

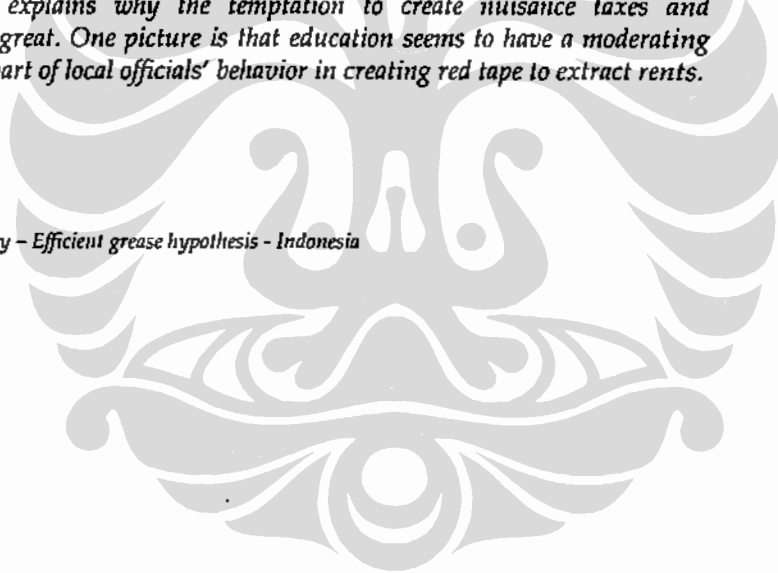
Bribery and Time Wasted in Indonesia: A Test of the Efficient Grease Hypothesis

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Abstract

This paper examines the time wasted or effective harassment due to red tape at the district level in Indonesia. The study finds a positive relationship between effective harassment in the form of the time spent by firms with local bureaucrats and bribe rates, even after controlling for firm and other characteristics (location, industry etc). The bureaucratic harassment and bribes are therefore not completely exogenous – so, the efficient grease hypothesis cannot be supported. After decentralization, retribution to extract rents has become the biggest nuisance for most firms. Besides the euphoria of decentralization, a weak local tax base also explains why the temptation to create nuisance taxes and retributions is great. One picture is that education seems to have a moderating impact on the part of local officials' behavior in creating red tape to extract rents.

Keywords: Bribery – Efficient grease hypothesis – Indonesia



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1. INTRODUCTION

One interesting development in Indonesia after the fall of Soeharto was the drive toward regional decentralization. The nature of centralized authority of the Soeharto regime was challenged. This also included the nature of relationship between the central government and local governments. In the political arena, the new atmosphere of freedom after the fall of the Soeharto regime has created euphoria on the part of local governments, including provinces and districts, to demand greater autonomy to manage their own affairs. Responding to this new development, the New Law of Regional Decentralization went into effect in January 1, 2001.

The law is aimed to reverse the centralization process by decentralizing some bureaucratic processes and revenues from the exploitation of natural resources like oil, gas, and forests to regional governments (province and municipalities) as well as some portion of income and corporate taxes. The new law regulates the transfer of some fiscal authority and responsibility from the central government to provinces, districts and municipalities. One of the unforeseen impacts of the new law is the race among local governments to raise and create new taxes. Some local governments even tax the movement of goods and people through their localities.

The main purpose of the paper is to investigate the extent of rent extraction by local bureaucrats at the district level on private firms in Indonesia, in particular after the implementation of the Law of Regional Decentralization. The decentralization itself may reduce or increase transaction costs depending on the attitude of local officials. In this study, corruption or rent-seeking activities will be focused on bribery and the market for local (district) government regulations, such as business license, fire safety inspection, compliance with environmental regulations, local tax appraisal, building permits, employment contract inspection etc. We abstract from other rent-seeking activities like lobbying governments for particular projects, lobbying for industrial protection, lobbying for exclusive monopoly rights and so on.

This paper employs a rich data set, produced by a field survey on the governance at the district government level in Indonesia, conducted by the Institute of Economic and Social Research, University of Indonesia. The survey is called the special survey on governance (SSG), which covers many important aspects related to the cost of doing business in Indonesia, such as corruption (bribes), taxation, infrastructure provision, local regulations, labor disputes, land disputes, and so on. Although the coverage of the data set is quite comprehensive, the focus of this study is on the effective burden of red tape faced by firms, as a result of district officials' rent-seeking behavior after the new laws went into effect.

2. BRIEF REVIEW OF THE LITERATURE

The theoretical literature makes ambiguous predictions about the relationship between corruption and its impact on economic activities. Huntington (1968), for example, asserted that excessive taxes and regulations would remain excessive without bribery, so bribery had in effect acted like deregulation. This view is termed as the 'efficient grease hypothesis' which argues that corruption could increase economic growth because it acts as 'grease money', which enables firms to avoid bureaucratic red tape. Lui (1985) in support of this view showed that in a queuing model, corruption could be growth enhancing. In this respect the difference 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 crucial assumption of the efficient grease model is that the red tape and regulatory burden can be taken as exogenous factors, independent of the incentive for officials to take bribes.

