later on they were indifferent. It is also possible however that our geographical coverage in 2003 is too small to allow greater inter-district variations. Clever

officials may acknowledge that firm survival depends on whether the amount of bribes to be charged is reasonable. Officials that are demanding relatively small bribes can expect to have more firms to live or to locate in their jurisdiction. Officials that take a long-term view of their income from bribery may realize that it is in their own interests not to impose excessive costs on firms over which they exercise regulatory authority: if such firms go out of business, or relocate, the income source will be lost and effort will need to be expended to replace it. While those less capable of minimizing bribe payments are more likely to see their tax bases eroded.

The coefficients of the firm *size* dummy variables in the 2001 suggest some degree of non-linearity in the bribe function. For smaller-medium firms the coefficient is insignificant in all model specifications, but the coefficients for larger-medium and large firms are negative and significant at the 5% significance level, suggesting that bribe rates decline with increasing firm size. It may be the case that preying on small firms is not worth the effort for corrupt officials, while at the other end of the size spectrum larger firms may be better placed to resist bureaucratic extortion because of their importance to the local economy and the possibility that they have strong political connections with high ranking officials. The coefficients are insignificant in 2003 indicating that officials presumably because of competition among themselves would prey on any firms regardless of size.

The coefficients of the industry *sector* dummies both in 2001 and 2003 suggest that firms in the service sector pay more in bribes than those in manufacturing and agribusiness. This result conform table 1, which suggests that service firms tend to pay more in bribes. A representative of the Indonesian Hotels and Restaurants Association (PHRI) suggested that these kinds of businesses obtain most of their revenue in cash on a daily basis, making them easier targets for petty extortion by officials than manufacturing and agribusiness firms that receive payments for sales less frequently, and often not in the form of cash. It is also possible that industry associations might exert some influence in protecting their members from predatory officials, and that the effectiveness of such associations differs between sectors.

The coefficient of the *urban* location dummy is insignificant in 2001, but it is negative and significant in 2003. The negative coefficient points out that non-urban firm may have to pay higher bribes presumably for inter-district road levies which have been reappearing with a vengeance after their long dormant. Locating in urban areas with ports also may save money since they do not have to travel inter-districts roads all the way to markets.

We had hypothesized that *export-oriented* firms may enjoy some protection from bureaucratic extortion by locating inside industrial or export processing export zones.

The coefficient of the dummy variable for exporting firms actually turns out to be positive, however, although it is not significantly different from zero. A better test of this hypothesis would need to distinguish firms located in such zones; many exporters in our sample were located outside.

The coefficient of the dummy variable for *foreign ownership* is also insignificant, suggesting that there is no difference in bribery rates between foreign firms and their domestic counterparts once other determinants are taken into account.

• Bribes to Set-up a New Business

The most important hurdle faced by new entrants is negotiation time or red tape (table 4). For both samples the coefficient for time is positive and strongly significant. Like in the case of bribes for day to day normal operation, red tape has been the most important tool to extract bribes compared to number of licenses. We observe the pattern of change between 2001 and 2003. It appears that the use of the license requirement to extract bribe has become less important in 2003, replaced by time delay or red tape. The coefficient of time delay becomes larger and stronger statistically in 2003, while at the same time the number of licenses is insignificant.

The bribe uncertainty is relatively unimportant in the 2001 sample, but it becomes very important in the mind of businessmen in 2003. Do we observe the worsening of investment climate? Macroeconomic indicators like export growth, the growth of FDI project and so on seem to point to this direction. The dummy for exporting firms is insignificant but definitely there is a change of behavior with respect to FDI firms. In 2001 FDI firms significantly pay lower bribes because political connection or 'protection' from domestic partners, but this is not the case in 2003 – the dummy for FDI is positive and significant at the 10% level, so officials started to look at FDI as potential prey more than in the past. Perhaps, in the context of more diffused political power, local officials are now not really afraid to ask higher bribes from FDI. In the past FDI firms paid dividend money to people in high places at the national or local level in exchange for protection from the harassment of lower level bureaucrats. Apparently, this strategy is no longer effective with the change of political climate in Indonesia. In 2003, the officials were also less discriminative in the sense that statistically there was no observed bribe differential between sectors and sizes, urban versus non-urban, exporters versus non-exporters.

