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"SICK OF LOCAL GOVERNMENT CORRUPTION? VOTE ISLAMIC"

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ABSTRACT

Indonesia has a tradition of corruption among local officials who harass and collect bribes from firms. Corruption flourished in the Suharto, pre-democracy era. This paper asks whether local democratization that occurred after Suharto reduced corruption and whether specific local politics, over and above the effects of local culture, affect corruption. We have a firm level data set for 2001 that benchmarks bribing activity and harassment at the time when Indonesia decentralized key responsibilities to local democratically elected governments. We have a second data set for 2004 on corruption at the end of the first democratic election cycle. We find that, overall, corruption declines between these time periods. But specific politics matter. Islamic parties in Indonesia are perceived as being anti-corruption. Our data show voting patterns reflect this belief and voters' perceptions have some degree of accuracy. In the first democratic election, localities that voted in legislatures dominated by secular parties, including Megawati's party, experienced significant relative increases in corruption, while the reverse was the case for those voting in Islamic parties. But in the second election in 2004, in those localities where corruption had increased under secular party rule, voters "threw the bums out of office" and voted in Islamic parties.

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Sick of Local Government Corruption? Vote Islamic.[1]

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Abstract: Indonesia has a tradition of corruption among local officials who harass and collect bribes from firms. Corruption flourished in the Suharto, pre-democracy era. This paper asks whether local democratization that occurred after Suharto reduced corruption and whether specific local politics, over and above the effects of local culture, affect corruption. We have a firm level data set for 2001 that benchmarks bribing activity and harassment at the time when Indonesia decentralized key responsibilities to local democratically elected governments. We have a second data set for 2004 on corruption at the end of the first democratic election cycle. We find that, overall, corruption declines between these time periods. But specific politics matter. Islamic parties in Indonesia are perceived as being anti-corruption. Our data show voting patterns reflect this belief and voters' perceptions have some degree of accuracy. In the first democratic election, localities that voted in legislatures dominated by secular parties, including Megawati's party, experienced significant relative increases in corruption, while the reverse was the case for those voting in Islamic parties. But in the second election in 2004, in those localities where corruption had increased under secular party rule, voters "threw the bums out of office" and voted in Islamic parties.

In 1999 Indonesia democratized; and in 2001 with fiscal decentralization, local democracy took full flight. Democratization was imposed on a regime which in the late 1990's was ranked consistently as among the most corrupt in the world (Bardhan, 1997 and Mocan, 2004). A significant portion of corruption occurs at the local level, where local government officials collect bribes to supplement their salaries: at the time of decentralization in 2001, our data indicate that bribes paid to local officials averaged 6% of costs for manufacturing firms. This paper examines two key questions. Did democratization with decentralization reduce (or increase) corruption at the local level per se? Second, do specific politics in the form of local legislature composition matter? With democratization, corruption in Indonesia has become a commanding political issue, manifested in exposés in the press, indictments, and political campaigns (McLeod, 2005). Our key finding will be that districts which voted in greater proportions of Islamic party representatives to the local assembly experienced much greater reductions in corruption. While the results are specific to local governments in Indonesia, they hint at broader implications for the effect of democratization on corruption and the role of Islamic parties in political processes.

We start with the nature of politics in Indonesia and the timing of political events and our surveys. In 1999 Indonesia held nation-wide elections, where local as well as national assemblies

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were elected. The share of representatives of each party in local assemblies is proportional to their share of the vote in local elections. Local assemblies were elected in 1999 in anticipation of decentralization in January 2001, which occurred as planned with key governmental functions such as education and administration of many national regulations being turned over to the local district (kabupaten) governments, bypassing provincial governments. Kabupaten in Indonesia are similar to USA counties, but with full responsibilities for local services.

Under current laws, all local parties must be national parties. In 1999 there were 5 (out of a total of 40) major political parties, 2 of which are secular—GOLKAR, the former ruling party under Suharto, and Megawati's PDIP party. These two parties play a key role in our analysis. Other significant parties have Islamic roots and are viewed as less accepting of corruption than secular parties. While the dominant Islamic party, PKB, has not made corruption its national platform issue, our fieldwork suggests that it is viewed as substantially less corrupt at the local level than secular parties. Another Islamic party (PKS) has emerged as a major party on an anti-corruption platform focused on corruption associated with the secular parties. The 1999 national elections led initially to a coalition government between Megawati's secular party, PDIP, and the main Islamic party, PKB, with the first President, Abdurachman Wahid, drawn from PKB.

Our first survey took place in fall 2001, benchmarking corruption at the dawn of decentralization, or full local democratization (Kuncoro, 2003, World Bank, 2003). But 2001 also was the year when the national coalition between PKB and Megawati's PDIP party fell apart, with Megawati taking over as President, after Wahid was impeached. After that, at the local level, PDIP often aligned with the other major secular party, GOLKAR. Our second survey was carried out in early 2005 and covers information on corruption in 2004. In late 2004, the Megawati period ended with the direct election of Susilo Bambang Yudhoyono as President, following the second round of elections (in a five year election cycle) of representatives to national and local assemblies. We observe that local government corruption drops substantially between 2001 and 2004. We link that reduction to decentralized democracy, not with Megawati assuming office, since Megawati's party during 2001-2004 was associated with corruption, in line with results from our data. However we note that we don't know for certain what happened between the fall of Suharto in 1998 and 2001. A prevailing view is that from 1998-2001, it was "business as usual" (Kuncoro, 2003, World Bank, 2003), but our results are specific to the 2001-2004 interval.

Why would a regime switch to local democracy matter? While legislative measures can potentially affect corruption (Olken, 2005), in Indonesia there haven't been significant new legislative measures (World Bank 2003, Chapter 3). But there is greater enforcement of existing laws, in a context where corruption is now a major political issue. In the new, democratic era,

under a freer press, newspapers write exposés (Brunetti and Wider, 2003); young and ambitious local prosecutors make reputations through official investigations and indictments; firms and local offices of the national chamber of commerce can lobby legislators to protect firms from harassment and to discipline local officials; and local political parties may gain votes with anti-corruption stances. As part of this process the national government created several anti-corruption agencies and commissions. A further element is that with decentralization, elected officials may try to deter corruption to attract local investment, in the context of inter-jurisdictional competition for firms (Brueckner and Saavendra, 2001, Henderson and Kuncoro, 2004, Fisman and Gatti , 2002 and Mocan, 2005). In terms of regime switches, the economics literature discusses the notion of multiple equilibria under corruption (Cadot 1987, Andvig and Moene, 1991, Tirole 1996, Bardham 1997), based on information asymmetries, intergenerational reputation modeling, or punishments versus rewards when corrupt officials are few versus many.

Our notion of the effect of the regime switch follows Mookerjee and Png (1995), who analyze the effects of increasing punishments of corrupt officials. Significant increases in punishment deter bribe solicitation and amounts, especially in a context like Indonesia where the firms being solicited may turn officials in. With expanded opportunities for redress, officials may reduce bribe demands, so firms find it cheaper to pay the bribe than make the effort to seek redress. In addition, democratization may induce a change in the local corruption environment, through greater local social sanctions against corruption with more public scrutiny of illicit activity and firm owners increasingly refusing to pay bribes. While we associate corruption reductions at the local level with decentralized democracy, there is always a problem of separating regime switch effects from effects of unobserved changes in other accompanying conditions. Thus much of our focus will be on the effects of specific local politics—the impacts on corruption of legislature composition in the competitive political environment.

Why might local assembly composition matter (Pettersson-Lidbom, 2003)? In Indonesia, opportunities for redress are related to whether local assembly representatives support corruption reduction. We hypothesize that redress opportunities for firms and the direct and indirect punishment costs for corrupt officials rise and the level of corruption declines as the proportion of district representatives from Islamic parties rises. Direct punishment costs include dealing with complaints, indictments of an official or their boss, loss of job, or hindering of career advancement. Indirect costs include local social sanctions faced by corruption officials, where the local corruption environment may be affected by the attitude towards corruption within the local assembly. Moreover career law enforcement officials may feel freer to pursue corruption cases at the local level with the political backing offered by Islamic representatives. An objection to the

idea that Islamic parties deter corruption is that the cross-country literature argues that Islamic countries are more corrupt (e.g., Mocan, 2004). That fact is difficult to disentangle from the fact that they are generally also much less democratic and ruled by secular regimes, with a less developed "rule of law"; and it says little about within country effects of religious and political differences across regions.

The real difficulty in evaluating the role of Islamic parties is to disentangle local assembly composition effects from the effects on bribe solicitation of "local culture". There are two distinct, not well correlated aspects to district culture: devoutness of the population and the corruption environment at the time of democratization. Our fieldwork suggests that today devout Muslims are distinctly less willing to pay bribes; and, ceteris paribus, some sects of devout Muslims are more inclined to vote for Islamic parties. But if devoutness affects bribing and vote choices, that makes the role of Islamic parties more difficult to assess, regardless of whether they are taking anti-corruption stances as strategic political choices or as an expression of their own devoutness. One needs to disentangle whether corruption differences across districts occur because of differences in Islamic parties' representation in local assemblies or differences in devoutness of voters. Although this is an obvious problem to worry about in identifying assembly composition effects, when we turn to discussing our identification strategy, the more difficult problem will concern the prevailing local corruption environment at the time of decentralization. Our data suggest this environment was unrelated to measures reflecting local devoutness. But there is still the identification problem that districts which for idiosyncratic reasons had a history of more corruption may have a different, unobserved attitude towards bribing that also is correlated with their voting behavior.

Our surveys are constructed to elicit information about bribing activity involving local officials. We are not focused on the other major forms of corruption—bribes paid to reduce corporate income tax liabilities, issuance of FDI or export/import licenses for large firms, and police extortion. All these involve national officials; and the first two mostly very large firms. We are focused on day-to-day corruption involving local officials that eats away at almost all firms.

1. Red Tape, Harassment, and Bribes

What is the nature of local corruption? In Indonesia, firms are required to obtain a variety of locally set licenses and "retributions". Officials from the local Ministry of Industry monitor firms to make sure they have the full array of licenses and that all are up-to-date. Officials from the local Ministry of Labor inspect licenses and equipment in connection with safety regulation.

Visiting plants purportedly to inspect and monitor is the basic form of harassment used by officials to elicit bribe payments. The creation of red tape through licensing has a long history in Indonesia, with efforts in the mid-1990's by the central government (encouraged by the World Bank) to curtail the array of licenses in order to encourage foreign and domestic investment. However, immediately following the national decentralization legislation in 1999, localities, in anticipation of decentralization in 2001, felt empowered to create a greater array of licenses and retributions, with sharper limits on the time licenses are valid before needing renewal.

Firms pay bribes for several reasons. When a license is up for renewal, bribes reduce waiting time to renewal and harassment when a license has expired. Bribes are paid to get officials out of the plant who are there in the guise of inspecting licenses and ensuring equipment safety. Similarly bribes are paid to placate officials, who claim a plant needs a license that in fact is not required. Since 2001, empowered by a national "pro-labor" ministerial directive which greatly strengthened the application of pro-labor laws, other bribes (which we record separately) to local labor officials are paid by firms to resolve disputes over severance and overtime pay in their favor and to have strikes declared illegal (albeit in an open shop environment). While this is a separate source of bribe activity, it feeds into the first, since inspection of licenses and equipment safety allows labor officials to sniff around plants for hints of labor troubles.