In contrast, the second view rejects the notion that corruption could be efficiency enhancing, as argued by Susan Rose-Ackerman (1974 and 1978), Shleifer and Vishny (1993 and 1994), Bliss and Di Tella (1997) and Kaufman and Wei (1999). This opposite view asserts that because bureaucrats have discretionary power with a given regulation, regulatory burdens may be endogenously set by corrupt officials, such that they customize the nature and amount of harassment on firms to extract the maximum possible bribes. In this model, firms that pay more bribes could still face higher, not lower effective red tape. Consequently, corruption could lower economic efficiency instead of improving it.

The seminal work of Barro (1991) provided an insight on how countries' characteristics affect economic growth. Since then, several empirical studies have been conducted, using the same framework investigating the determinants of economic growth beyond the standard variables proposed by Barro. One early study of the relationship between economic growth and corruption was conducted 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 of corruption on Bangladesh's economic growth. Using the estimated equation, counter-factual simulation exercises were conducted to examine the extent to which Bangladesh had to reduce the level of corruption in order to achieve a certain level of economic growth comparable to some selected countries.

The finding revealed that curtailing corruption would attract more investment, domestic and foreign alike, which would accelerate economic growth.

The first view seems to conform with the general perception, particularly among political elites in the Soeharto era, that corruption inflicted very little cost on economic development (Hamilton-Hart 2001). The abundance of revenues of natural resources as well as foreign aid hid the economic costs of corruption, at least until the 1998 economic crisis. Hamilton-Hart also argued that in the context of centralized political systems like in the Soeharto era, corruption was less detrimental economically than in systems where power and authority are diffused.

The critical aspect of corruption in Indonesia was that the whole power structure, including the civil service, was built on the patron-client relationship. In particular, there are two principal causes of corruption in the Indonesian civil service: poor performance management and a dysfunctional pay policy. There is no clear standard for performance appraisal. Often the performance appraisal system is based on the discretion of superiors. With respect to the salary system, the base pay is so low so that it needs to be supplemented from the development budget. As a result, a complex series of allowances nor related to performance emerged. Since allowances are also based on the superior's discretion, what is emerging then is a network of patronage and personal loyalty.

One interesting question is why, despite pervasive corruption, Indonesia still enjoyed high rates of economic growth during the Soeharto era. The answer may lie in the climate of political stability during the above era that reduced much uncertainty (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 uncertainties 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-Soeharto era in Indonesia has resulted in a different nature of corruption. The era of the centralized political systems is now gone, replaced by a system where power and authority are more diffused. It is not too surprising that if the 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 activities will likely result in higher level 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 now be more detrimental to economic efficiency than in the Soeharto era.

While in other countries decentralization may have nothing to do with corrupt behavior, in Indonesia, already burdened with the corruption problem in the Soeharto era, only made 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 designed to create artificial complementary regulations. For example, 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 other important non-economic factors also play part in the equation, the fragmentation of the bribe collection system, the creation of artificial complementarity between bribes and the free entry of new corrupt agencies in post-Soeharto Indonesia, provides some important clues, why corruption in Soeharto's New Order seemed to exert no negative influence on economic growth in that era.

3. DATA SET

The primary concern in the study of corruption is how to get reliable data. Even with a carefully designed question set, it would be unrealistic to expect all respondents to fill out or to answer all items on such questions. Given the secretive nature of corruption, it will be difficult for someone conducting a survey to obtain honest answers on items related to such activities. The common trick usually is to put questions related to corruption not at the beginning of questionnaire, but later on preferably in the last one-half of the interview time. As the interview progresses,

this allows trust to be built between an interviewer and a respondent before critical questions on corruption come into place. Maximum efforts were directed to design corruption related questions. Indirect questions were used thoroughly, especially for sensitive questions. In order to ensure the reliability of the data, multiple questions were asked to check the consistency of responses.

The special survey of the governance of the local governments was conducted at the end of 2001. The survey was designed specifically to investigate the governance in general and the extent of corruption at the third tier government in Indonesia, particularly after the launching of the new law of regional decentralization in January 2001.¹ The third tier government in Indonesia consists of *kota* (municipality) and *kabupaten* (district). One important consideration why this level of government was chosen to study corruption is that the decentralization law basically devolves power to municipalities and districts instead to provinces.² The fear of the potential secessionist movement may have been the primary motivation behind this policy.

With respect to the calculation of bribe rates, a firm is asked about the extra cost which needs to be paid when it deals with bureaucrats. Which such a type of question it is almost impossible to get an answer if the expected response is the magnitude of bribery cost in terms of monetary value, but if it is asked in terms of a percentage of total cost, then the probability of getting a proper response (i.e. reporting positive bribe) will increase significantly. In the special survey of governance (SSG), firms reporting positive bribe are about 85 percent of firms of the total sample of 1800. The special survey on regional governance was conducted in the last quarter of 2001 and lasted until June 2002, bearing in mind that the new law of regional decentralization was launched in January 2001. The new law itself was a new break from the old practice with respect to the relationship between the central government and local governments. But due to data limitations before 2001, it is very difficult to capture the structural break associated with bureaucrats' behavior in taking bribes.