6. FIRM SURVIVAL

The firm survival model estimated here is not truly the model where we observe ex-post death of firms. Rather, we asked firms to answer the questions with respect to the long-term survivability of their companies in the current location. There are two important questions: first is about the likelihood that they will go out business in the next five year, implicitly they are not going anywhere and choose to close down the business and second is about the likelihood to move to other locations.[8] For these two questions, the responses are from one= very unlikely to 6= very likely. In the estimation since the dependent variable are ordered responses from one to six, we employ the ordered Probit procedure.

Survival Prospect

As for explanatory variables, besides bribes and time spent we also have variables constructed from subjective responses to the following questions: problem in the local licensing system, too many new local taxes, local tax rates are too high, to many new local levies, local levy rates are too high, the continuous presence of other persons/ agencies to be bribed. To measure bribe uncertainty we use the responses from the question: "Although a firm has paid bribes, there is still a possibility that it has to pay money to other officials or to other divisions/departments." The responses for this question ranges from 1=never to 6=very often, so higher score points to higher uncertainty. The model is estimated by the ordered probit procedure. The result for the survival prospect is presented in **Table 5**, while the prospect of moving out to another location is shown in **Table 6**.

Column I in table 5, presents a regression where bribes and the problem in labor affairs are included. Bribes seem to have some greasing effects on firms - bribing to reduce regulation burdens increases the chance of survival. The coefficient of bribes in the first column is negative and significant, indicating that higher bribes lead to higher (subjective) prospect of survivability. In column II, the bribe variable is replaced by time spent with officials - the coefficient turns out to be very weak statistically. Spending time to lobby officials is not enough to guarantee survival – it must be accompanied by bribing. In column III, again in place of time spent, the bribe variable is included but the labor problem is discarded since it has some multicolinearity with various firm dummies.

Exporting firms are evidently more pessimistic with their survival prospect compared to non-exporters. The magnitude of the exporting firm coefficient is significantly positive and large (above 0.43) in all specifications (column I through III). This appears to be in agreement with many macroeconomic indicators for example

[8] We do not specify locations so firms can relocate to other countries.

export growth and index of industrial output that show disappointing performance of this sector since 2001. Firm in Java where two-third of the population is concentrated, is more optimistic about the future. The majority of respondents are non-exporters with Java as the most important market.

Interestingly, local licensing, the number of new local taxes, tax rates are not really very important issues in the mind of respondents. In specification I and II, the most pressing problems undermining their long-term survival turn out to be labor related matters, too many new local levies and the uncertainty arising from the presence of many agencies demanding for bribes.

In specification I, the labor variable appears to be the most important variable. The coefficient is quite large and more significant relative to other important variables (bribe uncertainty and levies). So environment created by the new labor legislation seems to be the most important variable behind the apparent contraction of the number of firms especially in manufacturing since 2001. Anecdotal evidence from the interview suggested that not only the have difficulty in adjusting with the uncompetitive labor law, but also they face foreign competition, mainly smuggled goods from China.

Moving Prospect

Table 6 reports the ordered Probit regression on the likelihood to move to other locations. The set of explanatory variables is the same as table 5. Again the most pessimistic are exporters, with a strongly significant positive dummy coefficient. The interesting thing about this regression compared to table 5 is that the previously insignificant positive coefficient for the FDI dummy is now significant at the 10% level (specification II and III). Understandably, the FDI firms confronted with the worsening of business climate are considering relocation to other country, so they have more choice compared to struggling domestic firms, who are forced to close down the businesses. Looking at the reasons of moving, the most important are labor problem, high local levy rates and bribe uncertainty.

In resemblance to table 5, firms in Java are less likely to move. This may suggest that due to close its proximity to the national capital, the situation in Java may not be so bad. Due to the longer bureaucratic chain, the fragmentation of bribe collection system may be worse in off-Java areas. Also, although the problem of multiple agencies with veto power still remains, Java is still the biggest domestic market, which makes sustaining bribery cost much easier than their counterpart in off-Java areas. Perhaps, they also have better political connection that helps to ward-off harassment from the lower level officials.