One could categorize this bribe activity to reduce the harassment from regulations under the efficient grease hypothesis (Liu 1985, Becker and Maher 1986, Bardhan 1997, and Cai, Fang, and Xu 2005), with the caveat, however, that localities are imposing regulations, so local officials can demand bribes (e.g., Banerjee, 1994, and Kaufman and Wei, 1998). Harassment is costly because it takes up the entrepreneur and her managers' time (Kaufman and Wei, 1999, Svennson, 2003, and Henderson and Kuncoro, 2004). In Henderson and Kuncoro (2004) we argue that, on the eve of decentralization in 2001, bribes were part of compensation packages of local officials. Corruption was greater in localities that had limited fiscal resources, with bribes being a form of indirect taxation to supplement the salaries of local officials and bring them up to competitive market wages.[2]

[2] Both before and after decentralization, localities received most of their revenues as transfers from the central government, with localities having little de facto independent means of raising revenue. The fiscal situations are detailed in Henderson and Kuncoro (2004). Since decentralization, the fiscal situation is in flux, with new spending responsibilities of local governments, new sources of transfers with formulas undergoing on-going adjustment, and new developing sources of local revenues, in particular a sales tax. Moreover the imposition of local democracy and the development of local anti-corruption campaigns have changed the whole environment, as discussed above.

To motivate the empirical analysis we discuss a very simple model. Firms and local officials who harass them each have their own optimization problem. Firms seek to maximize profits where

$$\begin{aligned} &\max_{X,b} \Pi_i = p_j y(X_i, h(v_{ij}, l_{ij}, b_i, \theta_{ij})) - W_j X_i - b_i \\ &\text{where } y_X > 0;\ y_h < 0;\ h_v, h_l > 0;\ h_b < 0. \end{aligned} \tag{1}$$

In equation (1), firm i faces a price, p_j, for its product sold in locality *j*. Its output *y* is produced with inputs chosen by the firm, X_i, at prices, W_j in district *j*; but output is reduced by harassment, $h(\cdot)$, experienced by the firm, which takes up the entrepreneur's time and may create discontent in the factory. $h(\cdot)$ is specified as a "black-box" process that involves some underlying game (Henderson and Kuncoro, 2004) . But the outcome, $h(\cdot)$, is declining in bribes, b_i, offered by the firm to make officials leave and is increasing in (costly) visits, v_{ij}, by officials in district *j* to firm *i.* Harassment is increasing in red tape, or licenses and retributions, l_{ij}, required by district *j* of firm *i*. Finally there is a vector of observed and unobserved items affecting harassment, θ_{ij}, such as how adept the entrepreneur is at dealing with local officials, idiosyncratic greed of local officials, religious convictions of the entrepreneur, socio-political climate in the district, and redress opportunities available to firms that face bribe demands.

Optimizing with respect to choice of bribes, bribes are censored at zero if $y_h(\cdot)h_b(\cdot) < 1$ at $b_i = 0$; and bribes are given by the implicit function from $y_h(\cdot)h_b(\cdot) - 1 = 0$ so that

$$b = b(p_j, X_i, l_{ij}, v_{ij}, \theta_{ij}). \tag{2}$$

We expect the level of bribes to be increasing in v and l; but ensuring that in the model requires restrictions on the functions such as $y_{hh}, h_{bb} \geq 0,\ h_{bl}, h_{bv} \leq 0$.

For local officials, their choice of number of visits is based on the optimization problem

$$\max_v \ E[b(\cdot)] - c(v_{ij}, l_{ij}, d_{ij}, e_i, \varepsilon_{ij}), \tag{3}$$

for $b(\cdot)$ given in (2). d_{ij} is vector of items affecting the cost of officials' visits such as the distance from the officials' location in jurisdiction *j* (the district capital) to firm *i*; e_i is any characteristics of the firm (over and above l_{ij}) which legitimately require officials to visit the firm; and ε_{ij} are other aspects that affect the costs of visits, such as censure from local legislators concerning harassment or the extent to which local officials "are expected" to make up salary deficits from

competitive wages through bribes. From the first order condition $E[b_v(\cdot)] - c_v(\cdot) = 0$, we can specify a visit equation

$$v_{ij} = v(l_{ij}, d_{ij}, e_i, X_i, \varepsilon_{ij}, \theta_{ij}) . \qquad (4)$$

We estimate equations based on (2) and (4) in the last sections of the paper. In doing so, one issue is what firm characteristics can be treated as exogenous. It is clear in (2), that from (4), v_{ij} is endogenous, where potentially either d_{ij} or elements of e_i not in X_i in (4) can be used as instruments in estimation of (2). However, what about l_{ij}, or even X_i, especially given the notion that officials impose red tape to generate bribes? We follow two approaches in estimation. In the first, while we treat visits as endogenous, we assume, red tape, l_{ij}, is pre-determined before the regime switch in 2001 by (a) the industry the firm is in, (b) regulations enacted in districts in late 1999 and 2000, and (c) firm size at the time these regulations were introduced. In this version, one problem is that our instruments for v_{ij} are weak. Another is that firm licensing and retribution requirements may not be strictly pre-determined. But we only have weak instruments for these measures as well, because, in any district, licenses are determined by firm characteristics that also may affect bribes and visits and we have no cross district measures that adequately explain cross district variation in licenses in 2004.[3]

Our second approach is a reduced form one, where we replace l_{ij} and v_{ij} by their determinants, which are mostly firm characteristics; and focus just on the overall effect of politics on bribe activity—both the direct effect and any indirect effect through visits and license requirements. Our primary results involve this reduced form approach. For bribes, the reduced form is

$$b = b(p_j, X_i, e_i, d_{ij}, \tilde{\theta}_{ij}), \qquad (5)$$

where $\tilde{\theta}_{ij}$ contains observed and unobserved local political-cultural considerations affecting bribe activity. Finally we also worry about whether firm characteristics, X_i, are affected by local cultural and political conditions; and, while we do not have strong instruments to predict these, we experiment with certain even more reduced form specifications.

[3] In 2001, licenses were more connected to fiscal circumstances and a district's need for revenues to pay employee compensation through bribes received (Henderson and Kuncoro, 2004).

The remaining econometric issue concerns how to identify the role of politics, aspects of which are observed, separate from the local culture, which is largely unobserved. We state our identification strategy after we discuss our data and the context in more detail.

2. Data, Specifications, and Econometric Issues.

We utilize two corruption surveys. In the first conducted in late 2001, a team under Ari Kuncoro chose a random sample of 1808 enterprises in 64 districts on Java and other major islands of Indonesia. The survey environment was carefully constructed, using qualified locals as interviewers (dialect and social issues).[4] The key questions concerned the fraction of costs devoted to bribes paid to local officials to "smooth business operations" and the main forms of red tape, in particular the number of business licenses (locally set and issued) required of each firm in their particular district. Licenses may be required to start a business, export, make noise, create congestion, pollute in different dimensions, operate particular kinds of machinery, and so on. The mean number of licenses per firm (including service and retail firms) was 5.8 and the standard deviation 5. There were a number of qualitative questions. One concerned the difficulties firms have with "retributions and levies" required to operate an escalator, water pump, generator, and the like. Another concerned a then relatively new phenomenon—difficulties with labor troubles. On firm characteristics, fieldwork strongly indicates that firms are cagey, willing to reveal bribe information under appropriate interview circumstances, but unwilling at the same time to then reveal much detailed economic information. In the first survey, firm size was measured by sales in discrete categories. These data are analyzed in Henderson and Kuncoro (2004).

For this paper, as noted, the 2001 survey provides a benchmark on the degree of corruption at the time of decentralization. In early 2005 we conducted a second survey to assess corruption in 2004. The second survey differed in aspects of sample design and questions. It covered only manufacturing firms and it covered only and all of Java. 2707 firms were interviewed. While there are 105 districts in Java, 2 are essentially national parks and 6 have

[4] In the Indonesian political context, in more remote areas, the team sometimes recruited a representative from the (non-governmental) local chamber of commerce to accompany surveyors to interviews to help stimulate an Indonesian "conversation among friends", so firms were more forthcoming in revealing bribe information. Local offices of the chamber of commerce in the Suharto era played a complex role. Apart from a primary function of promoting local business, they also provided an outlet for local political discontent about government policy and practices among business owners. Compared to other parts of Indonesia, on Java where the current work is focused, less use of these representatives was made in 2001, and little use was made in the 2004 survey work.

almost no manufacturing. These second 6 are integrated into surrounding areas to define 97 districts that we look at. In terms of overlap with the first survey, overlap occurs for 37 districts and 178 firms (in 24 of those districts). Finally the second survey is not entirely random. We over-sampled in districts with low populations of firms with a target of a minimum of 20 responses per district[5] and we over-sampled in 3-4 districts with large numbers of original firms, in order to increase firm sample overlap.

The survey for 2004 asked specifically about the number of "levies and retributions" a firm faces (mean of 2.6), as well as the number of licenses (mean of 6.4). Besides bribes to local officials "to smooth business operations" affected by red tape, which we call "red tape" bribes, we asked a second bribe question about bribes paid to local labor officials in dealing with strikes, severance terms, minimum wages, and over time pay, which we call "labor bribes". As we will see, the first type of bribe declined significantly between 2001 and 2004, while the second (presumed to be new since 2001) made up some portion of the difference. One could interpret this in a Shleifer and Vishny (1993) framework as competition between labor and industry ministry officials leading to a division of bribes associated with industrial activities. But the presumption is that more bribes will be generated in this circumstance. There are more officials to harass firms and complementary dimensions on which to harass; labor officials sniffing around for labor troubles can incidentally also harass firms over licensing and safety.

In the second survey we sought more detailed economic data, getting "exact" firm employment and recording sales and capital stock information in interval form. In asking bribe questions, we worked with the surveyors to distinguish between firms who truly paid zero bribes, versus firms who were uncomfortable providing an answer (only 73 out of 2707 firms). Finally in 2005 we asked the "exact" number of visits made by local officials to the plant in 2004, a variable we interpret as the key form of harassment.

Specifications and econometric issues

In estimation, we focus on two relationships—bribes which firms decide to pay and visits which local officials decide to make. For bribes, our measure is bribes as a share of costs—in principle equation (2) or (5) divided by the cost function for the firm. Experimentation suggested a very simple form:

$$\text{bribe/costs} = C(X_i) + \beta_1 \ln(\text{no. licenses+retributions}) + \beta_2 \ln(\text{no. of visits}) + P(Z_j) + \eta_{ij} \qquad (6)$$

The $C(X_i)$ function captures cost effects and any firm-specific bribe related characteristics, such as whether the owner is a Chinese Indonesian, traditionally subject to more harassment. $P(Z_j)$

[5] The lowest number in our 97 districts is 16.

relates to political conditions which might signal resistance to making bribes or unwillingness to press for them. η_{ij} represents unmeasured components of local tastes, the political process, local officials, and entrepreneurs. In (6) we lump the count of licenses and retributions together; separately they give similar results. The visits equation has a similar form as we will see later; and the issues for estimation of the two are similar.