Besides the level of bribe (in percentage of production cost), another important variable is the level of bureaucratic harassment faced

¹ The purpose of the special survey is actually to monitor the abusive practice of local governments in particular to business sectors after the launching of the new law of regional decentralization in early 2001. There is a plan to publish the annual report of the attitude of local governments towards the business sector with the intention to induce some behavior changes for the ones considered unfriendly to the business sector. This annual report will serve the same purpose as the Business International (BI) corruption index and the International Country Risk Guide, the only difference is that the corruption index in Indonesia applies to regional (local) governments.

² To simplify the exposition we refer all third tier governments in the paper as districts

by firms. There are two types of harassment, nominal and effective (real) ones. The nominal harassment that bureaucrats impose on a firm can be in the form of tax assessment, fire safety measures, environmental safety standards, or the published number of days needed to obtain a certain license. In other words, the nominal harassment is the red tape announced before a firm pays the bribe. The real harassment on the other hand is the red tape that a firm actually faces after paying the bribe. In this regard, bureaucrats have discretion over the actual implementation of a given regulation, so in effect red tape or bureaucratic delays to some extent can be customized.

The level of real harassment is measured by the time spent by managers with bureaucrats. Respondents were asked on a scale of one to six, the extent of time wasted by management in order to smooth a business operation. Another variable that is closely related to the real harassment is the uncertainty associated with the bribe payment. To capture this situation, respondents were asked on a scale of one to six about the predictability of bribes. The score ranges from one for very unpredictable to six for very predictable.

3.1 Firm Responses

Table 1 shows various subjective measures of a business climate measured from one: the best situation to six: the worst situation – so a high score except the last one indicates something bad. The first row presents the level of difficulty in getting business licenses. In the second row is the number of taxes in a district, followed by tax rates. The fourth and fifth variables are the number of retributions in a district. In the next row is the measure of bribe uncertainty. Finally, in the last row is time spent with officials.

Most complaints were directed at the sudden change of local regulations and local tax laws under the new regime. In particular with respect to local taxes, not only have the rates been increased, but the number of new taxes has also multiplied. Firms are clearly more afraid of the creation of new taxes and retribution than other issues such as license applications. The average time spent with officials is 2.22 which roughly takes between 10 to 15% of the manager's productive time.

The results of interviews with local bureaucrats conducted at 58 districts confirm this concern. The overwhelming majority of the respondents (52 out of 58 districts) said yes when asked whether the respective district planned to increase local tax rates and to add new local taxes to the existing ones. There seems to be some obsession on the part of local officials with local own revenues (PAD). There is a tendency to use PAD as the indicator of the region's success irrespective of the means to increase revenues.

Table 1
Various Measures of Business Climate

Variable	N	Mean	Std
Difficulty to get license	1746	2.87	1.46
Number of taxes	1762	4.32	1.34
Tax Rates	1754	4.33	1.34
Number of retributions	1772	4.43	1.36
Retribution rates	1760	4.45	1.39
Predictability of bribes	1803	3.91	1.30
Time spent with officials	1732	2.22	1.06

3.2 Local Government Attitudes

There are two laws that govern the decentralization process in Indonesia, Law No. 22/1999 on Regional Government and Law No. 25/1999 on the Fiscal Balance between the Central Government and the Regions. Those two laws were passed in 1999, but the launching was deferred until January 2001. In the implementation of the laws, responsibility for much of government expenditure is being decentralized mostly to municipalities (*kota*) and districts (*kabupaten*), which are the third tier government in Indonesia, rather than to provincial governments.

Those two laws, however, are not without flaws. It became apparent that the laws were destined mainly for expenditure but not revenue decentralization. The so-called revenue sharing scheme only applies to resource rich provinces. These new laws were created particularly to appease resource rich provinces such as Aceh, Riau, East Kalimantan, and Papua, which showed sign of restlessness after the fall of Soeharto. In an attempt to change the old practice, those provinces demanded a new scheme that puts a greater portion of oil/gas revenues within the respective regions.

This scheme was deemed unfair for provinces whose economies were based on agriculture, manufacturing and service rather than oil or other mineral extraction activities. In particular, the laws do not grant local governments with a satisfactory revenue sharing formula for taxes on non-oil activities. Most income and corporate taxes are therefore collected by the central government. Almost at the last minute an amendment to the local tax laws was added to the new laws. The amendment itself only makes the situation more uncertain owing to the fact that it does not provide clear direction on how local governments could raise their own source of revenues. From SSG it is clear that many

local governments mistakenly believe this amendment as the green light for local tax discretion. At first only few local governments ventured to create or to raise taxes but others soon followed suit.

Another criticism leveled at the new laws is the uncertainty associated with the mismatch between the revenues and the expenditure responsibilities (Alm et.al 2001). On the expenditure side regional governments would see their responsibilities increase due to the transfer of several central government functions, such as payment of all civil servant salaries (including teachers and health care workers. This transfer also included the reassignment of several thousand central government employees to regional level jobs. The increase of expenditures at the local level particularly arises from the need to pay the salaries of the transferred employees. Not only this, local governments now are expected to provide full services previously performed by the central government, such as primary and secondary education, health clinics, local and regional roads, water supply and sewerage system and the like. Although officially the financing of all expenditures related to the salaries of transferred government employees would come from the so-called general purpose fund. There is great uncertainty with respect to the actual amount of money allocated to fund these new responsibilities. In many cases the money is only enough to pay for salaries and not much left for other expenses like maintenance and material expenditures.

