Decentralization and Corruption in Indonesia:

Manufacturing Firms Survival under Decentralization

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Abstract

The main purpose of the paper is to investigate the firm survival in Indonesia from 2003 to 2004. In particular we investigate factors beyond firm death. In the literature of firm survival, the death is defined as firms that are no longer in the 'list', which in the Indonesian context it means no longer in the BPS (Central Statistical Agency) manufacturing directory. But we found that the death firms may not necessarily die after all. In the context of the perceived worsening business climate in Indonesia some firms may choose to become less visible or less formal to avoid harassment from tax officials, to escape from labor regulation, and to avoid paying local tax and levies which become common after decentralization. In the subsequent round of the BPS manufacturing survey, firms whose size fall below 20 workers would likely disappear from the BPS list. Other firms choose less extreme strategy to undergo downsizing. For the central and local governments; point of view this could mean the loss of potential tax revenues. We estimate a probabilistic model where the firm likelihood of becoming smaller status is influenced by firm characteristics, district level variables like bureaucratic harassment, bribery, and the horizon of the local bureaucrats.

I. Introduction: Decentralization and Corruption

From the theoretical standpoint, how decentralization affects corruption is ambiguous. The first view suggests that decentralization leads to greater fragmentation of government decision making power. The breakdown of coordination among bureaucrats may lead to excess rent extraction (Shleifer and Vishny [1993]). In line with this argument, Treisman (2000) found that federalist country have higher rate of corruption due to the problem of 'overgrazing" among different levels of government entities over the same targets. Furthermore, Prud'home (1995) and Tanzi (1996) argued that the low capacity of local bureaucrats in delivering public goods and services may prevent the realization of benefits from decentralization.

The opposite view suggests that decentralization is expected to have moderating impact on corruption, by increasing the role of the local government and accentuating the forces of inter-jurisdictional and political competition (Tiebout [1956, Huther and Shah [1998]), Fisman and Gatti [2002]). Jin et. al (1999) highlighted that competition among localities will discourage governments from adopting interventionist policies – fearing that mobile factors of productions may run away to less interventionist jurisdictions.

There is however a more moderate stance that holds a view that whether decentralization should encourage or discourage bureaucratic rent-seeking would depend on whether expenditure decentralization is accompanied by the devolution of revenue generation to local governments or not (Careaga and Weingast [2000]; Rodden [2000]).

What had happened in Indonesia immediately after the regional decentralization law went into effect in 2001 seems to confirm the first and the third view on the decentralization and corruption relationship. The governance in the local government level, let alone those at the central government, is already bad to begin with. To make the problem more complicated there is a general perception particularly among districts less endowed with oil-mineral resources but possessing sizable manufacturing and service bases that each district is not well funded. The money from the DAU allocation is perceived as less than the contribution of districts to the national economy through corporate taxes (and also personal income taxes) accrued to the central government, but not rebated back to districts.

Although each district has a local tax base, they are generally insufficient to pay even minimal public service level. The chance to make 'side money' out of the development budget is also gone under the new center-local budget arrangement. Hence, each district needs to find other forms of revenues to fund adequate compensation for local officials. The recent law on regional decentralization gives more authorities to districts to create local regulations that are deemed as necessary for the district 'well-being.' So there is opportunity to for localities with more restricted fiscal situation to use regulations and the resulting corruption and bribes as a form of indirect taxation to compensate for the income loss under the new budget arrangement. The use of regulation as a tool to extract bribes has been discussed widely in the literature, for example, Kaufman and Wei (1999), Svensson (2003). In this setting, corrupt bureaucrats customizing regulations to maximize bribe incomes so firms that pay bribes may face more bureaucratic harassment not less.

The most visible impact immediately after the decentralization law went into effect was the race among districts to create new local regulations. The nature of corruption is also changed. The nature of centralized corruption is gone, replaced by a more fragmented bribe collection system where the central government, ministry and local governments, legislative members both at the national and local levels are demanding bribes. At the local government level a number of new local regulations concerning taxes, levies and various types of permits are created to be artificially complementary as a way to extract indirect revenues in the form of bribes, as well as direct revenues (Kuncoro [2004]).

II. Decentralization and Firm Survival

The 1998 economic crisis had been particularly devastating for the Indonesian firms. Faced with the shrinking demand, they had no choice but to adjust their size accordingly in order to remain viable. This is not the end of story, although the economy has somewhat recovered subsequently, they have to face hurdles in many fronts. First is in the area of labor policy. This was the time when the government should have adopted a more flexible labor policy as to give the business sector more breathing space to adjust the size of work force in line with more competitive and uncertain environment (Manning

[2002], Edwards [2002]). Instead the government has opted for more restrictive labor policy which includes minimum wage and severance payment regulation, which effectively increases the cost of labor (Bird and Suryahadi [2002]). On the surface appears to be more pro-labor, but in the long run fact it may hinder firm survivability (Manning [2002]). The Indonesian chamber of commerce (KADIN) has long advocated for a more flexible labor policy by citing the report from various industrial association that many firms were forced to go out of business because the burdens are increasing hard to bear.

Another problem is taxation – no matter how much is the figure of tax liability filled by firms – it always ends up with higher figures demanded by the tax offices. So firms have to bargain to obtain tax forgiveness. From the amount of tax forgiven, our recent pretest interview with 5 medium and large scale firms in the Jabotabek area suggested that tax officials collected under the table amounted to about 30% of the forgiven tax. This is confirmed by Henderson and Kuncoro (2004) which indicates a slightly higher figure of 37%.

The third problem is the excess of the implementation of regional autonomy. 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, came from the fact that a lot of new local regulations especially on taxes, levies and various type of permits are created with the sole purpose of increasing local revenues without considering its adverse effect on businesses 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 artificial complementary permits can go on and on as corruption opportunities stimulate the entry of other permit issuers armed with new regulations (Kuncoro [2004]).

In terms of firm survival this situation can be detected from the figures of net entry (birth rate minus death rate) in the manufacturing. In the firm survival literature the death is commonly defined as if a particular firm is no longer in the list of surviving firms. In the context of the large and medium size enterprises, periodically the Indonesian Statistical Agency (BPS) published a firm directory. If firms disappear from this list,

however it is not necessarily that they are death – so the more appropriate term is actually not death but exit. In the context of the perceived worsening business climate in Indonesia some firms may choose to become less visible or less formal to avoid harassment from tax officials, to escape from labor regulation, and to avoid paying local tax and levies which become common after decentralization. In the subsequent period of BPS survey those firms (not all) would most likely to disappear from the BPS list and classified as 'death' by outside observers.