In general we estimate equation (6) by a Tobit specification, treating zero bribe responses as a censoring problem. This seemed the simplest and a commonly accepted approach. We will also report 2SLS results on key specifications; and later in the section on robustness we report separate discrete-continuous choice results. Estimation does not account for selectivity in location decisions: the effect of corruption on where firms locate. For example, firms adept at dealing with local officials may be more willing to choose corrupt areas. We do not have the data to model selection but we believe it is not an issue. In our data, the 2001 regime switch leaves relative bribing activity in districts in 2001 and 2004 uncorrelated (see later). That would suggest most firm locations, characteristics, and license requirements are determined prior to the conditions driving 2004 harassment-bribe activity in districts. Only 5% of our firms were born after 2001 (and dropping them does not change results).

Political Variables.

The key econometric issue involves political variables. We hypothesize that greater local assembly shares of representatives from the secular parties, PDIP and GOLKAR, in the Megawati era positively affect bribing. Results where we replace PDIP-GOLKAR by the share of votes held by the key "anti-corruption" Islamic parties, PKB and PKS, mirror the ones we get, given the two are highly negatively correlated (-0.70). We choose the PDIP-GOLKAR share simply because we have direct instruments for votes for these two parties (see below).

As noted above, the identification issue is that greater representation from PDIP-GOLKAR may be correlated either with voters' personal tastes concerning corruption related to devoutness or with the local corruption environment. The local corruption environment involving bureaucrats and local firms in 2001 is not related to devoutness measures, but arises from more idiosyncratic aspects of district history and administration. Our key measure of local devoutness is the ratio of Islamic to state elementary schools in a district in 1990, reflecting religious attitudes of voters in 1999. That taste measure has a zero correlation coefficient (-.01) with the initial corruption environment, measured by average bribe activity in 2001,[6] but is strongly

[6] We also have another measure of devoutness, the ratio of small prayer-houses to mosques. In devout areas where people want to do regular daily devotions, rather than commute repeatedly to the mosque in the

correlated with PDIP-GOLKAR vote shares (-.38).[7] As we will see, areas which voted more heavily for PDIP-GOLKAR in 1999 tended to have initially relatively *lower* levels of corruption (-.20). It may be that in high corruption areas people were already prepared to vote Islamic in the hope of changing the local environment; or it may be in less corrupt areas, people were more willing to vote for secular parties, not perceiving corruption as such an issue. For the latter, voters in these areas were then subsequently "surprised" by an increase in corruption relative to other areas, after 2001. We will present data which suggest that districts that "were cheated on" and experienced increases in corruption then voted against secular parties in 2004. All this discussion means that PDIP-GOLKAR vote shares are correlated with unobserved aspects of local culture that affect bribing and we need instruments that are unrelated to both devoutness and the initial corruption environment.

Instruments draw upon aspects of Java history and culture (Liddle, 1999 and Vatikiotis, 1998). The first deals with voter views on the role of Islam in politics per se, which affect party vote, but are separable from devoutness or the initial corruption climate. On Java, there are abangan and santri Muslims, both of whom may be equally devout (i.e., potentially opposed to corruption). But abangan are less traditional and orthodox, historically having incorporated in home practices aspects from Buddhism and Hinduism (two religions that at different times dominated parts of Java). The distinction in terms of religious practices and identification of who is santri versus abangan is blurred today with a general increase in religiosity over the last 30 years; and decades ago santri Muslims broke into two groups: traditional (more rural) and reform, where the latter favored a more individual interpretation of the Quran. For us there are two key distinctions: (i) abangan Muslims are more averse to the existence of Islamic parties, to incorporating Islam into politics, and, thus, to voting for Islamic parties; and (ii) they tend to live in non-coastal areas, more in the hinterland of Central and East Java where Buddhism and Hinduism once flourished. So the first instrument for vote share is the fraction of population in 2000 in a district living in villages that are on the coast (noting Java is a long, narrow island), indicating populations that are more willing to vote for Islamic parties, independent of the local corruption environment or devoutness.[8]

For other instruments, one of the secular parties, GOLKAR, draws strength from (mostly former) government employees, who worked for the Suharto regime in 1990 and out of loyalty

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village center, they build small prayer-houses nearby to reduce their "commuting costs" and, perhaps also, to signal their devotion. The simple correlation coefficient between bribes in 2001 and prayer-houses is .10.

[7] Correlation coefficients are calculated with district level data where the sample is 87 if avg. bribe activity in 2001 is not one of the variables and 30 otherwise.

[8] The simple correlation coefficients of percent living in coastal villages with PDIP-GOLKAR, avg. bribe ratio in 2001, and the devoutness measure are -.34, .063, and .13 respectively.

tend still to vote for GOLKAR. This very small fraction (1.9%) of the population is a strong instrument for GOLKAR and seems corruption neutral, meaning (i) that it is not correlated with bribing (is not a significant regressor on its own, does not significantly affect the coefficient on the PDIP-GOLKAR variable, and has a simple correlation coefficient with initial bribe activity of -.086) and (ii) specification tests on orthogonality of residuals to instruments pass readily.[9] Finally, for instruments, PDIP is partially an outgrowth of an amalgam of parties forced in the Suharto era, which included the traditional Christian parties. While the numbers are small (average 4.3%), the fraction of the population that is Christian in 1995 is a strong instrument for PDIP vote share in 1999. The fraction Christian noticeably raises Sargan values in specification tests on certain formulations or appears as a significant covariate in some ordinary Tobit formulations, noticeably affecting the coefficient on PDIP-GOLKAR variable (although not our base case in Table 5 below).[10] In general we rely on just the first two instruments.

As we will detail later in the section on robustness, we experiment directly with adding controls for district devoutness, including the Islamic school measure. In IV estimation these measures do not play a significant role, so we don't focus on them here. But there is one element of the local political process we haven't discussed. That is the selection of local leaders.

After democratization in 1999, the local district premiers, or bupati's, start to be elected by local assemblies in time staggered elections (over a 5 year horizon across districts). Before that bupati's were bureaucrats appointed by the center. Starting in late 2004, bupatis as their staggered terms end are now elected by direct popular vote. But in the time period we are looking at, they were elected by local assemblies. We know the sponsoring party in each assembly of the elected bupati. Some bupati's are the same bureaucrats who held the job before and some are new to the position. We think of the position being much like a city manager in the USA appointed by a local city council, where some are professionals and some political figures. From simple probit analysis, the chances that a selected bupati was sponsored by PDID or GOLGAR is increasing in the PDID-GOLKAR vote share in 1999. However there is absolutely no discontinuity in the selection process—as, for example, when one or both parties top 50% of the vote or attain a plurality. Indonesian politics is strongly affected by the notion of "consensus", so sharp

[9] In the basic ordinary Tobit result in Table 5, column 5 below, the PDIP-GOLKAR coefficient (standard error) in an ordinary Tobit (with clustered errors) is .0842 (.0369). Adding in the two instruments, changes the PDIP-GOLKAR coefficient to .0827 (.0417) with coefficients (standard errors) on the percent government employee and percent coastal variables of .628 (.418) and -.0316 (.0639) respectively. In the basic IV Tobit result in Table 5, column 4, the PDIP-GOLKAR coefficient (standard error) is .199 (.0897). If we drop the percent government employee as an instrument so the model is just identified the coefficient rises to .231 (.0904).

[10] We note its simple correlation coefficient with 2001 avg. bribe is -.36, so it is related to the initial culture of corruption.

discontinuities may be less likely. Moreover in corruption estimation below, controlling for PDIP-GOLKAR vote share, which party sponsored the bupati has no affect on corruption per se. While we hoped bupati selection would be an important element in corruption which would allow for a regression discontinuity analysis (van der Klaauw, 1999), this possibility did not bear fruit.

The notion of consensus will be important in thinking about results. PDIP-GOLKAR has over 50% of the vote in 71% of our districts, although a single party only holds the majority in 11% of districts. In 29% of districts, PDIP-GOLKAR has over 60% of the vote and in 13% under 40%. We will argue that effects are linear in vote share, with no discontinuity such as at 50%. The climate of corruption just gets increasingly worse continuously as the secular parties' combined vote shares rise and they increasingly dominate the "consensus". In the section on robustness we will discuss non-linear and discontinuous specifications in detail.

Finally we note that, in examining political effects, we do not have recorded vote shares for all districts. Due to its designation as a national capital region, Jakarta has provincial status and a provincial assembly and its 5 districts have no local assemblies. Second, in 5 other of our 97 districts, votes were not published; generally there was some controversy about the voting in those districts. While numbers were released informally at the time to determine legislative shares, these shares are not in the public record and so far we have been unable to uncover them. Thus identification of legislature composition effects is based on 87 districts.

3. Results: The Effect of Democratization on Corruption, 2001 versus 2004.

We start by examining changes in corruption between 2001 and 2004, using two over-time comparisons. One is for 178 firms which overlap in our two time periods: 2001 at the time of decentralization, and 2004 at the end of the first election cycle and Megawati's rule. Second we have 37 districts in which we surveyed in both 2001 and 2004. We pool all manufacturing firms surveyed in these districts, to compare 2001 and 2004 behaviors. These first exercises show us correlations in the data. Towards the end of this section we start to deal with identification of causal effects and then in section 4 we focus on trying to establish a causal link between corruption and Islamic party shares.

Individual Firm Differences over Time.

Table 1 gives tabulations for the 178 firms which overlap samples. In Table 1 first we look at bribing activity connected with red tape. In the comparison, in 2001, people reluctant to answer the bribe question were given a zero while for 2004 they were a given a missing value. So in the first row we know that a maximum of 128 firms paid bribes in 2004, while in 2001 a

minimum of 136 paid bribes. The second line is even more revealing. For those reporting bribes, bribes as a share of costs fell dramatically from a mean of 8.0 to 4.5. Continuing down the rows, red tape declined modestly (noting in 2001, given the wording of the question many firms did not count their license to operate a business per se in the license total). Median time spent with local public officials also fell. However we have a new category and new type of bribe in 2004—bribes for labor relations that developed because of the national pro-labor ministerial directive issued in 2001. While relatively fewer firms paid these, for those that do, the bribes were large. Overall, to be consistent with 2001 if we count missing values as zeros in 2004, the average bribe ratio of 6.1 in 2001 declined modestly to 5.8 in 2004 including labor bribes.[11] We tried a crude weighting by sales size (using mid-points of size categories) to get a weighted average which indicates no change. It is clear bribing for red tape declined, but there was now a new source of local bribes, potentially restoring much of the difference.[12] To get a better sense of what happened, we turn to some partial correlations in the data.