The interview results from SSG suggest that from the revenue side local governments also face uncertainty. In the new laws the general purpose fund (DAU=Dana Alokasi Umum) is designed to replace both the routine transfer used to pay the salaries of local civil servants (SDO=Subsidi Daerah Otonom) and the general development transfer used to disburse funds to pay for capital expenditures.³ The uncertainty comes largely from the fact that the allocation of DAU is determined by formulae designed by the central government based on a number of socio-economic indicators. The construction of formulae, however, has not been well understood by local governments, which in 2002 caused a prolonged dispute between the central and local governments. The disputes usually concerned the amount of money received at the beginning of the fiscal year. Local governments tend to assume that they will receive at least the same amount as last year. Any downward revision would prompt intensive scrutiny from local governments.

The problem with the formulae is that any changes in some socio-economic indicators used would result in a different allocation scheme than previously anticipated by local government budget planners. If there is a downward revision, then the central government would find

³ Within the central government budget the general allocation fund amounts to at least 25 percent of the central government domestic revenues.

itself become the subject to intensive lobbying. In this case the allocation eventually has to be approved by the legislative body. If local governments fail to persuade the central government to change the allocation, then the next step is often to lobby some influential members of the legislative body. At present it is not yet known whether this practice also involves bribery in exchange for the "services" performed. The above example illustrates the problem faced by local governments both on the revenue and expenditure sides. This increases the temptation to raise local own revenues in order to pay for new local responsibilities.

The euphoria created by the launching of the new law of regional decentralization in 2001 is still strong among the majority of local officials. The obsession with local own revenues (PAD=Penerimaan Asli Daerah) was still visible. Although it appeared that there was a growing awareness that the creation of too many local regulations (PERDA=Peraturan Daerah) to collect PAD would in the long run be detrimental to the city's or district's competitiveness, the practice of creating local new taxes and retributions remained. This attitude is indeed confirmed by the survey which suggests that the primary priorities of local governments are to raise rates and to create new taxes (50 out of 58 local governments surveyed).⁴ The relaxation of restrictions on regional taxes and retributions (user charges) actually has started when the Law 34/2000 came into effect in 2000.⁵ The rush to create new taxes and retributions, however, took place only recently after the launching of the decentralization laws (Law 22/1999 and Law/1999) in January 2001. Actually, Law 34/2000 stipulates that all new local taxes and new retributions must be reviewed by the central government to ensure that they are not detrimental to economic efficiency. The number of new taxes and new retribution is, however, overwhelmingly close to a thousand. There is very little chance that the central government could finish reviewing the new local taxes and retributions in the short period of time

Given the obsession with PAD, it is very interesting to observe what district governments provide in return to their respective local economies. The district governments surveyed generally pay lip service to the necessity to maintain and to improve their competitiveness in their regions. The vision documented in the district strategic planning document (RENSTRA) is usually ambiguous. More concrete visions are obtained from interviews conducted with officials from the district planning agency (BAPPEDA). These visions usually focus on the city's or district's intention to develop few sectors in which the city has

⁴ Street lighting and hotel-restaurants are the favorites.

⁵ This Law in effect annulled Law 18/1997 that was intended to curb nuisance taxes and taxes on regional trade

comparative advantage, for example manufacturing, trade, services and tourism.

But even with these more concrete visions, the gap with the budget allocations remains. Looking at how the budget is allocated, it is obvious that the main interest of district officials is routine expenditures. The current norm is that between 66 and 90 percent of the budget is allocated for routine expenditures. One item in the routine budget, namely personnel expenditure, on average receives 70 percent of the total annual budget. So the conclusion is that very little development or capital expenditure is left to boost the productive capacity of a region.⁶ Even within these limited development expenditures, not all items can be considered as true capital expenditures. The item of government apparatus (*aparatur pemerintah*) for example is a dubious one. It is very likely that this item is no capital expenditure at all.

4. A MODEL OF CORRUPTION AND BRIBERY

In order to guide the empirical work, we develop a simple model of bribery based on the adaptation of Henderson and Kuncoro (2004). A firm is assumed to bribe local officials in order to reduce burdens associated with government regulations, so the effective burden is given by,

$$h = H - pf(b,t) \dots\dots\dots (1)$$

In (1), *b* is bribe expenses and *t* is time spent with officials. The function *f(b,t)* actually represents how much actually the burden *H* can be reduced, while at the same time also captures the negotiation technology.⁷ 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 some shares, so not all of *f(.)* will be granted. The allocation of *f(.)* between firm and officials will depend on the bargaining strength of each party, so *p* is a uniformly distributed between 0 and 1 representing the firm's bargaining power. The effective gain for a firm is given by,

$$h = pf(b,t) - H - b \dots\dots\dots (2)$$

⁶ The largest chunk of development budget (around 50 percent) goes to transportation & tourism and government apparatus.