Employing the annual survey of medium and large manufacturing firms (ASML) we can measure the net entry rate. From 1994 to 1996 the net entry rate of 15.5% (birth rate of 25.7% minus exit rate of 10.2%). The 1998 economic crisis brought a negative entry rate of 1.24% (birth rate of 12% minus exit rate of 13.24%) from the periods 1997 to 1999. The periods 1999-2000 saw some recovery with positive but small net entry rate of 0.44% (birth rate of 5.37% minus exit rate of 4.93%. The measurement of net entry rate the ASML becomes more problematic after 2001, since apparently the firm identifier or PSID has been changed in 2001 by BPS.

III. Data

The firm level data is provided by the Institute of Economic and Social Research, University of Indonesia. Unlike many empirical studies of business climate that rely on perceptions of the extent of bureaucratic hurdles, corruption, regulation burden a country or region, the data set contains information on the general business climate in Indonesia in 2004, for example information on variables like bribes, the frequency of official inspection, the time spent with bureaucrats and so on.

3.1. Sample Characteristics

In terms of employment size, firms are divided into 4 categories; less than 20 employees as 'small', 20 to 100 workers as medium, more than 100 to 500 workers as medium large and above 500 as 'large.' The information on firm size is available for both 2003 and 2004, so potentially we can observe firm growth. Interestingly, although BPS officially destined the ASLM for firms with at least 20 workers, we find from the field that in 2003 in our sample there are about 493 firms out of 2708 or 18.2% employing less than 20

workers. The rest of the sample for the 2003 employment size can be characterized as follows: 1481 firms (54.7%) are medium, 491 firms are medium large (18.1%), and 243 firms (9%) are large (**table 1**). The sample coverage over sub-industry is also satisfactory (**table 2**). The most numerous is food (23.8%) followed by wood and garment, which resembles closely the structure of the Indonesian manufacturing sector, which is predominantly light industries.

In our sample, comparing the 2003 and 2004 employment size – 115 firms or about 4.2% had shrunk their workforce below 20, the minimum size to be listed as medium and large enterprises under the BPS category categorized (**table 3**). Looking at the firm dynamic, for the smaller category, 122 firms shrink their size by 50% or less, while another 150 downsizing its size between more than 50% and 75%, and 454 by more than 75%. Therefore, about 26.8% of firms reduce their employment. The number of expanding firms on the other hand is 635 firms or about 23.4%, while those maintain the original size is 1312 or about 48.4%. Thus, more firms shrink their size than those expanding.[1]

If this size becomes 'permanent'- to continue to employ less than 20 workers - firms in the small category are those who are more likely to exit from the BPS list in the next medium and large manufacturing firm survey to become more 'informal.' The number of small firm is 493 according to the 2003 employment size (**table 1**). In addition from the interview it is revealed that in 2004, 104 medium firms for one reason to another changed their status to 'informal' and to reduce their size to below 20 employees, while the corresponding figures for medium large and large are 5 and 6 respectively (**table 4**).

Small size or informal status is presumably the 'safest' effort category to avoid the harassment of the 'formal' sector bureaucrats. The field interview revealed that many firms in this category spread almost all of their work to cottage industry or household around the plant location. Another interesting observation is that especially in garment, leather, metal works when they are downsizing the severance payment package to long time and lower-middle level employees may include tool and machinery. These laid-off

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[1] We do not know however how the output of expanding firms can compensate for the output loss from the downsizing firms. There is also a possibility that this picture reflects the situation where firms may be more capital intensive as a response to the rigidity of labor regulation, so the smaller size will not necessarily be accompanied by the reduction of the manufacturing sector output.

lower-middle level workers then set up new informal firms taking some other laid-off workers and receiving subcontracting works from their former firms. So in fact they break up the production process into several firms.

Not every one however pursues this strategy - others choose less extreme method to avoid harassment, for example by becoming smaller but maintaining 'medium' status and thus officially are still considered as formal sector. There is a trade-off between being formal and being informal (small). The most obvious obstacle from 'informalization' of a previously formal firm is the difficulty to get credit.

The second reason which perhaps is more important than the first is that most principals, either domestic or foreign, requires a subcontracting firm to have a plant at a reasonable size. The main problem is the quality monitoring, which is impossible to accomplish if the works are spread over to too many households or cottage industries. So a firm face the risk of contract termination (of export order for example) if it decentralizes too much works to outside plant or to go underground to informal sector. Certainly, firms that give many subcontracting works to informal sector could focus on lower-grade products. But as more and more firms choose to go this way, the profits will likely be depressed - so the risks here are also not small.

IV. Firm Exit to Informal Sector and Bureaucratic Harassment: A Simple Model

In order to guide the empirical work, we develop a simple model of firm exit 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,

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

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.[2] We assume that the bribe negotiation technology exhibits the characteristics of $f_b>0$, $f_t>0$, $f_{bb}<0$, $f_{tt}<0$.

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[2] 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 $f_{b,t}$ 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. In 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 higher bribe. In 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, $f_{b,t}>0$.

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

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

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-f(b,t)). By paying bribe, b^*, and spending time t^*, the amount of burdens will be reduced to H-f(b,t), the total costs incurred would be b^*. In other words, since Z is strictly increasing, if Z(H)>Z(H-f(b,t)) then there are some non-zero optimal bribes, b^* such that Z(H)>Z(H-f(b,t))+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,

$$(4a)\quad Z'(H - f(.)).f_b(.) - 1 = 0$$

$$(4b)\quad Z'(H - f(.)).f_t(.) = 0$$

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 functions,

$$(5a)\quad b = b(H)$$

$$(5b)\quad t = t(H)$$

If we totally differentiate (4b) with respect to t, b and H, we obtain after rearrangement

(6) $$db = \frac{Z'f_{bt} - Z''f_t f_b}{Z''f_b^2 - Z'f_{bb}} dt + \frac{Z''f_b}{Z''f_b^2 - Z'f_{bb}} dH$$

In equation 6 the coefficient of *dH* is unambiguously positive because from our assumptions Z">0 and f_t>0. Meanwhile the coefficient of *dt* is ambiguous since the numerator can be positive or negative – depending whether Z'f_{bt}>Z"$f_t f_b$ or not. If $f_{b.t}$>0, and big 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 strong complement.