Among our 178 firms, 50 who paid red tape bribes in 2001 reported absolutely zero bribes in 2004, while 30 firms which paid no red tape bribes in 2001 reported bribes in 2004. In this small sample, for firms reporting bribes in both periods no significant OLS or fixed effect results on bribe amounts emerge in statistical analysis although the time effect is noticeably negative. Fixed effect Tobits with just two observations per firm are strongly biased. However a "conditional" or fixed effects logit identified by firms who switched bribe-no bribe status suggests some interesting patterns. Results are given in Table 2, where we separate results for just red tape bribes (columns 1 and 2) and then those for red tape and labor bribes combined (columns 3 and 4). Results are similar. Controlling for firm fixed effects, (changes in) size variables don't seem to matter. However export activity may affect bribes and certainly changes in the number of licenses do.

The key results concern time effects and political parties. There are four districts with no recorded political votes and that is controlled for with a dummy variable (here interacted with time, as the vote share is). In columns (1) and (3) a time dummy for 2004 is negative indicating, ceteris paribus, the likelihood of paying bribes declined between the two time periods. We think this is a democratization-decentralization effect. Other changes at the time of the regime switch

[11] If we exclude missing values in 2004, the average rises to 6.33 in 2004.

[12] When we first got back questionnaires and saw the drop in red tape bribes and rise in labor ones, we worried that some firms may have been confused about the two types of bribes, since both red tape and labor bribes may be paid to officials from the local Ministry of Labor (but red tape only to officials from the local Ministry of Industry). We then went back out into the field with our lead surveyors and resurveyed about 70 firms to make sure there was no confusion; there was none.

such as Megawati's ascension to power and the introduction of labor bribe activity should only work to increase corruption, while local democratization per se increases the forums for people to protest corrupt behavior and empowers people to say no. In columns 2 and 4, this time effect is significantly less in districts which voted more for PDIP-GOLKAR, implying legislature composition is correlated with changing bribe activity. While the regime switch reduced the probability of paying bribes overall, point estimates suggest the effect could reverse in districts with heavy PDIP-GOLKAR support. By 65% vote share for PDIP-GOLKAR, the likelihood of bribe activity starts to increase overall between time periods.

How robust is this PDIP-GOLKAR time effect? Throughout we conduct robustness checks, although these are done in more detail in later sections when samples are larger. Here we focus on two key ones. The first is to make sure results aren't explained by correlated changes in economic conditions, where perhaps districts that do better economically pay more or less bribes, with economic changes potentially being correlated with vote shares. Second bribe responses (as opposed to actual activity) could be correlated with firms' perceptions of the local government, where for example if firms are more positive in a district they are less willing to "complain" (i.e., report bribes), and perceptions and outcomes may also be related to vote shares. For changes in economic conditions we look at GDP per capita in a district, assigning 1999 values to 2001 and 2003 values to 2004. For perceptions, we ask respondents on a scale of 1 (best) to 6 (worst) how they rate the efficiency of local government provision of basic services before and after regional autonomy. Here we look at the change in individual responses, assigning to 2001 firms' perceptions before regional autonomy and to 2004 their perceptions after regional autonomy, both covered in survey for 2004. Results are in columns 1 and 2 of Table 3, for the Table 2, column 4 formulation, where, given this is a fixed effects logit, we are assessing the effect of time changes in covariates. Increases in income and decreases in inefficiency (lowering the value of the covariate) are both insignificantly associated with decreases in reported bribes. For each, the Table 2 time-PDIP-GOLKAR coefficient of .0830 is little changed at .0965 and .0871 respectively. We experimented with other attitudinal questions, changes in district average attitudinal responses, and other specifications. [13] The results presented are as strong as any, in terms of effects on the PDIP-GOLKAR variable.

[13] For example, results are similar if we enter a time dummy multiplied by the change in the district average efficiency rating in 2001 versus 2004. Then the PDIP-GOLKAR coefficient (standard error) is .0783 (.0294), while the effect on the time dummy of the average attitudinal change is 2.07 (1.37). For income done in this fashion (time dummy interacted with the percent change in GDP p.c.), the PDIP-GOLKAR coefficient is .0951 (.0314), while the income coefficient is -1.65 (1.53).

These logit results are suggestive but the sample size is small and magnitudes from fixed effect logit coefficients are difficult to interpret. While the Table 2, column 3 result suggests that if the probability of a firm paying a bribe in 2001 was .7, by 2004 that had fallen to .5, we can't anchor initial probabilities. The estimation also assumes that size and license effects are constant over time, which may not be the case. To enrich the analysis and expand the sample size for over-time comparisons, we pool all manufacturing firms in 2001 and 2004 which were surveyed in the 37 overlapping districts.

District Level Time Differences

We start by exploring correlations of vote shares with other measures for 30 districts in which we have recorded 1999 vote shares, as well as 2001 and 2004 bribe data. Here we look at all bribes: red tape bribes in 2001 and red tape and labor bribes in 2004, so any bribe reductions over time are a minimum, based on assuming labor bribes in 2001 are zero everywhere. For the 30 districts with vote shares recorded, Figure 1a shows that the average (including zeros) bribe ratio in 2001 declined with the PDIP-GOLKAR vote share (with a simple correlation coefficient of -.20), but rose in 2004 (.37). Correspondingly (which holds for all figures to follow), in Figure 1b the fraction of firms paying bribes mirrors these same vote-time patterns. If, for these 30 districts, we regress the change in average bribe ratio on PDIP-GOLKAR vote share in 1999, the coefficient (standard error) is .0966 (.0438), indicating how in net bribes changed between the time periods in response to vote shares. Adding on either the percent change in district ln (GDP p.c.) or the change in perceived district level government inefficiency leaves the PDIP-GOLKAR effect unchanged and significant, and both coefficients of these added variables are insignificant.

The results in Figure 1 support the notion that districts with lower initial corruption were more willing to vote for PDIP-GOLKAR, but they paid for their votes with increases in corruption, related to how heavily they voted for PDIP-GOLKAR. Figure 2 shows that the 2004 pattern continues over to all our 87 districts: the average bribe ratio in 2004 rose sharply with PDIP-GOLKAR vote share in 1999. Figure 3 shows something else that is also critical to our thinking, that decentralization and Megawati's assent to Presidency was a regime switch. Figure 3 plots district bribe activity in 2001 versus 2004: rather than there being a 45 degree regression line, there is modest negative relationship (-0.14 is the simple correlation coefficient).

Finally Figure 4 shows a punishment effect, where initially less corrupt districts that voted for PDIP-GOLKAR in 1999 and experienced increases in corruption, then voted to "throw the bums out of office". In Figure 4a, we look at the 30 districts with overlapping data and plot the 2004-2001 average bribe ratio change against the 2004-1999 vote change. In the second wave of elections, districts that experienced high increases in corruption then voted big reductions in

PDIP-GOLKAR vote shares. In a footnote to the Figure, we show this correlation is not due to mean reversion in voting behavior. After accounting for 1999 vote share levels, increases in bribe activity are associated with declines in vote shares for PDIP-GOLKAR (and adding in the percent change in GDP p.c. has no effect on the result). Finally, Figure 4b shows for all districts on Java that those with low 2004 bribe activity saw little or no change in PDIP-GOLKAR vote shares, while those with high bribe activity saw big secular party vote share reductions. This is a suggestive sharp correlation in the data.

To explore these correlations further we then estimated these relationships for the pooled sample of 1677 firms (679 from 2001). Results on a Tobit specification to equation (5) are given in Table 4. In the pooled sample we measure overall effects of covariates and how those change between 2001 and 2004. Column 1 reports without political variables. There, firm size effects change dramatically over time. In 2001 bribes as a fraction of costs decline with firm size, while in 2004 no such pattern exists, suggesting officials start to harass bigger firms relatively more. In 2001 exporters pay more bribes; by 2004 that effect seems to disappear. Only the marginal license effect is unchanged over time.

What about the effect of the regime switch? In Table 4, a time dummy for 2004 is negative suggesting a 5.3 drop in bribes as a percent share of costs. In columns 2-5 we explore the political aspects. In column 2, we add in the vote/legislature share of PDIP-GOLKAR and that variable interacted with the 2004 time dummy. The base coefficient of -.14 suggests (under a non-"marginal" interpretation of Tobit coefficients) that in 2001 a 10% increase in PDIP-GOLKAR vote share *reduced* the percent bribe ratio by 1.4. However the .30 coefficient on vote share interacted with time suggests that the net effect in 2004 is reversed and that a 10% vote share increase then *led* in net to a 1.6 percent bribe ratio increase in 2004.

In columns 3-5 of the table, we attempt to correct for issues of simultaneity, to establish a causal link between bribing and assembly composition. But we note that with the small sample of districts in Table 4, IV results may be less compelling than later results based on larger samples. First we estimate a reduced form bribe equation, where we treat licenses as endogenous, determined by firm characteristics and politics and remove them as a covariate. Second we instrument as explained earlier for PDIP-GOLKAR vote share. Column 3 contains 2-step IV Tobit results[14] ; column 4 2SLS results, and column 5 ordinary Tobit results for the reduced form specification. Note the base period PDIP-GOLKAR coefficient is now zero and insignificant, which is reassuring since there should be no causal effect of initial vote on initial corruption. For the 2-step Tobit the net effect increases from the .16 effect in column 2 to .19 (and more in the

[14] The MLE version in this case did not converge, unlike in the rest of the paper.

ordinary Tobit in column 5). This number, .19, corresponds to the number, .20, we get for reduced form IV Tobit specifications for the later cross-sectional analysis. In general as expected, 2SLS coefficients are lower all-round compared to Tobit ones. Note the instruments are strong and the Sargan test in column 4 is excellent; but the Wald test in column 3 fails to reject exogeneity of all covariates, a general issue we will discuss later.

In Table 3 we again explore robustness of results. In columns 3 and 4 of Table 3, to the Table 4, column 5 formulation, we add respectively the district perceived average level of local government inefficiency in each time period and the district ln(GDP p.c.), as well as each interacted with the time dummy. The average efficiency variable interacted with time is significant suggesting that inefficiency in 2004 is associated with higher bribes. But in both cases PDIP-GOLKAR effects are little changed, netting at .20 and .21, compared to the column 5, Table 4 net effect of .22.[15]

4. The Overall Effects of Politics on Local Corruption

In this section we identify local assembly composition effects from cross-sectional variation in bribing activity in 2004. Our primary results are for the reduced form specification based on equation (5), where we substitute in firm characteristics which determine licenses and visits. We have also a measure of transport costs of visits by local officials which affects the number of visits: the population weighted average of distance from villages in the firm's sub-district to the district capital. In examining results, our focus is on the vote share variable, which in this reduced form specification captures both direct effects on bribes and indirect effects through the number of visits and licenses. In the next section we will report results for the structural equation, where we have a weak instruments problem.

The basic results are in Table 5. Columns 1 and 2 report on the specification for red tape bribes to which the structural model reported in the next section applies most directly, showing IV Tobit (MLE) and then ordinary Tobit results. In columns 3-4, we present results on overall local corruption since that is the prime concern, adding in bribes for labor troubles to those for red tape. We focus on the effect of politics on total bribes. While we use a Tobit specification, for the political variable we report 2SLS results and footnote one set of full 2SLS results.