7. CONCLUSION

This paper attempts to quantify the adverse effects of bribe uncertainty on firms by analyzing the recently comparing two firm level surveys: the 2001 and 2003 CODB surveys.

The empirical analysis finds that tax payment is the prime determinant of bribe rates. To complicate the problem, district tax offices are not part of district governments, rather they are part of the central government bureaucracy. So even if district government succeed in reducing corruption among its officials to attract business and more tax revenue at the local level, central government tax officials may continue to demand large bribes without concern for the longer-term impact on development of the district. The study also finds positively sloped relationship between bribes and time spent (time delays) with officials. This support the theoretical model that officials can only guess the firms' expected profits, while at the same time firms look for lower bribes, so both parties have to spend some time in bargaining.

We find that bribe play some 'greasing' role in firm survival by reducing government-related burdens. But because of the fragmentation of bribe system, which makes the outcomes of bribing become uncertain, firms choose not to engage in negotiation. This makes it difficult for firms to adjust to difficult economic condition, which force them to go underground becoming 'informal' sector, to close down business or to move abroad. For large firms and FDI moving plants to other countries is perhaps still feasible choice.

We also identify that labor related matter is perhaps more important than bribe uncertainty in the firm survival. The problems range from unanticipated strike, minimum wages to the inflexibility of labor legislation dealing with worker dismissals. This makes it very difficult for firms to adjust at the time of falling demand.

8. REFERENCES

Alm, James, Robert H. Aten and Roy Bahl. (2001), Can Indonesia Decentralize Successfully? Plans, Problems and Prospects, *Bulletin of Indonesian Economic Studies, 37(1): 83-102.*

Bardhan, P. (1997). Corruption and Development: A Review of Issues, *Journal of Economic Literature, vol. 35(3): 1320-1346.*

Barro, Robert J. (1991), Economic Growth in a Cross Section of Countries, *Quarterly Journal of Economics, 106:407-443.*

Bliss, Christopher, and Rafael Di Tella, Does Competition Kill Corruption, *Journal of Political Economy, 105(5): 1001-1023.*

Clarke, R.G. George, and Lixin Clin Xu, Ownership, Competition, and Corruption: Bribe Takers versus Bribe Payers, *World Bank Policy Research Working Paper, February.*

Fisman, Raymond and Roberta Gatti. (2000), Decentralization and Corruption: Evidence Across Countries, *Journal of Public Economics, 83: 523-345.*

Fisman, Raymond, and Jacob Svensson. (2000). Are Corruption and Taxation Really Harmful to Growth? Firm Level Evidence, *World Bank Policy Research Working Paper.*

Green, W.H. (1993), *Econometric Analysis, second edition*, Macmillan Publishing Company, New York.

Hamilton-Hart, Natasha. (2001). Anti-Corruption Strategies in Indonesia, *Bulletin of Indonesian Economic Studies, 37(1): 65-82.*

Huther, J. and Anwar Shah. (1998), Applying a Simple Measure of Good Governance to the Debate on Fiscal Decentralization', *World Bank Policy Research Working Paper.*

Kaufmann, Daniel and Shang-Jin Wei. (1999). Does Grease Money Speed Up the Wheels of Commerce, *NBER Working Paper No. 7093.*

Krueger, Anne. O. (1974). The Political Economy of the Rent-Seeking Society, *American Economic Review, June: 291-303.*

Lui, Francis. (1985). An Equilibrium of Queuing Model of Bribery, *Journal of Political Economy, August, 93(4): 760-781.*

Mauro, Paolo. (1995). Corruption and Growth, *Quarterly Journal of Economics, 110: 681-712.*

MacIntyre, Andrew, Investment, Property Rights, and Corruption in Indonesia', in Campos, J.E.(ed). (2001). *Corruption: The Boom and Bust of East Asia*, Ateneo de Manila University Press.

McLeod, Ross H. (2000), Soeharto's Indonesia: A Better Class of Corruption, *Agenda, vol. 7(2), p. 92-112.*

Rahman, Aminur, Gregory Kisunko, and Kapil Kapoor. (2000). Estimating the Effects of Corruption: Implicatiosn for Bangladesh, *World Bank Policy Research Working Papers.*

Shleifer, Andrei and Robert W. Vishny. (1993). Corruption, *Quarterly Journal of Economics,* August: 599-617.