If the increase of the regulation/tax burden H increases bribe incomes, then what limits the temptation of officials to charge high bribe. The limit is firm exit so the official also bears some risk of losing bribe income. We assume that firms have an option to exit to informal (less formal) sector to avoid regulation burden. This can also be viewed as a moderating mechanism that prevents the model from producing unreasonably high bribe.

Suppose that a firm has a choice either to operate as a medium firm in a formal sector (j sector) or in a less formal sector (k sector). The post bribe firm profit in the formal sector j is given by

(7) $$\Pi_j = R_j(N_j) - Z(H_j - f(b_j, t_j)) - b_j$$

Where $R_j(N_j)$ is the pre-bribe profit and N_j is the number of firm in the formal sector in a particular location. Notice that we can also model the possibility that firms moves to other location seeking for less harassment but the model will become more complicated which is beyond the scope of this paper. For convenience we suppress the subscript for the location. We assume that $R_j'(N_j)$<0, in other word the average firm profit in the formal sector will be lower as more and more firms enter. The same assumption will also hold in the informal sector. Totally differentiating (7) we obtain

(8)

$$R_j'dN_j - Z_j'dH_j + (Z_j'f_b - 1)db_j + (Z_j'f_t)dt_j = R_k'dN_k - Z_k'dH_k + (Z_k'f_b - 1)db_k + (Z_k'f_t)dt_k$$

Employing equation (4), imposing Nash perceptions at equilibrium by the official in the formal sector j that dH_k, db_k, dt_k = 0, and having the official recognize the national constraint on number of firms so that $-dN_j = dN_k$, we obtain,

(9) $\quad \dfrac{dN_j}{dH_j}\Big|_{\Pi_j} = -\dfrac{Z_j{}'}{(-R_j{}'-R_k{}')} < 0$

The numerator is positive since Z'>0 meanwhile the denominator is positive since R'<0, so the whole expression is unambiguously negative. As the burden of regulation/taxation/harassment H increases, the cost will rise and the profit will be reduced that induce firms to leave the formal sector j. But there is a limit – the increase of number of firms in the less formal sector k will depress per firm's profit as the number of firms increases. Furthermore, the fewer is the number remaining firms in the formal sector the higher is per firm's profit which discourage firms from leaving.

It also can be shown that the impact of bribes on firm exit is given by

(10) $\quad \dfrac{dN_j}{db_j}\Big|_{\Pi_j} = \dfrac{Z_j{}'f_b - 1}{(-R_j{}'-R_k{}')}$

The numerator can be positive or negative so the sign of the above expression is ambiguous. Bribe will add more burden to the firm if the numerator is negative or $Z_j{}'f_b<1$, which means that the value of f_b is small. The expression f_b reflects the effectiveness of bribe to reduce burden in the negotiation technology f(b,t) - the less effective is the bribe to reduce the burden the lower is f_b - which implies that the numerator of (10) is more likely to be negative, hence the equation (10) is negative. If bribe is ineffective, it increases cost but it has little effectiveness to reduce burden, so for firms it is not worthwhile to pay bribe. This will induce firms to exit to the less formal sector. It is also possible however that bribe will have good 'greasing' effect to limit exit to the informal or small firm sector which is possible only if f_b is large.[3]

We can include the cost of time in the cost function so the new expression for the bribe cost in equation (3) will become

(11) $C = Z(H - f(b,t)) + b + d.t$

where d is the cost per unit of time spent in the negotiation to reduce burden. With this specification the counterpart of (10) is given by

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[3] What will happen if $Z_j{}'f_b>1$ such that the expression (10) will be positive which means bribe will invite entry. The interpretation is that in this situation the bribe system is highly transparent that it is almost equal to user charge. For illustration, some kabupatens start to introduce fast lane (jalur cepat) and normal lane (jalur biasa) with different fees for the license processing. This increases tremendously the certainty of the bribe collection system. Some of the proceeds from the fast lane are eventually distributed to kabupaten employees as part of the salaries.

$$(12) \quad \frac{dN_j}{dt_j}\Big|_{\Pi_j} = \frac{Z_j'f_t - d}{(-R_j' - R_k')}$$

In line with equation (10), the time spent by firm to negotiate for less burden will be worthwhile if the sign of (12) is positive and this only happen if $Z_j'f_t > d$ or if the marginal effectiveness of negotiation time is higher than its perceived unit cost.

V. Empirical Investigation

5.1. Firm Survival/Growth

We attempt to capture the relationship implied by equation (9), (10) and (12). From previous description it is clear that not all firms choose to become smaller to escape harassment. To capture this, we employ a simple Probit procedure. A score of one is assigned to firms that choose to become smaller and zero otherwise. The estimating equation is

$$(13) \quad \Pr ob(I) = \mathbf{b}.\mathbf{X} + \mathbf{c}.\mathbf{Y} + \mathbf{d}.\mathbf{Z} + u$$

where I is an indicator variable which conform the scoring given above.

Some firms opt for less extreme measures; keeping the same size or postponing expansion, or even to grow bigger. So there is a list of response which depends on the external factors and firms' characteristics. For this reason we also estimate a continuous version of (13) - employing firm growth as the dependent variable. If a firm keeps the same size from 2003 through 2004, then its growth is zero. The nature of the dependent variable which is truncated at zero necessitates the use the Tobit procedure. The counterpart of equation (13) is given by,

$$(14) \quad FRMGRW = \mathbf{b}.\mathbf{X} + \mathbf{c}.\mathbf{Y} + \mathbf{d}.\mathbf{Z} + u$$

where FMGRW is firm employment growth between 2003 and 2004.

For explanatory variables, $\mathbf{X}$ 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 definitions of the government-related, firm-related, and district-related variables hypothesized to determine the bribe rate are as follows:

Government-related variables

There are three explanatory variables in (13) related to local government—*bribe payment, share of local taxes (collected by local government) to district GDP and share of the central government general transfer received by district to local GDP*—reflect government-related aspects of the environment faced by firms.

Bribe Payment

Respondents were asked how much money they put aside to pay bribe to local government as a percentage of annual production cost. The hypothesis in equation (10) is based on equation (10) if bribe only to add to the cost without easing the burdens then it will only make firms to choose smaller size or becoming less formal. In similar fashion if in equation (14) the coefficient is hypothesized to be negative the higher is bribe.