[15] Entering these effects as simply one variable, either the change in district attitudes or change in income each interacted with a time dummy produces similar results (no effect on PDIP-GOLKAR effects). We also explored controlling for local culture and devoutness, as detailed in later sections, by adding in a variable, the ratio of Islamic to state elementary schools in 1990. That control has no effect here: the base school ratio coefficient (standard error) is -3.85 (4.37) and the ratio interacted with time has a coefficient of 3.62 (6.08), implying in 2004 its net effect is zero. And its insertion raises the PDIP-GOLKAR net effect to .27.

In Table 5 for firm characteristics, there is a common pattern across columns. The red tape bribe ratio increases with firm employment up to about 120 employees (median 40; mean 168) and increases over all ranges for the total bribe ratio. The bribe ratio increases initially with capital stock but peaks before the biggest firms, with bigger increases for total than red tape bribes. Labor bribes tend to affect bigger firms more. Being an exporter or having FDI has a weak positive effect on bribes. In these reduced form equations, Chinese entrepreneurs who face discrimination and have fewer opportunities for redress in general pay significantly more bribes, with the bribe ratio rising by 1.2 for red tape and a whopping 2.6 for overall bribes. In estimation, the cost of visit variable, distance from the plant's sub-district to the district capital, has a weak effect. Industry dummies generally don't matter. As we will see in the next two sections, the capital stock, export, FDI and being Chinese bribe effects mostly work indirectly through impacts on numbers of licenses, rather than directly affecting bribes.

The pattern of legislature composition effects on bribing is consistent across columns. In columns 1 and 3, the IV coefficients are .15 and .20 for red tape and total bribes respectively and are 2-2.5 times larger than ordinary Tobit coefficients. We believe IV estimates of political effects are greater than non-IV ones because of the unobserved traditional, local "environment of corruption", which acted to increase bribe levels. Figure 1 suggests that, if 2001 bribes reflect the tradition of corruption in a locality, this is *negatively* correlated with PDIP-GOLKAR 1999 vote share, biasing that coefficient downward.

The .20 coefficient in column 3 on PDIP-GOLKAR corresponds to the .19 point estimate in the over-time comparisons in Table 3. Based on IV results (and a non-marginal interpretation to Tobit coefficients), a 10% increase in secular party assembly composition raises the total bribe ratio by 2.0% (with a mean overall bribe ratio of 3.4). The marginal Tobit effect is about 1.2, accounting for the probability of paying a bribe; this corresponds to the 2SLS effect of 1.3. These are large effects and constitute our basic result. Moreover the political effects in Table 5 are almost double those for the structural model in the next section; Table 5 results are a net combined effect: the direct effect of politics on bribing and the indirect effect of politics through changes in harassment and red tape. Political effects are viewed as varying continuously with vote shares (see Figure 2), but we report on experiments with non-linearity below.

In terms of tests of the specification, while Wald-tests can't reject exogeneity of covariates overall, the p-value is not large. And, while t-tests can't reject equality of ordinary and IV Tobit coefficients for the political variable alone, t-values are not small-- 1.3 and 1.4 respectively for red tape and all bribe comparisons. These results combined with our beliefs suggest that doing IV estimation is correct; but we also have two other pieces of evidence. First,

for a linear formulation accounting for heteroscedasticity, we performed a basic Hausman (1978) t-test in an OLS bribe equation on the coefficient of the usual added term: the residuals from the first stage regression of PDIP-GOLKAR on exogenous variables and instruments. That coefficient is always negative, consistent with our priors. For the all bribe equation, as formulated in Table 5, the t-statistic is still only -1.3; but for red tape bribes it is -3.13. Second, if we are less conservative in our instrumenting and add the percent Christian in the population in 1995 as a third instrument, in the IV Tobit formulation, the Wald p-value for red tape bribes in now at .05 while for total bribes it is .13. More particularly, with greater precision in estimation, t-tests reject equality of IV and ordinary Tobit estimates in both cases. Sargan values in 2SLS estimation of this formulation suggest a less conservative instrumenting approach is valid for the specifications in Table 5: Sargan p-values in 2SLS either stay the same (all bribes) or actually rise (red tape bribes).

Robustness

In Table 6, we conduct two types of robustness tests concerning the magnitude of legislature composition effects. For these we report just the ones for all bribes; results for red tape bribes are similar. In the first set in Table 6a, we look at robustness of the Table 5 results to sample weights, specifications, and other considerations. In Table 6b, we look at the effect of adding in other covariates, representing a variety of district economic, social, and political conditions. Finally we have a discussion of non-linear specifications to political effects.

Alternative specifications. Our sample of 2004 firms is non-random with over-sampling of firms in smaller districts and in a few of the districts that overlap with sample districts in 2001. We have not weighted in estimation and an issue is whether that affects results. We don't know the relevant population of firms in 2004, to create exact weights, but we can try one plausible experiment to determine if weighting is a critical problem. To construct our basic sample, we drew on the census bureau's [BPS] list of medium and large size firms (most firms over about 12 employees) in 2003. But in over-sampling in districts with few firms, surveyors sometimes extended the sample into smaller size firms. In the experiment, we restrict the estimating sample to all firms over 12 employees (2272 of 2474) and use as weights our sample count relative to the BPS count in 2003 for each district, in estimating a weighted IV Tobit. Doing so in column 1 raises the PDIP-GOLKAR coefficient to .25.[16]

[16] From the 2000 PODES, we have an inventory of all village activity including a count of all manufacturing enterprises as reported by village heads; these include some very small, "informal" sector firms that are well below the BPS and our horizon and have huge numbers. Nevertheless, based upon this count, we also estimate weighted IV Tobits. For these PODES weights, the coefficient of .199 falls to .153 and remains significant.

In column 2, we treat firm characteristics such as size and FDI and export status as also endogenous, substituting in controls for local economic conditions that should determine firm characteristics—a measure of market potential, average employee compensation from the annual survey of manufacturers, indirect taxes (which are mostly local property taxes) over capital stock as a proxy for the local cost of capital, and the number of own industry enterprises as a source of local scale externalities. The first variable is from 1994 and the next three from 1997, where we use historical variables to mitigate issues of correlation with contemporaneous errors terms. Market potential is the distance discounted sum of GDP of the own and all other districts on Java.[17] The first three variables are entered as a second order expansion. While scale externalities clearly matter, the variables in the second order expansion generally are weak statistically. Regardless, in column 3, now the IV vote share coefficient is .21, which is little different from the .20 in Table 5, suggesting the indirect effects of corruption through firm size are minimal.

In the political process, we lumped PDIP and GOLKAR together, in part because we believe it is the total that matters. In column 3 we split the vote out and add a third instrument: the percent of the population that is Christian in 1995. In the split the PDIP coefficient is larger at .26 and much more precisely estimated than the GOLKAR coefficient at .17. But for the same model run for red tape bribes alone, the PDIP and GOLKAR respective coefficients (standard errors) are .135 (.0573) and .200 (.116). The only conclusion we draw is that the PDIP effect is more precisely estimated.

Finally, we turn to the issue that we have estimated a Tobit, imposing a common functional form on the decision of whether to bribe or not, and if so what ratio of bribes to pay, treating the problem as a simple censoring one. In column 4 of Table 6a, we show the results for the bribe equation for the sample where bribes are positive, estimated by 2SLS with a Heckman selection term based on a reduced form Probit. As in the rest of the table we focus just on the vote share coefficient, which is .115, consistent with the marginal effect of .12 on expected bribing activity in the Tobit framework. The selection coefficient is statistically significant. To get convergence in the bribe equation we had to drop industry, export and FDI dummies (which are never significant in continuous bribe formulations). In the (reduced form) selection equation we have the full set of firm characteristics as well as our instruments to control for politics.

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[17] In the sum, GDP in each district is discounted by $Ad_{ij}^{.8}$, where d_{ij} is distance in 100's of miles from the capital of the own district, *i*, to that of *j*. The .8 exponent is taken from Au and Henderson (2005). The *A* is given a value such that $Ad_{ij}^{.8}$ is normalized to be one for the smallest own district. For the own district, following standard empirical practices the distance, d_{ii}, is 2/3 radius of the district, where that is the average distance "commuted" by any firm to the center (if all firms were uniformly spread over a circular district).

Other covariates. In Table 6b, we look at the effect on results of adding in other covariates. Except for the last column, we treat the added covariates as endogenous (with instruments footnoted in the table); but results differ little if they are treated as exogenous, in the sense that PDIP-GOLKAR coefficients still hover around .20 and the added covariates remain insignificant. First we look at the effect of "political competition"—how concentrated vote shares are. It could be that in districts where votes are more spread across parties, there is a greater degree of "competition" which induces, say, less corruption, because the governing coalition is more responsive to voters in its attempt to retain office. The degree of vote concentration is measured by a standard Hirschman-Herfindahl index: the sum of squared vote shares of each of the 40 parties. The higher the index the more votes are concentrated. In column 1 this variable is positive as expected but insignificant, and only serves to raise the PDIP-GOLKAR coefficient.

In column 2 of the table, we add in average profitability of manufacturing firms from the Annual Survey of Medium and Large Size Firms in 2001, where profitability could raise bribes firms are willing to pay, and could be correlated with vote shares. That variable is also insignificant, with no effect on the PDIP-GOLKAR coefficient. In column 3 we add in the count of manufacturing firms in the 2001 annual survey just noted. That count could reduce the cost of traveling to collect bribes or could better reflect long term productivity and local economic conditions. While that coefficient is positive, the PDIP-GOLKAR coefficient again is unaffected. Then we add in the perceived district average efficiency in 2004 and ln(GDP p.c.) in 2003, variables used in Table 3 above. Again there are no significant effects. We also experimented with adding in the percent change in GDP p.c. from 1999 to 2003 and the change in district average inefficiency. The change in income has an insignificant negative sign and the change in inefficiency a positive insignificant one, with respective PDIP-GOLKAR coefficients (standard error) of .234 (.0953) and .194 (.0768).[18]

In the last column we attempt to control for local "tastes" concerning corruption based on the notion that devout Muslims find corruption offensive. We don't know devoutness of our owners, but we have districts characteristics that reflect local devoutness. The prime one noted earlier is the ratio of Islamic elementary schools to government schools, reflecting inculcation of religious practices as well as parental views. Once we control for tastes we add our third instrument, percent Christian, since it then readily passes our specification tests on its inclusion. In the last column the coefficient on the devoutness variable is negative but insignificant; the PDIP-GOLKAR coefficient is little changed at .196. The PDIP-GOLKAR coefficient also

[18] Here when we instrument for the change in income from 1999-2003 we replace GDP p.c. 94 as an instrument with the percent change in GDP p.c. from 1994-1999 (partial *F* of 149).

remains in the neighborhood of .20 when we add in higher order terms of the school variable or add in another measure of devoutness combined with the school variable.[19]

Non-linearities and discontinuities. We have relied on a linear specification to assembly composition effects. We settled on this after trying both regression discontinuity approaches and modeling non-linearities. In particular we tried a sharp discontinuity approach where in an ordinary Tobit we entered a cubic in vote shares and a dummy for when the PDIP-GOLKAR share tops 50%. We also did this for PDIP vote shares alone. In both cases the coefficient on the dummy variable for having a majority of assembly seats is insignificant and has the wrong sign (negative). We also looked at the 26 districts where PDIP-GOLKAR (and PDIP alone in 10 districts) vote shares lie between 45 and 55%. Again a dummy variable for being over 50% is completely insignificant in both cases, with the wrong sign.