⁷ For simplicity we assume that the firm negotiator is honest as to avoid the complication of a principal agent problem in the modeling.

The sign of a cross-derivative f_{bt} , is also very important for the prediction of the model. We assume that this derivative reflects a 'learning' story between corrupt officials and a bribing firm. Presumably, it would involve a significant negotiation time between them, before arriving at a mutually agreed bribe. During the first visit, a firm offers a certain amount of bribe, but the official in an attempt to extract rent as much as possible, most likely would reject it with the hope that a firm would come back again later to offer a higher bribe. During the next visit a firm proposes a higher bribe than before and again the official would consider it. This 'bargaining' process would continue until they reach agreement. So, based on this bargaining process, $f_{bt} > 0$. The official however, acknowledges that there is a maximum bribe beyond which a firm is not willing to pay, so he also bears some risk of losing bribe income if this particular firm decides to withdraw its bid. This can be viewed as a moderating mechanism that prevents the model from producing unreasonably high bribes.

Assuming that bribing activity is independent of a firm's operation, the objective of a firm is to minimize the bribe costs C.

$$C = Z(H - pf(b, t)) + b \dots\dots\dots (3)$$

It is assumed that $Z' > 0$ and $Z'' > 0$

There is a trade-off between bearing the full amount of the regulation burden H and paying bribe b to reduce the burden. Without bribe or $b=0$, a firm would have to bear the full amount of tax liability, H, the cost would be $Z(H)$ which is higher than $Z(h)$. By paying a bribe, b^* , and spending time t^* , the amount of burdens will be reduced to h, the total costs incurred would be b^* . In other words, since Z is strictly increasing, if $Z(H) > Z(t)$ then there are some non-zero optimal bribes, b^* such that $Z(H) > Z(h) + b^*$ - so in this situation, it is worthwhile to pay bribes.

A firm chooses the level of b and t to minimize (3). The first order conditions are given by,

$$Z'(H - pf(.)) \cdot p \cdot f_b(.) - 1 = 0 \dots\dots\dots (4a)$$

$$Z'(H - pf(.)) \cdot p \cdot f_t(.) = 0 \dots\dots\dots (4b)$$

Our previous assumptions in (1) through (3) make the cost function (3) well-behaved, so (4a) and (4b) can then be solved for the bribes and time (effective harassment) function,

$$b = b(p, t, H) \dots\dots\dots (5a)$$

$$t = t(p, b, H) \dots\dots\dots (5b)$$

Equation 5a and 5b are in the form of semi-reduced form, where b and t are jointly determined. If we totally differentiate (4b) with respect to t, p, b and H, we obtain after rearrangement

$$dt = \frac{b_1}{w} dp + \frac{b_2}{w} db + \frac{b_3}{w} dH \dots\dots\dots (6)$$

where $w = Z''p^2f_1^2 - Z'pf_{1v}$, $b_1 = Z'f_1 - Z''pff_v$, $b_2 = Z'pf_{b,1} - Z''pf_bf_1$ and $b_3 = Z''pf_1$.

Equation 6 explains how time spent with officials or effective harassment changes because of the changes in bribes, firm bargaining power (p) and regulation burden (H). The coefficient of dH is unambiguously positive because from our assumptions $Z'' > 0$ and $f_1 > 0$, while the bargaining parameter p is at least not negative, so both numerator (b_3) and denominator (w) are positive.

Meanwhile, the coefficient of db is ambiguous since the numerator b_2 can be positive or negative – depending whether $Z'pf_{b,1} > Z''pf_bf_1$ or not. If in addition to $f_{b,1} > 0$, we also assume that $f_{b,1}$ is large enough then the coefficient is positive. In other words, to establish a positive relationship between bribes and time – in the bribing technology f, it is not enough for them to be complement – they must also be a strong complement. Theoretically, it is still possible in (6) to have a negative relationship between bribes and time as postulated by the efficient grease hypothesis. The test of efficient grease hypothesis is tantamount to test empirically the sign of the coefficient db. If the coefficient turns out to be significantly positive, then the efficient grease hypothesis is rejected.

The coefficient of probability changes (dp) is ambiguous since b_1 can be positive or negative. The coefficient b_1 is positive $Z'f_1 - Z''pf_1 > 0$, which implies $p < (Z'/Z''f)$. If p is low, a firm will attempt to increase the share of dispensation by increasing the amount of bribes and negotiation time, provided that $pf_1 > b$. If $p > (Z'/Z''f)$ the coefficient b_1 is negative,

the higher the odds to get larger dispensation the less a firm has to spend on bribes and time.⁸ The sign of a_1 , however, will ultimately be determined from the empirical exercise.

5. EMPIRICAL INVESTIGATION

In this section we employ the SSG results to examine the extent of corruption after the laws of decentralization went into effect. It is unfortunate that the corrupt behavior of local bureaucrats before the laws went into effect could not be compared directly at the firm level to measure the exact firms' behavior changes in response to the changes in bureaucrats' corruption behavior. However, we may still be able to get a picture of the general relationship between the extent of bureaucratic harassment and bribe payment, and also with other firm characteristics, such as size, geographic location etc.