Shleifer, Andrei and Robert W. Vishny. (1994). Politicians and Firms, *Quarterly Journal of Economics*, November: 995-1025.

Svensson, Jacob. (2000). Who Must Pay Bribes and How Much?, *World Bank Policy Research Working Paper.*

Tanzi, Vito, and Hamid Davoodi. (1997). Corruption, Public Investment and Growth, *IMF Woking Paper.*

Tanzi, Vito. (1998), Corruption Around the World: Causes, Consequences, Scope and Cures, *IMF Staff Papers, 45(4):559-594.*

Treisman, Daniel. The Causes of Corruption: A Cross-National Study, *Journal of Public Economics, 76(2000): 399-457.*

Wei, Shang-Jin, 2000, How Taxing is Corruption on International Investors, *Review of Economic and Statistics, 82(1): 1-11.*

Table 1
Bribe Rates in The 2001 CODB Survey
(% of production costs)

Characteristics	**Mean***	**N**
Size (annual revenue)		
Small (<Rp. 1 billion)	10.4	488
Smaller-medium (Rp. 1-5 billion)	11.6	322
Larger-medium (Rp. 5-10 billion)	9.6	324
Larger (>Rp. 10 billion)	8.2	195
Sector		
Agribusiness	10.3	89
Manufacturing	9.3	646
Services	11.3	618
Location		
Urban (kota)	11.8	617
Non-Urban (kabupaten)	10.3	716
Java	9.9	917
Off-Java	11.7	411
Export orientation		
Exporter	9.7	371
Non-exporter	10.4	962
Ownership		
Foreign	12.0	167
Domestic	10.2	1164
Firms reporting positive bribes	10.8	1333

Notes:

* Only for those reporting positive bribes

Table 2
Bribe Rates in The 2003 CODB Survey
(% of production costs)

Characteristics	**Mean***	**N**
Size (annual revenue)		
Small (<Rp. 1 billion)	3.9	418
Smaller-medium (Rp. 1-5 billion)	4.7	110
Larger-medium (Rp. 5-10 billion)	4.2	54
Larger (>Rp. 10 billion)	4.0	49
Sector		
Manufacturing	3.6	428
Services	5.6	167
Location		
Urban (kota)	3.3	212
Non-Urban (kabupaten)	4.5	419
Java	4.2	599
Off-Java	2.6	42
Export orientation		
Exporter	3.7	53
Non-exporter	4.1	578
Ownership		
Foreign	5.0	23
Domestic	4.0	608
Firms reporting positive bribes	4.1	631

Notes:
* Only for those reporting positive bribes

Table 3
Bribe Rates in Day to Day Operation : OLS Estimates

Dependent Variable	Bribe Rates in Day to day Operation			
Year	2001		2003	
Model Specification	I	II	I	II
Explanatory Variables				
Constant	**-0.71**	**1.28**	**2.91**	**4.12**
	[-0.39]	[0.79]**	[2.07]**	[3.77]**
Tax Payment	**0.40**	**0.41**	**0.23**	**0.29**
	[11.15]**	[11.37]**	[5.00]**	[5.55]**
Time Spent with Officials	**1.61**	**1.66**	**0.58**	**0.61**
	[5.52]**	[5.77]**	[2.01]**	[2.10]**
Number of Operational Licenses	**0.13**	**0.16**	**-0.13**	**-0.12**
	[2.05]**	[2.54]**	[-0.77]	[-0.71]
Bribe Uncertainty	**0.66**	**0.68**	**-0.31**	**-0.33**
	[2.86]**	[3.00]**	[-2.36]**	[-2.43]**
Dummy for Smaller-medium Firms		**0.61**		**0.37**
		[0.82]		[0.64]
Dummy for Larger-medium Firms		**-2.08**		**-0.13**
		[-2.71]**		[-0.17]
Dummy for Large Firms		**-4.08**		**-0.85**
		[-3.92]**		[-0.83]
Dummy for Manufacturing Firms	**1.25**		**0.91**	
	[1.16]		[1.00]	
Dummy for Service Firms	**2.84**		**2.73**	
	[2.62]**		[2.76]**	
Dummy for Urban	**-0.76**	**-0.17**	**-1.17**	**-0.71**
	[-1.28]	[-0.29]	[-2.47]**	[-1.54]
Dummy for Exporting Firms	**0.94**	**1.16**	**-0.03**	**-0.37**
	[1.23]	[1.58]	[-0.03]	[-0.37]
Dummy for FDI Firms	**-1.91**	**-0.99**	**0.80**	**1.22**
	[-1.82]*	[-0.92]	[0.61]	[0.87]
Local Government Helpfulness	**-0.81**	**-0.84**	**0.03**	**0.002**
	[-3.09]**	[-3.22]**	[0.12]	[0.001]
No. Observation	998	998	629	629
R-Squared	0.21	0.22	0.13	0.11
F-value	26.74**	26.15**	8.87**	6.74**