Ordinary Tobit results from dividing PDIP-GOLKAR vote shares into a series of dummy variable categories (<40%, 40% to <50%, 50% to <60%, 60% to <70% and ≥ 70%) suggested a sharper jump in bribing as we move into the last two categories; although when allowing for a simple differential in slope coefficient beyond 50%, such an effect is zero. We then experimented in ordinary and IV Tobit estimation with quadratic and cubic formulations. A cubic doesn't produce significant results. A quadratic specification has suggestive ordinary Tobit results [coefficients (standard errors) of -.241 (.161) PDIPGLKR + .00350** (.00172) PDIPGLKRsq.] but completely insignificant IV ones [coefficients (standard errors) of -.0617 (.322) PDIPGLKR + .00321 (.00343) PDIPGLKRsq., with first stage *F*'s of 88 and 75]. In general there is not strong evidence of non-linearity and certainly no form that we are comfortable quantifying.

5. The Anatomy of Bribing in 2004

In the next two sections we turn to structural estimation results, looking first at the bribe equation and then equations for visits and licenses. We start with the structural version of equation (6) based on equation (2) for bribes paid by firms in 2004. We examine red tape bribes,

[19] The second measure is the ratio of prayer-houses to mosques discussed in footnote 6. With a cubic in the school variable (which has insignificant coefficients), the PDIP-GOLKAR Tobit coefficient (standard error) [and 2SLS coefficient (standard error)] is .203 (.140) [.161 (.0715)]. With a quadratic in the school and the prayer-house variables, the results are .17 (.129) [.129 (.0686)]. Note as we add these district level terms with just 97 districts, at least Tobit errors tend to blow up. For the quadratic in tastes the coefficients (s.e.'s) are -5.18 (9.25) school ratio – 21.3 (14.9) school ratio squared -1.35* (.712) pray/mosq. ratio-.00108 (.0221) pray/mosq. ratio squared + 4.96** (1.36) school ratio*pray/mosq. ratio. The ratio of Islamic to state primary schools has a mean .26 and s.d. .15 and the ratio of pray-houses to mosques has a mean 3.9 and s.d. 2.7.

since the structural model is designed for those; the structural form results are even less precise for total bribes. In the structural model we treat visits as endogenous and licenses as pre-determined. The specification is very simple. Controlling for visits and licenses, bribes as a fraction of costs are unrelated to most firm characteristics—industry, export activity, FDI investment, capital stock and the like. As we will see in Section 6, these items definitely create red tape and visits; but in this structural form, the bribe ratio is only related to overall scale which takes a quadratic form in employment. The bribe ratio seems unrelated also to firm cost and demand conditions such as the wage rate in the district and a measure of district market potential (see later); arguably these could affect bribes and costs in the same proportion leaving the ratio unchanged. Being Chinese has a positive, but insignificant effect in this table.

Columns 1 and 2 of Table 7 present IV Tobit (MLE) and ordinary Tobit estimates, where in column 1 we instrument for visits with several variables. There are two travel cost variables facing officials visiting firms, starting with the distance from the sub-district of a firm to the district capital, discussed earlier. Second, coastal areas are viewed as more inaccessible, so we use the fraction of the population in a sub-district living in coastal villages as a second instrument. Then there are variables which seem to draw more excuses for visits, although not more bribes conditional on visits. These instruments are whether a firm is in "high tech" activity (machinery, electronics, transport, and instruments) or is an exporter. These four variables turn out to be are weak instruments. Their partial-*F* in first stage regressions for column 1 is 5.2; and that is the best it gets. That gives us the fundamental dilemma in estimation that led to our focus on a reduced form specification. We have weak instruments for visits; and trying to additionally instrument for licenses at the same time (also with weak instruments) produces unstable and non-credible results. In Table 7, we present results assuming licenses are predetermined, largely in 1999 and 2000, before the regime switch in 2001.

In column 1, a one standard deviation increase in the number of visits (9.9) from the mean (6.6) increases the red tape bribe ratio by 2.4, where the mean red tape bribe ratio is 1.8 for the estimating sample. That coefficient in IV estimation is imprecisely estimated, although IV and ordinary Tobit results are quite similar. Increasing the number of licenses and retributions by one standard deviation (5.7) from the mean (8.1) raises the bribe ratio by 1.2, again a large effect. The bribe ratio peaks at a firm employment level of 26 in column 1. In general in the table, the bribe ratio starts to fall with firm size beyond some size at or below the median (40).

In Table 7, in columns 3-4, we introduce the influence in a district of having voted for PDIP-GOLKAR. The IV Tobit coefficient is .0802 for the structural form model in this table compared to .146 for the reduced form red tape bribe equation in Table 5; and the corresponding

2SLS coefficient in this table is .0704 compared to .104 in Table 5. Reduced form coefficients are larger because they capture both direct and indirect effects on bribing. In Table 7, given the simultaneous attempt to instrument for visits, the PDIP-GOLKAR coefficient in column 3 is insignificant. We note however that standard errors for MLE Tobit are based on clustering, which enlarges the standard errors as expected, but doesn't allow for heteroscedasticity. In contrast the robust, clusterd standard errors for 2SLS for the same equation are relatively noticeably smaller. And the 2SLS coefficient is strongly significant, as reported in square brackets in the table. In general, this is a pattern throughout the work: the PDIP-GOLKAR coefficient under 2SLS tends to have a higher level of significance than under MLE Tobit.

6. Harassment and Red Tape

In this section we look first at the second part of our corruption model: what determines the degree of harassment as measured by number of visits in equation (4). We estimate a "structural" version where licenses and retributions are treated as exogenous. Visits are determined by firm employment size, licenses and retributions, whether the firm exports, whether it is in a high tech industry, and cost of visit variables. Other firm characteristics seem to play no role in determining the number of visits. For the cost of visit variables, besides the population weighted average of distance from villages in the firm's sub-district to the district capital used earlier, we add in the proportion of the population living in coastal areas in the sub-district (as raising transport costs) and a variable representing the ease of visiting multiple local plants, the ratio of total manufacturing establishments to land in the sub-district based on the PODES (an inventory of village characteristics collected every three years). After examining the structural relationship, we turn to the reduced form version where we add in firm characteristics that additionally determine licenses and retributions such as a more detailed industry breakdown, capital stock, and FDI status.

Columns 1 and 2 of Table 8 report results on the structural model, with column 1 being the IV results when we instrument for party vote shares. IV and ordinary Tobit results are virtually identical. Visits increase with the number of licenses, being a high tech industry, being an exporter, and with firm size up to 150 (about mean size and way above median size). The cost of visit variables have the correct signs throughout the table, but only the variable measuring the density of local manufacturing establishments is ever significant at even a 10% level. This reveals our problem with weak instruments in Table 7 above. Finally for the key variable, PDIP-

GOLKAR vote shares, while the IV coefficient says that an increase in vote share of 10 points increases visits by .7 (from a mean of 7.4), the effect is not significant.

In columns 3-4 when we remove the license variable in columns 1 and 2 and add in more firm characteristics, we see that capital stock size and being Chinese additionally significantly affect visits, indirectly through license requirements. Again IV and ordinary Tobit results are virtually the same. In this more reduced form version, the vote share coefficient is a little larger (.09 versus .07) and is significant at a 10% level in the ordinary Tobit estimates. The Wald test on exogeneity of covariates is far from rejecting exogeneity.

Finally in Table 9 we turn to licenses and retributions, estimating relationships by OLS and 2SLS. Requirements increase monotonically with firm employment and capital stock size. Being Chinese or an exporter, or having FDI increases licenses and retributions firms face. The Chinese effect is surely a discrimination effect: Chinese are "intimidated" into subscribing to licenses that other firms typically would not be required to hold. Here again the need for instrumenting is unclear and PDIP-GOLKAR vote share coefficients while positive are not significant. From these results it would appear that license requirements depend on firm characteristics per se; and the effect of politics is at best small. Regardless, given PDIP-GOLKAR effects are positive in both Tables 8 and 9, we can see why in Table 5 versus 7, the effect of vote shares on bribes rises when we move to the reduced form and add in indirect effects of politics on visits and licenses.

7. Conclusions

In Indonesia the introduction of local democracy is associated with decreased local corruption. However specific politics, separate from local devoutness and the traditional local corruption environment matter. Corruption falls in areas which vote more heavily for Islamic parties. As local vote shares and hence local legislature seat shares of secular parties rise, the relative degree of corruption rises. The baseline results suggest a secular party vote share increase of 10% raises the bribe ratio by 1.2 (marginal Tobit effect), where the mean ratio is 3.4. But an interesting aspect is that it appears voters in what became corrupt districts initially did not associate voting for secular parties with corruption. They were "fooled" in the first election cycle, but then responded by changing their votes towards Islamic parties in the next cycle.

These results based on local politics may provide optimism for reduction of corruption at the national level, in the long term. First, a change in local corruption environments surely impacts corruption at the national level per se. But the potential ability of Islamic parties to garner

political support based on anti-corruption stances raises the stakes at the national level. If secular parties over time do not clean house at the national level, then one or more of the Islamic parties may have enhanced chances of regaining dominance of the national political scene. Seeing voters turn to Islamic parties in the face of corrupt incumbent assemblies suggests that the political issue of corruption is a powerful one and may play out as (if) other Islamic countries democratize. However, while the current government in Indonesia has a focus on corruption reduction at the national level, people believe that the immediate prospects for substantial improvement are dim: corruption still serves to fund national political party activities and national bureaucrats still rely on corruption proceeds to supplement their salaries to meet market compensatory pay.

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Table 1. The 2001 and 2004 comparison: 178 firms

	2001	2004
No. (out of 178) paying bribe for red tape	136	116 [12 missing]
If pay, bribe as % of costs: mean median	**8.04** **5**	**4.53** **2**
No. of licenses	10.94 [lower bound]	10.56
Median time with local officials [Scale: 1 (0-5%), 2 (5-15%),.6 (>75%)]	2	1
% paying labor bribes	n.a.	57 [8 missing]
If pay, labor bribe as % of costs mean median	n.a. n.a.	5.2 1.2
(Unweighted) Avg. total bribe as % of costs, overall	**6.14**	**5.79**
Crude weighted avg. total bribes as share of total costs	5.6	5.7

Table 2. Bribe or not, 2001 vs. 2004. "Fixed effects" logit; 178 firms in 24 districts.