Firm-related variables

Export Orientation

Exporters need to be as competitive as possible, bureaucratic harassment, corruption and problem associated with labor will increase cost. To escape all of these they can go 'underground' becoming less informal at the risk of loosing customers. For some if circumstances force them – for the sake of firm survival they may for just that at the expense of export. Others however may choose to stay formal. Accordingly, the sign of the export dummy cannot be determined a priori. Firms' export orientation is represented the ratio between exported output to total output.

Import Dependency

A firm with high dependency on imported input may be vulnerable to macroeconomic volatilities stemming from exchange rate movement. Also, it may also subject to extortion from custom officials. Import dependency is measured by the ratio of imported input to total input. For this reason at least in the Indonesian context, it is hypothesized import ratio has an inverse relationship with firm survival or firm growth.

Size

To control for firm size four dummy variables based on the amount of fixed capital are introduced. A firm is categorized as small in terms of capital if the fixed capital is less than Rp. 500 million; a medium 1 if it is at least Rp. 500 million but less that Rp. 1 billion; a medium 2 if it is at least Rp. 1 billion but less than Rp. 5 billion; a large 1 if it

is at least Rp. 5 billion but less than Rp. 20 billion and large 2 if the fixed capital is at least Rp. 20 billion or above. How size relate to firm growth cannot be determined in a priori, it will depend on the estimation results. In the estimation, the small category will serve as reference.

Industry Type

Different industries may have different propensities to survive – to become smaller or to grow bigger. To capture this we introduce industry dummies.

FDI firms

FDI firms may have different survival traits, to control for this a dummy variable is differentiating them from their domestic counterparts is used.

District-related variable

Fiscal Situation

The fiscal situation in particular regency may influence the predatory behavior of officials. In the post-decentralization, local own revenues from local taxes and levies (PAD=Pendapatan Asli Daerah) are generally insufficient to meet budgetary needs. The new program, the general purpose transfer (Dana Alokasi Umum=DAU) is designed to meet the gap although it may not be sufficient Local governments impose regulations in part to allow local officials to collect bribes to supplement their salaries. In this context, an increase in transfer revenue sources will reduce harassment, since local governments would then need to rely less on harassment, which tends to drive firms to the informal/small sector. Thus the coefficient in (13) is expected to be negative. To capture the impact of fiscal situation on the firm exit we experiment with several variables such as the percentage share of government sector in regency's GDP, the share of general purpose transfer fund (DAU) in district's GDP as well as the share of local own revenues.

5.2. Bribe and Harassment Functions

To assess the empirical relationship implied by equation (5a), the following equation is estimated,

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

where *B* is the level of bribe payments, **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 variable, *u* is the error term, and *a*, **b**, and **c** are parameters to be estimated. As an alternative to bribes in equation (15) one can employ frequency of Visits/Inspections by local officials. This variable measures the burden of bureaucratic harassment faced by a firm not in terms of money but in the form of real harassment.

The estimation of bribe/harassment model uses some of the set of explanatory variables mentioned above. In addition, some district level variables are added.

Official's Education

The official education is represented by the education of district head – whether he or she has a college degree or not. Alternatively, we can also use the level of general education in a location for this variable - in particular we use the percentage of village head within a district with at least having high school education. Education level of officials may put some restraint on predatory behavior. In this instance, in order not to 'kill the goose that lays golden eggs', officials may request smaller bribes, do less harassment and so on in the expectation that firms will live and stay longer in the regency and to contribute for future (bribe) incomes. We hypothesize that a location with better official's education would have smaller exit rate, thus the coefficient in (13) should be negative.

Distance from plant location to district center

As corrupt bureaucrats extort money from firms, they also incur costs. The farther plant location from district center the higher may be the cost. So if the expected bribe income is less than perceived cost then it is not worthwhile for bureaucrats to visit firms. The sign of the coefficient however cannot be determined in a priori. If most firms are located in the district center then the sign may be negative, but if they are more spread out the coefficient cannot be judged before hand.

Coastal Locations

Firms located in coastal regions may not need to pay large amount of bribe when transporting goods because their locations are closer to ports. Accordingly, the relationship between bribe and coastal locations is assumed to be negative – the more

'coastal is a location the lower is the bribe. For this variable we use the percentage of coastal villages within a district.

Stock of Firms

The total number of firms located in bureaucrats' district will affect the bribes charged to firms. If there are many firms in the area, there is no need for officials to charge bribes excessively, so an area with higher stock of firms may have lower bribes, which potentially can attract many more firms to locate. For this reason, the number of firms per land area is expected to have negative relationship with bribes/harasssment.

VI. Results

6.1 Probability to become smaller

Table 5 presents selected descriptive statistic of explanatory variables used throughtout in the estimation. **Table 6** presents the result of the probit estimation of firm probability to become smaller. All coefficients have been recalculated to reflect marginal effects. The coefficients for the medium2, large 1 and large2 are significant so these types of firms are evidently trimming their workforce. None of the industry dummies are significant, which suggest in terms of probability, choosing smaller size occurs more or less uniformly across all industries. Meanwhile, ratio of imported input to total input is significant at the 10 percent level, so those with high import dependency are a little more vulnerable or more likely to adjust their workforce downward.

The coefficient of bribe payment is highly significant which implies that bribes have no greasing impact to ease regulation burden – they only add to costs. Equation (10) implies that bribes are also endogenous which means if bribes are too burdensome then more firms will exit which potentially will lower bribe incomes. Taking into account this situation, the probit instrumental variable (IV) procedure is performed. The instruments are distance from plant to district center, percent of coastal villages in a respective district, ratio of number of manufacturing firm to land area in a district and ratio of local taxes and levies to district's GDP. The coefficient bribe in the IV specification is larger and significant at the 5 percent level – strengthening the bribe effect which has adverse effect on firm – forcing them to become smaller – presumably to avoid detection from corrupt officials.

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Local taxes and levies have positive coefficient suggesting that they also cause firms to become smaller, but unlike bribes the coefficient here is not significant. Bribes can be considered as informal taxation. So this result indicates that with respect to firm survival, formal local taxation is less harmful than soliciting informal payment through bribes.

6.2 Firm Growth

Table 7 presents the result for firm growth. Higher export orientation appears to be very important for growth. But at the same time higher import dependency has retarding effect on growth. This suggests that high export orientation and low import dependency seem to be the key factors if a firm is going to maintain robust growth.