Notes:

1. Figures in parentheses are t-ratios
2. ** significant at 5%; * significant at 10%
3. The 2003 sample is exclusively necessity goods producers and distributors.

Table 4
Bribe Rates to set up a New Business OLS Estimates

Dependent Variable	Bribe Rates to set up a New Business			
Year	2001		2003	
Model Specification	I	II	I	II
Explanatory Variables				
Constant	**5.61** [2.81]**	**6.52** [3.79]**	**4.92** [2.68]**	**5.18** [3.71]
Time Spent with Officials	**1.43** [4.71]**	**1.56** [5.06]**	**1.74** [6.43]**	**1.68** [6.12]**
Number of Licenses	**0.26** [3.33]**	**0.26** [3.30]**	**-0.18** [-0.90]	**-0.25** [-1.27]
Bribe Uncertainty	**0.22** [0.94]	**0.30** [1.28]	**-0.33** [-2.23]**	**-0.34** [-2.33]**
Dummy for Smaller-medium Firms		**0.52** [0.69]		**0.62** [0.91]
Dummy for Larger-medium Firms		**-1.01** [-1.27]		**0.06** [0.09]
Dummy for Large Firms		**-1.60** [-1.48]		**1.89** [1.49]
Dummy for Manufacturing Firms	**0.40** [0.34]		**-0.47** [-0.39]	
Dummy for Service Firms	**2.31** [1.97]**		**0.76** [0.58]	
Dummy for Urban	**-1.14** [-1.91]*	**-0.72** [-1.21]	**-0.05** [-0.09]	**0.05** [0.10]
Dummy for Exporting Firms	**0.66** [0.83]	**0.13** [0.17]	**0.25** [0.26]	**-0.92** [-0.83]
Dummy for FDI Firms	**-2.85** [-2.66]**	**-2.58** [-2.32]**	**2.62** [1.78]*	**1.95** [1.24]
Local Government Helpfulness	-1.03 [-3.77]**	-1.03 [-3.78]**	**-0.36** [-1.31]	**-0.41** [-1.52]
No. Observation	1005	1005	636	636
R-Squared	0.08	0.07	0.09	0.09
F-value	9.44**	8.09**	7.23**	6.35**

Notes:
1. Figures in parentheses are t-ratios.
2. ** significant at 5%; * significant at 10%
3. The 2003 sample is exclusively necessity goods producers and distributors.