	Red tape bribe, or not	**Red tape bribe, or not**	**Red tape+ labor bribe, or not**	**Red tape + labor bribe, or not**
Small-medium size (500m -1b)	.00924 (.565)	-.143 (.655)	-.204 (.627)	-.320 (.651)
Medium size (1b – 5b)	-.0975 (.714)	(.0413 (.755)	-.212 (.736)	.286 (.844)
Large size (>5b)	-.0549 (.776)	-.137 (.854)	-.225 (.789)	-.501 (.954)
Dummy: export or not	1.13* (.635)	.970 (.667)	1.17 (.726)	1.10** (.378)
Ln (no. of licenses)	.481** (.231)	.592** (.286)	.872** (.292)	1.05** (.378)
Time Dummy, 2004 [D2004]	**-.967**** (.347)	**-4.52**** (1.52)	**-.831**** (.362)	**-5.35**** (1.72)
D2004* share '99 PDIP-Golkar vote		**.0652**** (.0257)		**.0830**** (.0290)
Control: no recorded '99 vote		yes		yes
N [no. firms] {bribe '01 & no bribe '04}	160 [80] {50}	160 [80] {50}	140 [70] {40}	140 [70] {40}

One asterisk indicates a 10% significance level and two a 5% level.

Table 3. Overtime models: robustness to other covariates

	Fixed effect logit (Table 2, col. 4)	Fixed effect logit (Table 2, col. 4)	Tobit: Pooled '01-'04 districts (Table 3, col. 5)	Tobit: Pooled '01 –'04 districts (Table 3, col. 5)
PDIP-GOLKAR99			-.0627 (.0708)	-.0650 (.0684)
D2004* PDIP-GOLKAR99	.0871** (.0300)	.0965** (.0314)	.261** (.0731)	.276** (.0686)
Inefficiency (t)	.242 (.218)		-1.08 (2.73)	
D2004* inefficiency(t)			7.31** (3.12)	
lnGDP p.c. (t)		-2.04 (1.36)		.282 (1.72)
D2004* lnGDP p.c. (t)				.392 (1.77)
N	140	140	1862	1862

Standard errors for Tobits are based on clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 4. Pooled sample, 2001 and 2004, manufacturing firms in 37 districts on Java[a]

	Tobit	Tobit	IV Tobit (2-step)	2SLS	Tobit
Small-medium size	.741 (1.46)	.634 (1.43)	1.53 (1.43)	.841 (1.49)	1.53 (1.80)
***D2004**	.597 (1.89)	.814 (1.93)	1.13 (1.91)	.436 (1.49)	1.12 (2.02)
Medium size	-5.12** (1.79)	-5.13** (1.86)	-4.24** (1.45)	-3.15** (1.55)	-4.24** (2.27)
***D2004**	**6.83** (2.31)	7.20** (2.44)	8.51** (1.89)	4.85** (1.77)	8.51** (2.75)
Large size	-6.03** (2.07)	-6.05** (1.96)	-6.20** (1.54)	-4.43** (1.62)	-6.06** (2.17)
***D2004**	**6.35** (2.83)	6.55** (2.80)	10.7** (1.96)	5.93** (1.59)	10.5** (2.74)
Export or not	3.65** (1.43)	2.88** (1.42)	4.91** (1.14)	3.79** (1.16)	4.65** (1.49)
***D2004**	**-3.07** (1.91)	-1.63 (1.94)	-2.79* (1.52)	-2.73* (1.13)	-2.48 (1.59)
Ln (no. licenses)	5.67** (1.59)	6.47** (1.64)	n.a.	n.a.	n.a.
***D2004**	-.459 (1.55)	-1.86 (1.69)	n.a.	n.a.	n.a.
Time Dummy, 2004	**-5.30*** (3.12)	**-18.8**** (4.76)	**-16.9**** (6.29)	**-12.4**** (4.23)	**-21.5**** (4.22)
% share pdip & golkar vote '99		**-.136**** (.0416)	**.00721** (.0741)	**.0467** (.0809)	**-.0620** (.0684)
***D2004**		**.301**** (.0590)	**.200*** (.115)	**.171**** (.0823)	**.285**** (.0709)
Variance σ^2	12.0** (.967)	11.9** (.978)			13.0** (1.18)
Control: no vote areas		Yes	Yes	Yes	Yes
N [districts] {zeros}	1677 [37] {484}	1677 [37] {484}	1862 [37] {582}	1862 [37] {582}	1862 [37]
Wald-test: p-value			.84		
Sargan p-value				.97	
Partial F's			175, 119	175, 119	
R^2				.28	

a. In the covariates, a dummy is used to control for districts with no votes. From the discussion in the text, instruments are % government workers in 1990 and the fraction of the population living in villages on the coast in 2000, each interacted with the dummy for no votes. Then there is a second set of instrumental variables which is the first additionally interacted with the time dummy.

Standard errors for Tobits are based on clustering (except for 2-step IV) and for 2SLS standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 5. "Reduced form" models of bribes

	IV Tobit [MLE]; red tape bribes[d]	Tobit: Red tape bribes	IV Tobit [MLE]: All bribes	Tobit: all bribes
'99 vote : PDIP-GOLKAR [2SLS]	.146** [.104**] (.0346) [(.0708)]	.0597** (.0205)	.199** [.130**] (.0897) [(.0493)]	.0842** (.0369)
Ln (employ)	2.53** (.633)	2.50** (.622)	2.68** (1.33)	2.71** (1.32)
Ln (employ) sq.	-.263** (.0721)	-.255** (.0694)	-.175** (.145)	-.175** (.141)
Dummy: rent capital	.535 (.663)	.379 (.622)	.994 (1.29)	.868 (1.26)
Capital size: 500m-1b	1.18** (.429)	1.22** (.402)	2.46** (.872)	2.35** (.837)
Capital size: 1b-5b	3.08** (.829)	3.05** (.814)	4.21** (1.22)	4.06** (1.24)
Capital size: 5b-20b	1.59** (.548)	1.67** (.528)	3.06** (.924)	3.47** (1.00)
Capital size: over 20b	1.27 (.850)	1.29* (.762)	1.02 (1.36)	1.79 (1.40)
Dummy FDI	.767 (.783)	.838 (.821)	.831 (1.18)	1.24 (1.26)
Dummy export	.540 (.551)	.249 (.503)	.596 (.971)	.108 (.872)
Dummy Chinese	1.17** (.528)	1.34** (.484)	2.61** (1.26)	2.81** (1.04)
Controls: no vote, ind. dummy, visit cost	Yes[ab]	Yes	Yes[c]	Yes
N [zeros]	2582 [1160]	2582 [1160]	2474 [932]	2474 [932]
Variance σ^2 [ρ][e]	6.34** [-.101] (.505) [(.0731)]	6.36 (.552)	11.0 [-.116] (.751) [(.108)]	10.9 (.812)
Wald test: p-value	.16		.28	
Partial F's: 1st stage	245		245	
Sargan p-value: 2SLS	[.41]		[.84]	
R^2: 2SLS	[.16]		[.195]	

a. There are 8 categories of industries. None of the 7 dummy variables have coefficients that are significant at 10% or better level in column 1.
b. From visit equation in Table 8, the control is avg. distance from villages in sub-district to district capital. The coefficient is always insignificant.
c. Here wood [3.77 (1.93] is significant.
d. 2SLS coefficients (standard errors) for column 1 variables are, in order, as follows: .104** (.0346); .808** (.346); -.100** (.0391); .184 (.307); .518** (.266); 2.02** (.580); .543 (.356); .523 (.511); .607 (.647); .151 (.373); and .539* (.294). These coefficients are about 60% of column 1 coefficients.
e. ρ's are the correlation of the error terms between the main bribe equation and the equation for vote share.

Standard errors for Tobits are based on clustering; and, for 2SLS, standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 6. Robustness: all bribes

a. Alternative specifications

	IV weighted Tobit (MLE): BPS weights	IV Tobit [MLE][a] (fully reduced form)	IV Tobit (2-step) : Vote split	2SLS: Bribes>0, with selection correction
Share '99 vote PDIP-GOLKAR	.253** (.114)	.210** [(.0718)]		.115** (.0541)
Share '99 vote: PDIP			.264** (.0992)	
Share '99 vote GOLKAR			.166 (.167)	
Dummies: industry	Yes	Yes	Yes	No
Visit cost control	Yes	Yes	Yes	No
Dummies: FDI, export	Yes	No	Yes	No
Firm labor and capital variables	Yes	No	Yes	Yes
Dummy: Chinese	Yes	Yes	Yes	Yes
District econ. controls	No	Yes	No	No
Variance σ^2 [ρ]	12.2 [-.183] (1.08) [(.131)]	11.0 [-.0510] (.807) [(.096)]	11.1 [-1.11, -.251] (.609) [(.701),(.482)]	
N [zeros]	2272 [817]	2477 [935]	2474 [932]	1511
Wald test p-value	.16	.37	.28	
Selection λ:				-4.87** (1.81)

a. The controls with coefficients (standard errors) are .946 (.562) ln (no. firms in own industry in district '97) -29.5 (34.2) ln (MP: market potential '94) -33.6 (39.9) ln (wage97)+ 6387 (5777) prop. tax rate '97 +.396 (.871) ln (MP)sq +.237 (.487) ln (wage) sq. -15261 (20072) tax rate sq. +1.30 (1.76) ln (MP)*ln (wage) -206 (276) ln (MP)*tax rate -119 (208) ln (wage)*tax rate. The mean (standard deviation) of ln (wage), ln (MP), and tax rate are respectively 8.53 (.858), 24.0 (.542), and .00465 (.00369).

Standard errors for Tobits are based on clustering (except for 2-step IV); and, for 2SLS, standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 6. Robustness: all bribes (continued)

b. Other covariates (added to Table 5, column 4 formulation)[a]

	IV Tobit MLE	IV Tobit MLE	IV Tobit MLE	IV Tobit MLE	IV Tobit MLE	IV Tobit MLE[b]
Share '99 vote PDIP-GOLKAR	.265** (.0949)	.207** (.0824)	.197** (.0774)	.224** (.0947)	.180** (.0780)	.196* (.118)
Political competition: HHI of vote shares	18.6 (25.3)					
Avg. profit: manu. firms in district, 2001		.182 (.462)				
Ln (No. manu firms in district 2001)			.829 (1.22)			
Perceived inefficiency dist. average				-3.44 (5.76)		
ln (GDP p.c.)					.945 (.692)	
Ratio: Islamic to state elementary schools						-.564 (5.37)
Wald {Sargan (2SLS)}:p-values	.19 {.64}	.38 {.76}	.40 {.70}	.34 {.69}	.52 {.88}	.35 {.47}
Partial F, on added covariate	89.8	25.5	73.9	26.8	3708	n.a.

a. Instruments for column (1) are % population living in coastal villages 2000, % pop Christian in 1995, and % population government employees 1990. For columns (2) – (5), ln(dist. to Jakarta) and ln(GDP p.c. 1994) are added as instruments.
b. The 2SLS PDIP-GOLKAR coefficient (standard error) is .145 (.0602).