To assess the relationship between corruption and effective bureaucratic harassment in Indonesia, the effective harassment function is estimated econometrically. The theoretical model predicts that because the bureaucrats have discretionary power with given regulation, firms that pay more bribes could still spend more time and therefore facing higher, not lower effective red tape. In the empirical work, the sign of the correlation coefficient between bribes and effective harassment is thus very crucial to determine which hypothesis is supported by the data. The effective harassment is measured by the time spent by management with government officials in charge of licensing and regulation supervision. In the regression equation the effective wasted time is used as a dependent variable to represent the level of effective harassment. The independent variables include bribe rates and other explanatory variables, such as firm size, age, foreign ownership and geographical dummies. The estimating equation is thus,

$$t = a_0 + a_1 B + \mathbf{b} \cdot \mathbf{X} + \mathbf{c} \cdot \mathbf{Y} + \mathbf{d} \cdot \mathbf{Z} + u \dots \dots \dots (7)$$

where t refers to time spent by management with bureaucrats, where the scale of response is from one to six, B is the bribe rates as a percentage of production cost, X is a vector of 'government variables' that influence the relationship between firms and government officials, Y is a vector of 'firm variables', Z is a vector of 'district variables', u is the error term, and a , b , c and d are parameters to be estimated. The hypothesis testing will rely on the sign of the bribe coefficient. If the coefficient is negative and significant, then the data support the efficient grease hypothesis.

⁸ Notice we use the symmetric between 4a and 4b.

6. ESTIMATION RESULTS

6.1. Time Spent with Officials (Effective Harassment)

One econometric issue in the model estimation is the nature of the dependent variable which is an ordered response, ranging from one for 5% time wasted to six for 75% time wasted. This necessitates the use of the ordered Probit procedure. The results for the effective harassment are presented in table 3.

The bribe coefficient is significant at the 5% level and positive so the efficient grease hypothesis cannot be supported by the sample. The magnitude of the coefficient is quite robust in all specifications. The positive coefficient indicates that officials exercise some degree of customization with respect to time delay – paying bribes does not result in lower effective harassment.

The coefficient of age is negative but not significant at the 5 level. Interestingly, the dummy for a new firm is positive and significant at the 10% level. It appears that new entrants wasted more time than older firms. This suggests high entry cost for new players.

Compared to their domestic counterpart, FDI firms did not encounter higher effective harassment as would be expected from their high profile status. From the interviews there was an indication that local officials were reluctant to ask bribes blatantly from FDI firms. FDI firms usually have a domestic partner whose task is primarily to ward off bureaucratic harassment from lower level bureaucrats in exchange for a stream of dividends. These domestic partners could be higher level local officials, military and local dominant party officials. Many countries, including the US, EU forbid their private firms from giving bribes to local officials. The strategy to invite a domestic partner is one way to circumvent this regulation, since realistically it is almost impossible to operate without bribe. Again, as a public relation strategy, FDI firms are also actively involved in 'community development' by providing, for example, local sport facilities, health facilities and so on. This will increase their bargaining power vis-à-vis local officials when it comes to paying bribes.

Firm scale is important in determining the amount of time spent. Corrupt officials tend to prey on smaller medium scale firms rather than on small or large-medium category. The coefficient for smaller-medium scale firms is the largest and significant compared to other firm-size categories (Table 2). The reason is obvious - for officials asking bribes also demand substantial investment in time. Small firms in a highly competitive industry with normal profit have limited ability to pay larger bribes. So asking bribes from small firms are not worth the officials' time.

What is interesting is that large firms also face significant higher harassment compared to larger-medium-scale firms. In the past large firms usually had strong political connections with higher level officials, both local and national, that provide some protection from petty corruption exercised by lower level officials. Also, the local economic impact of large firms was also more visible either through local employment or local taxation. This lent large firms and larger-medium scale firms some leverage to deal with lower level corruption. This strategy may not work anymore - decentralization has weakened some authorities of higher level officials in provinces and in the center. Political connection with officials in high places in the national and provincial capitals may not provide full protection from harassment from district officials. In most cases, this harassment has to be dealt separately, which inevitably increases time spent for negotiation.

There is no indication that exporting firms face higher effective harassment compared to non-exporters. Service firms appear to face higher harassment relative to manufacturing. Hotel and restaurants are considered as having higher sales turnover and are known to keep substantial amounts of 'petty cash' for day to day operations, unlike manufacturing firms whose sales turnover are less frequent. This makes local officials perceive service firms as an easy target for petty corruption.

Although monetarily the total sum is not too large, local retribution is regarded as the biggest nuisance for firms. Not only the rates, but also the number has also been multiplied after decentralization, so it is not too surprising that many miss the deadline for payment and become subject to further extortion. The coefficient of retribution as business obstacles is positive and significant at the 5% level, which means the more difficult is the obstacle, the higher is the time spent on the effective harassment.