The negative and significant coefficient for textiles-garments-footwear and wood signify the trouble being faced by these industries. Textiles have been competing with low cost producers such as China and Vietnam. Rising labor cost as well as unfriendly labor regulations have undermined Indonesian competitiveness in these sectors. In the case of wood, the issues of deforestation and illegal logging have made it more difficult for firms to procure raw materials. At the same they have to face competition from China whose products are made from smuggled woods from Indonesia.

Looking at size dummies, it appears that category 1 large firms are experiencing more growth compared to other sizes. Next to the smallest category, medium firms I seems to be stagnant. While the other two, medium firms II and large firms II show some growth although it looks less impressive compared to large firms I.

The coefficient of the bribe variable is negative only in the IV results (Table 7), but it is significant. Interestingly, bribe is not the factor that inhibits growth. What more important is local taxes. The coefficient of local taxes share in GDP is negative and significant at the 5 percent level in both ordinary and IV Tobit procedures. Noticing that bribes affect firm informalization in the probit regression, one possible interpretation is that bribes are only harmful for firms that are already in difficult situation to begin with. Bribes speed up the process whereby firms choose to become smaller to avoid additional burden. In the meantime, local taxes and levies may put some drag on presumably still

healthy firms in the formal sector, but not to the point where firms choose less formal form to avoid them.

A better budget situation for local government would improve firm growth. There are two avenues through which local government budget could affect firm growth. First, with more money in the budget there is a little reason for officials to prey on firms through harassment or customization of regulation. Although it may not lower the corrupt behavior if not accompanied by strong law enforcement for the offenders, it provides ground for the scenario where government cuts unnecessary regulation so firms can thrive in the formal sector. In turn, additional tax revenue could be used to raise government officials' salaries by more than these individuals' loss of incomes from harassment activities. In time, more and more firms may emerge from the underground which increase further the tax base.

6.3 Bribe Payment

Previous exercises suggest that bribe payment is one important factor that drives firms to choose less formal status. But what factors determine bribes. To sort out this we estimate equation (5a). **Table 8** presents the estimation results.

With respect to paying bribes there is no difference between FDI versus non-FDI firms and exporting versus non-exporting firms. There is also non-linearity in bribe payment. Looking at the coefficient for size dummies, bribe payment appears to increase with the size – to reach its peak for medium firms type I – and then gradually declines.

There is bribe differential across industries. In particular, wood and chemicals pay higher bribes. For wood the problem is related to illegal logging. Obtaining raw materials is difficult. Even if they are purchased legally, bribes more often have to be paid. There is always inspection from the forest service and police to verify that the raw materials are not from illegal logging. Without bribes any wood can be declared as illegal. Meanwhile, higher bribe paid by chemical industry is related to the nature of inputs which are classified as hazardous materials by custom regulation. Again bribes must be paid to resolve the matter, regardless whether they are dangerous or not.

The coefficient for the Chinese ownership is positive and highly significant. Chinese entrepreneur have long be subjected to bureaucratic harassment. Chinese owner definitely pay higher bribes compared to other entrepreneurs considered as indigenous.

Three district variables, distance from plant to district center, percent of coastal villages and ratio of manufacturing firm number to land area, can actually be used to asses the degree of 'rationality' on the part of bureaucrat when collecting bribes. The distance variable has never been significant perhaps reflecting a situation where most firms actually located very close to each other at the proximity of district center. The coefficient of ratio of firm number to land area is negative and significant at the 5 percent level. So bribe per unit of firm falls as the number of firms increases, reflecting the advantage of locations that from the beginning have been blessed by high stock of firms. From the point of view of bureaucrats, it is also beneficial to have large stock of firm since they can have higher bribe income without having to price bribe per unit of firm too high.

Firms located in coastal districts appear paying lower bribes. There are two possibilities. First, firms may not need to pay large amount of bribes because they do not need to travel through many retribution posts. Second, overall bureaucrats in coastal area charge lower bribes. There is very little reason why bureaucrats in coastal areas differ from those in hinterland. But bureaucrats in coastal areas may have sufficient exposure to business practices for long time, due to the fact that industrial agglomeration tends to occur in coastal regions.

The coefficient for district head's college education is negative and significant at the 5% level. More educated official would likely charge somewhat lower bribes and demanding less time. 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.

Again the fiscal situation of local government is also important. Better fiscal situation could mean less reason for local bureaucrats to harass firms for income supplement. The coefficient of the share of general purpose transfer within district's GDP is positive and significant at the 10 percent level.

6.4 Officials Visit as Bureaucratic Harassment

In this experiment we estimate relationship implied by equation (5b). For the dependent variable there are two alternatives. First, we can use time wasted by a firm to negotiate with officials. The second possibility is to employ a real harassment faced by firm. In this estimation we opt for the second alternative where the dependent variable is the frequency of visits/inspections by local officials. The estimation result is presented in **table 9**.

It seems that exporting firms are the target of official visits. The coefficient is highly significant in all three specifications. Export oriented firms in Indonesia tend to be labor intensive. Inspecting factory to check equipments' safety is the job of labor office. Firms presumably have to pay fines or alternatively bribes if there are faulty machinery and equipment. All size dummies are significant of which the category of large firm 1 has the largest coefficient. None of industry dummies are significant suggesting that inspection take place more or less equally for all.

The coefficient of Chinese ownership is significant at the 5 percent level confirming the result from the bribe regression that Chinese pay higher bribes and is also suspected to face more harassment from officials.

From the bribe regression we asserted that officials in coastal regions may behave differently that is charging lower bribes compared to those in hinterland. This assertion has some support here. The coefficient of percent of coastal villages within a district is negative and significant at the 10 percent level. Another interesting finding related to this is that officials' education has quite strong impact on the propensity for harassment. The coefficient of district head with college education is negative and significant at the 5 percent level. The level of harassment is evidently lower in districts having more educated head. Since this is the education of district head not the education attainment of

all officials in general, this is also suggests the importance of leadership in lessening corrupt behavior.

The results for fiscal impact resemble the bribe regression. Districts with better allocation of general transfer from the center are less inclined to harass firms. This of course does not ensure that they will not extort money through other means, but at least firms can save their valuable time by not having to serve officials in factory visits.

6.5 Experiment with Perception Based Variables

From previous description it is clear that not all firms choose to become small to escape harassment. Some firms opt for less extreme measures; keeping the same size or postponing expansion, or becoming smaller. So there is a gradual 'escalation' of response which depends on the external factors and firms' characteristics. For this reason we employ the ordered Probit procedure. A score of one is given for firms that choose to maintain its size; two is given for those choose to downsize its size; and finally three is for firms choosing to become small (less than 20 employees). **Table 10** presents the result of this experiment.