Table 5

Survival Prospect : The likehood to go out of Business

Dependent Variable	Ordered Probit: 1=very unlikely to 6=very likely		
Specifications	I	II	III
Explanatory Variables			
Bribes as % of Production Cost	**-0.01**	-	**-0.01**
	[-1.66]*	-	[-1.89]*
Time Spent with Officials	-	-0.03	-
	-	[-0.69]	-
Problem in Labor Affairs	**0.19**	-	-
	[6.56]**	-	-
Problem in Local Licensing System	**-0.08**	**-0.05**	**-0.05**
	[-3.03]**	[-1.86]*	[-1.89]*
Too Many Local Taxes	**-0.03**	**-0.03**	**-0.03**
	[-0.60]	[-0.61]	[-0.67]
Local Tax Rates too High	**0.05**	**0.06**	**0.06**
	[0.98]	[1.13]	[1.21]
Too Many Local Levies	**0.07**	**0.12**	**0.12**
	[1.25]	[2.00]**	[2.00]**
Local Levy Rates too High	**0.10**	**0.08**	**0.08**
	[1.83]*	[1.48]	[1.51]
Bribe Uncertainty (Other Agencies Emerged for Bribes)	**0.09**	**0.10**	**0.10**
	[3.79]**	[4.18]**	[4.39]**
Dummy Exporting Firm	**0.49**	**0.45**	**0.44**
	3.08]**	[2.85]**	[2.79]**
Dummy FDI Firm	**0.05**	**0.13**	**0.15**
	[0.22]	[0.52]	[0.60]
Dummy Manufacturing Firm	**0.10**	**0.18**	**0.19**
	[0.84]	[1.46]	[1.54]
Dummy Service Firm	**-0.19**	**-0.20**	**-0.18**
	[-1.49]	[-1.53]	[-1.40]
Dummy Smaller Medium Firm	**0.003**	**0.007**	**0.01**
	[0.00]	[0.08]	[0.12]
Dummy Larger Medium Firm	**-0.15**	**-0.07**	**-0.08**
	[-1.20]	[-0.57]	[-0.61]
Dummy Large Firm	**-0.30**	**-0.12**	**-0.14**
	[-1.67]*	[-0.70]	[-0.79]
Dummy Java	**-0.39**	**-0.29**	**-0.28**
	[-3.16]**	[-2.36]**	[-2.28]**
No. Observations	1303	1303	1303
Pseudo-R-Squared	0.06	0.05	0.05
LR-Chi-Sqr	233.61	187.51	190.60

Notes:

1. Figures in parentheses are t-ratios

2. ** significant at 5%; * significant at 10%

Table 6
Relocation Prospect : The likehood to move to Other Location

Dependent Variable	Ordered Probit: 1=very unlikely to 6=very likely		
Specifications	I	II	III
Explanatory Variables			
Bribes as % of Production Cost	**-0.01**	**-0.01**	
	[-1.85]*	[-2.05]**	
Time Spend with Local Officials	-	-	**0.14**
	-	-	[3.06]**
Problem in Labor Affairs	**0.16**	-	-
	[5.78]**	-	-
Problem in Local Licensing System	**-0.001**	**0.03**	**0.02**
	[-0.05]	[1.00]	[0.59]
Too Many Local Taxes	**-0.003**	**-0.005**	**0.009**
	[-0.06]	[-0.11]	[0.18]
Local Tax Rates too High	**-0.006**	**0.004**	**-0.004**
	[-0.12]	[0.08]	[-0.07]
Too Many Local Levies	**0.04**	**0.08**	**0.07**
	[0.68]	[1.33]	[1.25]
Local Levy Rates too High	**0.14**	**0.12**	**0.12**
	[2.63]**	[2.36]**	[2.33]**
Bribe Uncertainty (Other Agencies Emerged for Bribes)	**0.10**	**0.12**	**0.10**
	[4.58]**	[5.12]**	[4.42]**
Dummy Exporting Firm	**0.42**	**0.38**	**0.43**
	[2.70]**	[2.46]**	[2.75]**
Dummy FDI Firm	**0.38**	**0.45**	**0.44**
	[1.54]	[1.83]*	[1.79]*
Dummy Manufacturing Firm	**0.10**	**0.18**	**0.18**
	[0.85]	[1.47]	[1.53]
Dummy Service Firm	**-0.13**	**-0.12**	**-0.13**
	[-1.06]	[-0.97]	[-1.04]
Dummy Smaller Medium Firm	**0.06**	**0.07**	**0.04**
	[0.73]	[0.80]	[0.47]
Dummy Larger Medium Firm	**-0.20**	**-0.13**	**-0.17**
	[-1.55]	[-1.04]	[-1.35]
Dummy Large Firm	**-0.18**	**-0.04**	**-0.13**
	[-1.02]	[-0.24]	[-0.76]
Dummy Java	**-0.22**	**-0.13**	**-0.14**
	[-1.82]*	[-1.08]	[-1.20]
No. Observations	1303	1303	1303
Pseudo-R-Squared	0.06	0.05	0.05
LR-Chi-Sqr	251.78	218.40	223.52

Notes:
1. Figures in parentheses are t-ratios
2. ** significant at 5%; * significant at 10%