The uncertainty with respect to grease money is also high. Respondents, on a one to six scale, were asked to evaluate whether the grease money is predictable - one for very predictable (p is high) and six for very unpredictable (p is low). The coefficient is positive and significant, suggesting that the probability to get dispensation or the bribe efficacy is relatively low or such that firms are forced to increase bribes to improve the outcomes of a negotiation.⁹ The significance of the uncertainty suggests some degree of fragmentation of the bribe collection system. Bribes and red tape are hard to predict since there are too many government agents asking bribes in uncoordinated manner, in particular after the decentralization laws became effective in 2001.

⁹ Theoretically speaking this implies $p < (Z' / Z''f)$.

Table 2
Determinants of Time Spent with Officials (Ordered Probit)

Specifications	Dependent Variables Time Spent with Officials			
	I	II	III	IV
Explanatory Variables				
Bribes	0.01 [3.92]**	0.01 [3.80]**	0.01 [3.84]**	0.01 [3.85]**
Dummy Smaller Medium Firms	0.25 [3.65]**	0.24 [3.53]**	0.26 [3.74]**	0.26 [3.74]**
Dummy Larger Medium Firms	0.09 [1.33]	0.10 [1.47]	0.10 [1.43]	0.11 [1.57]
Dummy Large Firms	0.18 [2.04]**	0.16 [1.79]*	0.21 [2.31]**	0.21 [2.28]**
Dummy Manufacturing Firms	-0.19 [-1.79]*	-0.25 [-2.39]**	-0.24 [-2.30]**	-0.25 [-2.46]**
Dummy Service Firms	0.05 [0.48]	0.04 [0.40]	-0.01 [-0.10]	0.02 [0.15]
Dummy Exporting Firms	-0.02 [-0.27]	-0.02 [-0.23]	-0.04 [-0.50]	-0.01 [-0.20]
Dummy FDI Firms	0.04 [0.42]	0.03 [0.34]	0.02 [0.26]	0.04 [0.44]
Dummy New Firms (Age<=3 years)	0.17 [1.84]*			0.18 [1.95]*
Retribution as Obstacles 1: no problem to 6: very detrimental	0.15 [8.67]**	0.15 [8.17]**	0.15 [8.36]**	0.15 [8.39]**
Uncertainty of Bribes 1:predictable to 6:unpredictable			0.07 [3.38]**	
Dummy Java	-0.15 [-2.51]**			
Distance to Major Business Center		0.07 [2.91]**		
Log RGDP per capita		0.18 [4.59]**		
Village Head Education		-0.003 [-2.32]**		
Dummy Oil Producers				0.19 [2.21]**
No. Observation	1700	1700	1700	1699
LR-Chi2	165.9	188.0	173.3	164.4
Pseudo-Rsquared	0.03	0.04	0.04	0.04

Table 3
Determinants of Number of Licenses (Poisson Regression)

Specifications	Dependent Variables			
	Operational License		New Business License	
	I	II	I	II
Explanatory Variables				
Bribes	0.01 [7.01]**	0.01 [5.55]**	0.01 [8.93]**	0.01 [7.71]**
Dummy Smaller Medium Firms	0.11 [3.32]**	0.12 [3.47]**	0.06 [1.74]*	0.06 [2.05]**
Dummy Larger Medium Firms	0.20 [5.99]**	0.21 [6.24]**	0.17 [5.56]**	0.19 [6.03]**
Dummy Large Firms	0.30 [7.25]**	0.29 [7.10]**	0.21 [5.35]**	0.23 [5.92]**
Dummy Manufacturing Firms	0.14 [2.97]**	0.13 [2.70]**	-0.03 [-0.67]	-0.04 [-0.84]
Dummy Service Firms	-0.01 [-0.28]	-0.03 [-0.66]	-0.12 [-2.76]**	-0.10 [-2.28]**
Dummy Exporting Firms	0.05 [1.46]	-0.04 [-0.53]	-0.06 [-2.07]**	-0.07 [-2.44]**
Dummy FDI Firms	-0.02 [-0.43]	-0.05 [-1.17]	0.09 [2.51]**	0.07 [1.80]*
Dummy Government Equity	-0.15 [-3.18]**	-0.15 [-3.11]**	-0.06 [-1.37]	-0.08 [-1.79]*
Distance to Major Business Center		0.04 [3.41]**		0.04 [4.16]**
Log RGDP per capita		0.06 [3.25]**		-0.04 [-2.23]**
Village Head Education		-0.01 [-9.55]**		-0.005 [-8.59]**
Local Own Revenues per Capita	-0.89 [-5.37]**		-1.06 [-6.64]**	
No. Observation	1333	1333	1333	1333
LR-Chi2	238.3	312.9	198.89	281.6
Pseudo-Rsquared	0.03	0.03	0.02	0.03

The distance variable is positive and significant, indicating that time spent is higher in outlying districts (*kabupaten*). The practice of making the bureaucracy difficult for firms is more pronounced the farther a district is located from major business centers. For this type of officials, the horizon is short - emphasizing on collecting short-term bribe revenues - more often without taking account the district's attractiveness. The education variable proxied by the percentage of villages in a district with the heads having at least high school education seems to confirm this notion. The sign of coefficient points out that districts with more educated officials has lower effective harassment. Bureaucrats in these districts may adopt the principle of 'do not kill the goose that lays golden eggs.'