The coefficient for the impact of decentralization is positive, which means it tend to encourage firm exit to the informal sector, but it is only significant in specification 4. This variable captures the general perception of respondents on decentralization – obviously decentralization still pose problem for business - although we need to ask more specific questions to ascertain what aspects of decentralization that are really bad for business, which we pursue subsequently.

The impact of minimum wages on business is unambiguously to encourage informalization. The coefficient is positive and significant at 5 percent level in all specifications, and relatively larger compared to others. The nature of the estimation procedure allows us to capture different degree of informalization - from less extreme response such as downsizing to a more extreme one of exiting to the informal sector. Downsizing may also involve some forms of subcontracting to the small firm/informal sector or cottage industry.

Evidently, one form of the negative impact of decentralization is bureaucratic harassment by local officials. The coefficient of the frequency of local officials' visits to

firms is positive and significant at the 10 percent level in all specifications. The sign of the coefficient agrees with the prediction of the theoretical model that harassment will encourage firms to become less formal.

The positive and significant coefficient of the bribe variable suggests that the efficacy of bribe appears to be low. As implied by the equation (10) a negative and significant coefficient would imply that bribes have greasing effects to reduce regulation burdens and thus exiting to or choosing less formal form of firms may not be necessary. 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 negotiation. But this only adds more burdens to firms without in return bringing any benefits. The low mean for bribe rates in **table 5** is perhaps the consequence of the ineffectiveness of bribe, which make firms reluctant to pay bribes.

For a firm, land and building taxes (PBB) represent burden as well as harassment. Although for households paying PBB may not be a big deal, for a firm it allows local tax officials to inspect a firm's fixed asset. The tax officials' version of estimated amount of tax liabilities will be likely higher than a firm's estimate, which opens a room for a 'negotiation.' The coefficient is positive indicating adverse impact of these taxes on firm exit, but it is statistically insignificant.

Time spent with bureaucrats is the counterpart of bribes in the negotiation technology $f(b,t)$. The time spent with bureaucrats can be 'investment' or waste - depending on whether it can effectively reduce burdens or not. The coefficient is positive and insignificant which means as in the case of bribes, it is largely ineffective.

The coefficient of the time needed to set up a new business is positive and significant at the 10 percent level in three specifications. This indicates that the attitude of local officials toward new businesses may not be so favorable. If this is true it is hard to imagine that they will be more favorable toward existing businesses.

The coefficient for *village head education* is positive but insignificant at the 5% level. Locations with more educated officials do not show any differences with other with less education when comes to firm exit. At first, based on the previous exercise, we expect that education would lessen the firm exit since more educated official would likely charge somewhat lower bribes and demanding less time.

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As shown in the previous exercises, a better budget situation would lessen the need of officials to supplement their incomes from harassment. We experiment with two variables: the share of the general purpose allocation in regency GDP and the share of government sector in regency GDP. Both coefficients are negative and significant at the 5 percent level. In other words, if money is available in the office then there is a little reason for officials to prey on firms through harassment or customization of regulation. Although it may not lower the corrupt behavior if not accompanied by strong law enforcement for the offenders, it provides ground for the scenario where government cuts unnecessary regulation so firms can thrive in the formal sector. In turn, additional tax revenue could be used to raise government officials' salaries by more than these individuals' loss of incomes from harassment activities. In time, more and more firms may emerge from the underground which increase further the tax base.

Conclusion

Not so long ago, many economic observers were so concerned with the phenomenon of deindustrialization where firms are disappearing fast at an alarming rate, which was confirmed by the decline of the industrial output index. We found that the problem is more complex than that that. What appears as deindustrialization is perhaps more appropriately called as informalization of the Indonesian manufacturing industry.

Immediately after the economic crisis firms faced multiple burdens in the form of labor policy, negative excesses of decentralization and taxation. In the context of the perceived worsening business climate in Indonesia the only way to survive is to become less visible or less formal to avoid harassment from tax officials, to escape from labor regulation, and to avoid paying local tax and levies which become common after decentralization. Technically these firms would be classified as death under the BPS definition of medium and large manufacturing. Under these circumstances, besides downsizing to become less formal and less visible, we found that choosing a small status is perhaps the safest if not the extreme way to avoid harassment from the 'formal' sector officials.

The harassment of local officials in search for income supplement is the second reason behind the informalization of the manufacturing industry. It is found that the

improvement of budget situation that provide local bureaucrats with potential income would lessen the need to prey on firms through harassment. This provides ground for the scenario where government streamlines unnecessary regulation so firms can grow in the formal sector, which can be taxed to raise government officials' salaries by more than enough to compensate the loss income from harassing firms.

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Table 1: Distribution of firm size

Size Category	Number of Firms	% of Firms
Small (<20 workers)	493	18.2
Medium (20 to 100 workers)	1481	54.7
Medium Large (>100 to 500 workers)	491	18.1
Large (>500 workers)	243	9.0
Total Sample	2708	100

Source: calculated from the 2005 CODB

Table 2: Distribution of the sample across sub industry

Sub Industry	Number of Firms	% of Firms
Food	645	23.8
Beverages and Tobacco	219	8.1
Textile	194	7.2
Garment	263	9.7
Footwear, Leather and Luggage	93	3.4
Wood and Wood Products	423	15.6
Paper and Printing	99	3.7
Soap, Plastic, Rubber and Pharmaceutical	218	8.1
Non-Metallic Mineral (Cement, Ceramic)	214	7.9
Metal, Fabricated Metal, Metal Products	193	7.1
Machinery, Electrical Machinery, Transportation, Tool, Office Equipment, Computer and Communication Equipment	81	3.0
Others	65	2.4
Missing industry code	1	
Total	2708	100

Source: calculated from the 2005 CODB

Table 3: Firms changed status to 'small' in 2004

Size category	Number of firms	% of firms out of total sample
Medium (20 to 100 workers)	104	3.8
Medium Large (>100 to 500 workers)	5	0.2
Large (>500 workers)	6	0.2
Total number of firms changed status	115	4.2

Source: calculated from the 2005 CODB

Table 4: Firm dynamic 2003-2004: smaller, same, or growing larger

Category	Number of firms	% of firms
At least 50% of original size	122	4.5
> 50% to 75% of original size	150	5.5
>75% to <100% of original size	454	16.8
Same size	1312	48.4
Growing larger	635	23.4
Missing values	35	1.3
Total sample	2708	100.0

Source: calculated from the raw data of the 2005 CODB survey

Table 5: Descriptive statistic of selective variables

Variables	Mean	Standard Deviation
Employment size 2003	169.5	513.6
Employment size 2004	168.2	507.7
The Frequency of visits by local officials	6.5	9.9
Bribe Payment to Local Officials (as % of production cost)	1.7	4.4
Time Spent with Local Bureaucrats (scale – one: <5% to six: more than 75%)	1.3	0.6
Time Needed to set up a New Business (scale – one: < 1 month to six: > 3 years)	1.7	0.9
Firm Age (years)	18.9	14.6
Percentage of general purpose allocation fund (DAU) in local GDP	6.5	4.5
Percentage of local tax and levies in local GDP	0.7	0.4

Source: calculated from the 2005 CODB Survey

Table 6: Probit model to become smaller: marginal effect

Explanatory variables	Probit		IV Probit	
	I	II	I	II
FDI firms	0.037	0.035	0.035	0.030
	[0.94]	[0.89]	[0.86]	[0.75]
Ratio of export to output	0.0001	0.0001	0.0001	0.002
	[0.34]	[0.50]	[0.40]	[0.63]
Ratio of imported input to total input	0.001	0.001	0.0007	0.001
	*[1.71]	*[1.68]	[1.41]	[0.93]
Bribe Payment (as % of production cost)	0.003	0.003	0.029	0.017
	**[3.24]	**[3.20]	**[8.57]	**[2.83]
Food	-0.016	-0.015	-0.017	-0.016
	[0.26]	[0.24]	[0.30]	[0.27]
Textile, garment, leather and footwear	0.060	0.058	0.059	0.059
	[0.96]	[0.92]	[0.93]	[0.95]
Wood and wood products	0.084	0.085	0.071	0.057
	[1.32]	[1.33]	[1.12]	[0.90]
Chemical products	-0.010	0.008	-0.019	-0.016
	[0.10]	[0.12]	[0.30]	[0.24]
Non metallic	0.070	0.075	0.067	0.066
	[1.01]	[1.07]	[0.95]	[0.95]
Metal	0.035	0.036	0.030	0.028
	[0.51]	[0.52]	[0.45]	[0.41]
Machinery	-0.057	-0.054	-0.052	-0.038
	[0.75]	[0.71]	[0.74]	[0.51]
Medium firm 1	-0.002	0.002	-0.013	-0.020
	[0.06]	[0.07]	[0.80]	[0.67]
Medium firm 2	0.072	0.070	0.051	0.027
	**[2.28]	**[2.23]	[1.63]	[0.75]
Large firm 1	0.084	0.089	0.067	0.053
	**[2.17]	**[2.29]	*[1.72]	[1.26]
Large firm 2	0.160	0.162	0.149	0.138
	**[3.13]	**[3.14]	[2.71]	**[2.50]
Share of local taxes and levies in GDP	-2.408	-	-1.759	
	[0.95]	-	[0.61]	
Share of general purpose transfer in GDP	-	59.47	-	220.88
	-	[0.28]	-	[0.90]
No. Observation	2447	2472	2447	2472
LR-Chi-Squared	**81.80	**80.76	**144.10	**94.20

Note: ** significant at 5 percent; * significant at 10 percent

Table 7: Firm growth

Explanatory variables	Tobit		IV Tobit	
	I	**II**	**I**	**II**
FDI firms	**0.020**	**0.040**	**0.026**	**0.087**
	[0.17]	[1.22]	[0.21]	[0.65]
Ratio of export to output	**0.003**	**0.003**	**0.003**	**0.003**
	**[3.50]	**[3.44]	**[3.41]	**[2.91]
Ratio of imported input to total input	**-0.003**	**-0.004**	**-0.003**	**-0.002**
	**[2.08]	**[2.18]	[1.49]	[1.03]
Bribe Payment (as % of production cost)	**0.001**	**0.0003**	**-0.015**	**-0.072**
	[0.19]	[0.09]	[0.29]	[1.31]
Food	**-0.240**	**-0.234**	**-0.235**	**-0.202**
	[1.38]	[1.35]	[1.35]	[1.06]
Textile, garment, leather and footwear	**-0.446**	**-0.455**	**-0.440**	**-0.436**
	**[2.51]	**[2.56]	**[2.47]	**[2.24]
Wood and wood products	**-0.425**	**-0.425**	**-0.395**	**-0.272**
	**[2.38]	**[2.38]	**[1.98]	[1.24]
Chemical products	**-0.197**	**-0.208**	**-0.166**	**-0.074**
	[1.01]	[1.07]	[0.76]	[0.31]
Non metallic	**-0.343**	**-0.323**	**-0.340**	**-0.282**
	*[1.75]	[1.64]	*[1.71]	[1.31]
Metal	**-0.301**	**-0.288**	**-0.291**	**-0.227**
	[1.52]	[1.47]	[1.45]	[1.04]
Machinery	**-0.113**	**-0.112**	**-0.128**	**-0.169**
	[0.50]	[0.49]	[0.55]	[0.67]
Medium firm 1	**0.075**	**0.062**	**0.104**	**0.193**
	[0.80]	[0.66]	[0.80]	[1.38]
Medium firm 2	**0.170**	**0.165**	**0.218**	**0.388**
	*[1.77]	*[1.73]	[1.18]	**[1.98]
Large firm 1	**0.376**	**0.383**	**0.409**	**0.546**
	**[3.37]	**[3.45]	**[2.41]	**[3.06]
Large firm 2	**0.275**	**0.266**	**0.294**	**0.333**
	*[1.89]	*[1.83]	*[1.83]	*[1.92]
Share of local taxes and levies in GDP	**-17.279**	-	**-21.14**	
	**[2.10]	-	**[2.11]	
Share of general purpose transfer in GDP	-	**0.0004**	-	**0.001**
	-	[1.28]	-	**[2.01]
Constant	**-0.593**		**-0.533**	**-0.887**
	**[3.37]		**[2.68]	**[3.41]
No. Observation	2425	2450	2425	2450
LR-Chi-Squared	**53.48	**49.98	**51.24	**43.81