The dummy for Java is negative and significant – time spent or effective harassment is lower in Java. The education and hence the horizon of bureaucrats mentioned above may explain this result. It is likely that officials in Java due to the history of concentration of economic activity on this island are more familiar with dealing with business.

One factor that may offset the positive effect of education on (less) effective harassment is the size of bureaucracy. More developed regions, as measured by RGDP per capita, tend to have better educated officials and thus are very conducive for business climate, but the size of bureaucracy is also likely to be larger, which increases the likelihood that the amount of bribes will be higher. This is shown by the positive and significant coefficient of the GDP per capita variable. Which effect is stronger is hard to predict a priori, but there should be some optimal size of bureaucracy relative to a district attractiveness.

In the Indonesian context after decentralization, there is a huge difference between resource-rich versus non resource-rich regions with respect to revenues. Literature on the impact of a sudden resource boom on the country's behavior implied that corrupt behavior is worse in resource rich countries (Eifers, Gelb and Tallroth [2002], Auty [2001], Karl (1999) and Gelb [1988]). How the windfall revenues from natural resources affects the behavior of local officials in Indonesia may not be too different from the experience of resource rich countries. Karl (1999) asserted that the sudden increase of natural resource rents could change political and social institutions in a respective country into a rentier state. There are several possible scenarios: the money can be invested in social and physical capital, for example infrastructure, education and health, or it could induce unsustainable excessive consumption or it could create a kleptocratic bureaucracy. While a country could choose an extreme path by becoming a predatory or a corrupt state, it also can follow a mixed scenario – combining some features of the above scenarios.

To assess the impact of natural resource rents on rent-seeking behavior, one variable capturing a district natural resource endowment, the ratio of total RGDP (with oil) to non-oil RGDP is included in the regression. The value of dummy equals to one is assigned if this ratio is greater than one and zero otherwise. The initial hypothesis is that the effective harassment in oil-rich districts is higher than those of non-oil districts. The coefficient of the oil dummy is positive and significant as originally hypothesized.

6.2 Number of Licenses (Nominal Harassment)

We also experimented with nominal harassment i.e. the number of licenses for operational as well as for setting up new business (Table 3). Since the dependent variable is integer with minimum value of zero, it is essentially the count model - so we employ the Poisson regression procedure.

The coefficient of number of licenses both for operational as well as new business is positive and significant, so the efficient grease hypothesis as in the case of effective harassment is not supported (Table 3).

Although the coefficient sign of effective and nominal harassment resembles each other, the results for other variables are different. For both operational and business licenses, the larger is the size, the more licenses are required. This does not mean the effective harassment increases with the size (see Table 2 and previous discussion on large firms).

In the case of operational licenses, manufacturing firms are required to have more licenses presumably due to the environmental concern and potential disturbance (noise for example). Despite this, in term of time spent, service firms face more harassment.¹⁰ The coefficient of service firm dummy also indicates that for a new business in terms of number of licenses, manufacturing is more complicated than service firms.

Interestingly, new exporting firms face less nominal harassment than non-exporters. One possible explanation is that location in export-processing zone may offer some advantages to avoid districts' regulations since some of these have been taken care of by the zone administrators.

Firms with government equity face less license requirements presumably because they have better leverage to waive regulations.

Districts whose pre-decentralization local own revenues (PAD) per capita are low, tend to create more licenses both for operational and new business to increase revenues. Beside the euphoria of decentralization, budget pressure as well the need to improve the welfare of officials i.e. to increase their own salaries, are the primary motivation behind this phenomenon. In this respect, the education level of local bureaucrats is the most important moderating factor. Districts with better educated officials usually introduce fewer new business licenses after decentralization. Better educated officials seem more farsighted to attract new businesses to locate in their respective districts by lowering the number of licenses.

¹⁰ See previous discussion on effective harassment.

7. CONCLUSION

This study assesses the time wasted by firms in dealing with the bureaucracy at the district level, especially after the launching of the decentralization law in January 2001. Unfortunately, this study is only a snapshot since we do not have information on the local official behavior prior to the decentralization.

The finding suggests that the efficient grease hypothesis cannot be supported for both time wasted (effective harassment) and the number of licenses (nominal harassment). The degree of customization of harassment is high, which implies paying bribes or spending time with local officials does not necessarily result in lower red tape. The coefficients of time wasted and the number of licenses (both for normal operation and new business) are positive and significant.

Smaller-medium firm face more harassment than other categories because from the point of view of corrupt officials, the expected bribe incomes are larger than the time cost. Small firms are not attractive enough since the profits are usually small, while large-medium and large-scale firms usually have some political connection with higher officials that offers some protection from the harassment of lower level bureaucrats.

After decentralization retribution is the biggest headache for most firms. Not only the rate increased significantly, but also quantitatively the number continues to multiply to encompass almost all aspects of businesses. Beside the euphoria of decentralization, the weak local tax base also explains why the temptation to create nuisance taxes and retributions is great. The district's attractiveness or competitiveness is not the norm when local officials consider new sources of taxation. One encouraging finding is that education seems to have a moderating impact on the part of local officials' behavior in creating red tape to extract rents.

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