Note: ** significant at 5 percent; * significant at 10 percent

Table 8: Determinants of bribe payment

Explanatory Variables	Specifications		
	I	II	III
FDI firms	1.50	1.61	1.60
	[1.51]	[1.62]	[1.61]
Exporting firms	1.02	1.07	1.02
	[1.55]	[1.61]	[1.55]
Medium 1	3.48	3.52	3.52
	**[4.53]	**[4.54]	**[4.58]
Medium 2	5.33	5.54	5.39
	**[6.76]	**[6.98]	**[6.87]
Large 1	4.76	5.00	4.69
	**[4.93]	**[5.16]	**[4.87]
Large 2	2.86	3.04	2.69
	**[2.24]	**[2.38]	**[2.11]
Food	0.82	0.90	0.68
	[0.50]	[0.54]	[0.41]
Textile, garment, leather and footwear	0.17	0.43	0.28
	[0.10]	[0.26]	[0.17]
Wood and wood products	3.54	3.60	3.55
	**[2.14]	**[2.16]	**[2.15]
Chemical products	3.88	4.08	3.78
	**[2.17]	**[2.27]	**[2.11]
Non metallic	2.01	2.10	1.95
	[1.12]	[1.16]	[1.08]
Metal	1.62	1.89	1.43
	[0.90]	[1.04]	[0.79]

Machinery	0.18	0.43	0.19
	[0.09]	[0.20]	[0.09]
Chinese owner	3.27	3.41	3.14
	**[4.37]	**[3.46]	**[4.19]
Distance to district center	0.02	0.03	0.02
	[0.88]	[1.39]	[0.91]
% of villages in the coast	-4.01	-4.43	-3.17
	*[1.90]	**[2.06]	[1.49]
Ratio of manufacturing firms number to land area	-1.87	-2.25	-1.91
	*[1.86]	**[2.22]	*[1.90]
Share of general purpose transfer to GDP	-11.32	-	-
	*[1.71]	-	-
Ratio of local taxes and levies	-	69.60	-
	-	[0.98]	-
District head with college degree	-	-	-1.78
	-	-	**[3.40]
No. Observation	2477	2477	2477
LR-Chi-Squared	**205.09	**198.59	**213.15

Note: ** significant at 5 percent; * significant at 10 percent

Table 9: Determinants of harassment (visits by official)

Explanatory Variables	Specifications		
	I	II	III
FDI firms	0.32	0.46	0.46
	[0.36]	[0.53]	[0.52]
Exporting firms	2.63	2.74	2.71
	**[4.61]	**[4.76]	**[4.75]
Medium 1	3.62	3.70	3.67
	**[5.56]	**[5.62]	**[5.64]
Medium 2	4.73	5.06	4.89
	**[6.85]	**[7.27]	**[7.10]
Large 1	5.18	5.49	5.23
	**[6.06]	**[6.40]	**[6.11]
Large 2	3.64	3.99	3.66
	**[3.32]	**[3.62]	**[3.32]
Food	-1.41	-1.38	-1.47
	[1.01]	[0.98]	[1.05]
Textile, garment, leather and footwear	-1.73	-1.40	-1.41
	[1.22]	[0.98]	[1.00]
Wood and wood products	-2.04	-2.01	-2.01
	[1.44]	[1.41]	**[1.42]
Chemical products	-0.92	-0.64	-0.82
	[0.60]	[0.42]	[0.53]
Non metallic	-2.23	-2.15	-2.22
	[1.46]	[1.39]	[1.45]
Metal	-2.08	-1.81	-2.02
	[1.34]	[1.17]	[1.31]

Machinery	1.70	2.07	1.98
	[0.95]	[1.15]	[1.10]
Chinese owner	1.51	1.73	1.46
	**[2.40]	**[2.70]	**[2.31]
Distance to district center	-0.02	-0.01	-0.02
	[1.40]	[0.65]	[1.20]
% of villages in the coast	-3.02	-3.24	-2.34
	*[1.66]	*[1.74]	[1.27]
Ratio of manufacturing firms number to land area	0.92	0.47	0.69
	[1.09]	[0.55]	[0.82]
Share of general purpose transfer to GDP	-16.92		-
	**[3.46]		-
Ratio of local taxes and levies	-	51,56	-
	-	[0.84]	-
District head with college degree	-	-	-1.33
	-	-	**[3.07]
No. Observation	2635	2477	2635
LR-Chi-Squared	**254.17	**198.59	**251.61

Note: ** significant at 5 percent; * significant at 10 percent

Table 10: Keep the Same size, to be smaller or to become less than 20 workers

	Coefficients			
Model specification	I	II	III	IV
Explanatory variables				
Problems with Decentralization	**0.04**	**0.04**	**0.05**	**0.05**
(1: no problem to 6: very bad)	[1.41]	[1.38]	[1.59]	[1.77]*
Problem with Severance Payment	**0.08**	**0.08**	**0.08**	**0.07**
(1: no problem to 6: very bad)	**[3.27]	**[3.28]	**[3.20]	**[3.00]
The Frequency of Visit by Local Officials	**0.01**	**0.01**	**0.01**	**0.01**
(Number of Visits/Inspection per Year)	*[1.82]	*[1.82]	*[1.84]	*[1.86]
Bribe Payment	**0.01**	**0.01**	**0.01**	**0.01**
(as % of annual production cost)	*[1.80]	*[1.78]	*[1.81]	[*1.76]
Land and Building Tax	**0.001**	**0.001**	**0.001**	**0.001**
(in Rupiah)	[1.33]	[1.38]	[1.24]	[1.22]
Time Spent with Local Bureaucrats	**0.01**	**0.01**	**0.01**	**0.001**
	[0.16]	[0.17]	[0.11]	[0.01]
Time Needed to Set Up a New Business	**0.06**	**0.06**	**0.10**	**0.06**
(in days)	*[1.68]	*[1.66]	[1.48]	[1.60]
Firm Age	**0.001**	**0.001**	**0.001**	**0.001**
	[0.51]	[0.51]	[0.53]	[0.48]
% of Village Head with High School Ed.		**0.001**		
		[0.50]		
Share of Government Sector in GDP			**-0.60**	
			**[3.08]	
Share of general purpose transfer in GDP				**-0.28**
				**[3.05]
No. Observation	1430	1430	1430	1387
LR-Chi-Squared	**47.41	**47.67	**60.88	**59.37

Notes: Figures in parentheses are t-ratios
** significant at 5 percent; * significant at 10 percent

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