Standard errors for Tobits are based on clustering; and, for 2SLS, standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 7. "Structural form" bribe equations: red tape bribes

	IV Tobit MLE[a]	Tobit	IV Tobit (MLE)[b]	Tobit
Ln (no. of visits)	2.68[(1)] (.185)	1.90** (.166)	2.53[(1)] (2.81)	1.88** (.244)
Ln (no. licenses & retributions	2.19** (1.05)	2.62** (.294)	3.00** (1.49)	2.56** (.377)
Ln(employ)	1.28 (.869)	1.56** (.578)	1.36 (1.09)	1.55** (.608)
Ln (employ) sq	-.197** (.0816)	-.220** (.0618)	-.200** (.0964)	-.216** (.0639)
Share PDIP-GOLKAR 1999 vote [2SLS]			.0802[(2)] [.0704**] (.0598) [(.0278)]	.0334* (.0178)
Dummy Chinese	.558 (.420)	.587 (.413)	.426 (.463)	.549 (.456)
Controls: no vote			Yes[c]	Yes
N [zeros]	2517 [1126]	2517 [1126]	2517 [1126]	2517 [1126]
Wald test: p-value	.67		.52	
Variance σ^2 [ρ's]	6.18 [-.787] (.122) [(1.85)]	6.18 (.122)	6.20 [-.875, -.076] (.490) [(.818) (.318)]	6.16** (.549)
Partial F's: 1st stage regs.	5.18[(1)]		3.46[(1)] 90.6[(2)]	

a. Instruments are (population weighted) avg. distance from villages in sub-district to district capital, % pop. in sub-district living in coastal villages, dummy export firm, dummy high tech firm.
b. Instruments are those in (a) and % government workers 1990 and fraction of population in villages on the coast in a district each interacted with the dummy for no vote areas. In this column under [ρ's], we list the correlation of the error terms between the main bribe equation and the equation for vote share first and then next that for the main equation and the equation for visits.
c. The no vote dummy has a coefficient of 4.03 (3.46) and the Jakarta dummy adds to that -.897 (.946).

Standard errors for Tobits are based on clustering and for 2SLS standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 8. The number of visits

	IV Tobit (MLE)	Tobit	IV Tobit (MLE)	Tobit
'99 vote share: PDIP-GOLKAR	.0681 (.0720)	.0343 (.0270)	.0904 (.0829)	.0518* (.0230)
Ln (employ)	3.94** (.848)	3.90** (.833)	3.68** (.874)	3.63** (.884)
Ln (employ) sq.	-.392** (.0925)	-.387** (.0910)	-.280** (.0995)	-.272** (.101)
No. of licenses and retributions	.562** (.0671)	.568** (.0675)	n.a.	n.a.
Dummy: rent capital	n.a.	n.a.	-.0127 (1.17)	-.0950 (1.13)
Capital size: 500m-1b	n.a.	n.a.	2.41** (.617)	2.43** (.620)
Capital size: 1b-5b	n.a.	n.a.	3.21** (.993)	3.19** (.957)
Capital size: 5b-20b	n.a.	n.a.	3.34** (1.15)	3.34** (1.17)
Capital size: over 20b	n.a.	n.a.	1.74 (1.33)	1.69 (1.43)
Dummy: Chinese	.739 (.773)	.799 (.878)	1.18** (.946)	1.26** (.975)
Avg. distance from sub-dist. To capital	-.0136 (.0155)	-.0153 (.0152)	-.00873 (.0181)	-.0105 (.0168)
% pop in sub-district on coast	-1.05 (3.78)	-1.58 (3.16)	-1.62 (4.44)	-2.24 (3.86)
District manu. enterprises/land	1.61* (.915)	1.47* (.848)	1.11 (.965)	.942 (.903)
Dummy: high tech	2.69** (1.24)	2.69** (1.22)	n.a.	n.a.
Dummy: export	1.26* (.757)	1.15 (.712)	2.07** (.809)	1.96** (.756)
Dummy: FDI	n.a.	n.a.	-.254 (1.22)	-.190 (1.19)
No vote controls	Yes	Yes	Yes	Yes
Industry dummies	no	No	Yes	Yes
Variance σ^2 [ρ]	10.0 [-.0395] (.779) [(.0744)]	10.0 (.847)	10.2 [-.0447] (.779) [(.0822)]	10.2 (.850)
N [zeros]	2574 [303]	2574 [303]	2632 [309]	2631 [309]
Wald test: p-value	0.60		.61	

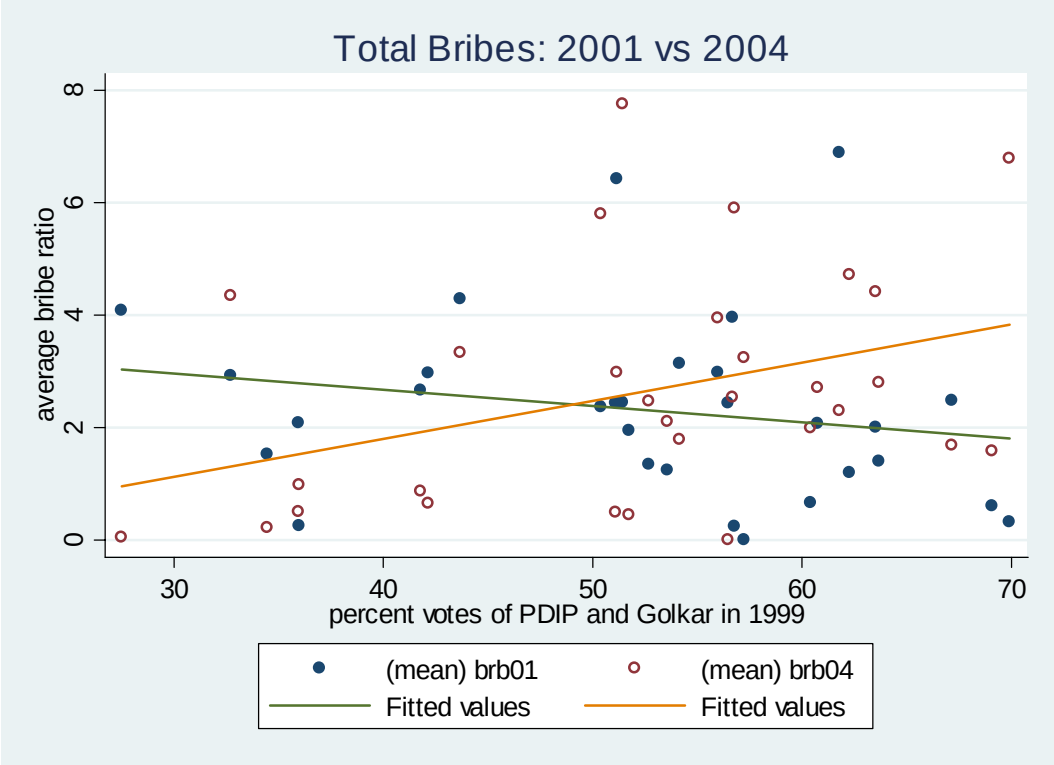
Standard errors for Tobits are based on clustering; and, for 2SLS, standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Table 9. Number of licenses and retributions

	2SLS	OLS
'99 vote share: PDIP-GOLKAR	.0506 (.0429)	.0252 (.0172)
Ln (employ)	.744 (.499)	.506 (.495)
Ln (employ) sq.	.0618 (.0594)	.0657 (.0602)
Dummy: rent capital	1.44** (.531)	1.42** (.531)
Capital size: 500m-1b	2.06** (.279)	2.07** (.279)
Capital size: 1b-5b	3.42** (.405)	3.42** (.408)
Capital size: 5b-20b	4.38** (.700)	4.40** (.699)
Capital size: over 20b	6.00** (.604)	6.00** (.614)
Dummy: Chinese	1.15** (.471)	1.20** (.482)
Dummy: export	1.13** (.298)	1.05** (.293)
Dummy: FDI	1.87** (.669)	1.88** (.666)
Taste controls	Yes	Yes
No vote controls	Yes	Yes
Industry dummies	Yes	Yes
N	2540	2540
Sargan p-value	.996	
Partial F: 1st stage reg.	241	
R^2	.494	.496

For 2SLS, standard errors are robust ones accounting for clustering. One asterisk indicates a 10% significance level and two a 5% level.

Figure 1. Bribe patterns in 2001 versus 2004: PDIP-Golkar vote share in 1999
a) (Unweighted) avg. of bribes as % of costs by district versus vote share



b) Fraction of firms paying bribes by district versus PDIP-Golkar vote share

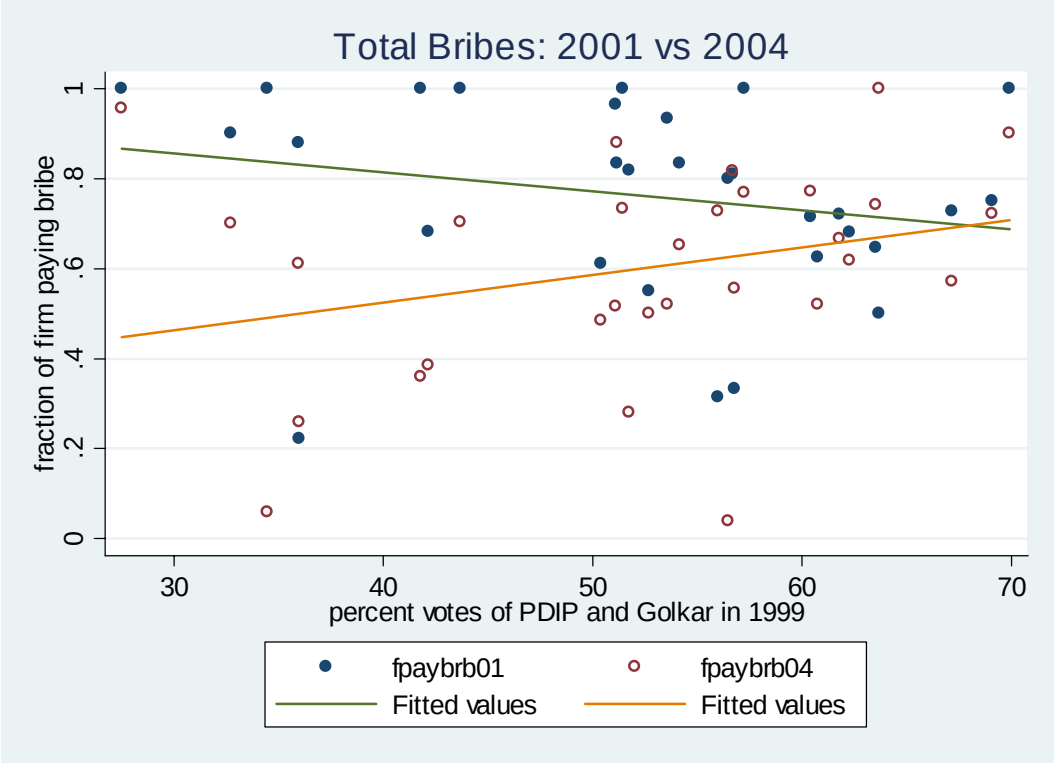


Figure 2. 2004 Avg. bribe ratio by district versus PDIP-GOLKAR vote share in 1999

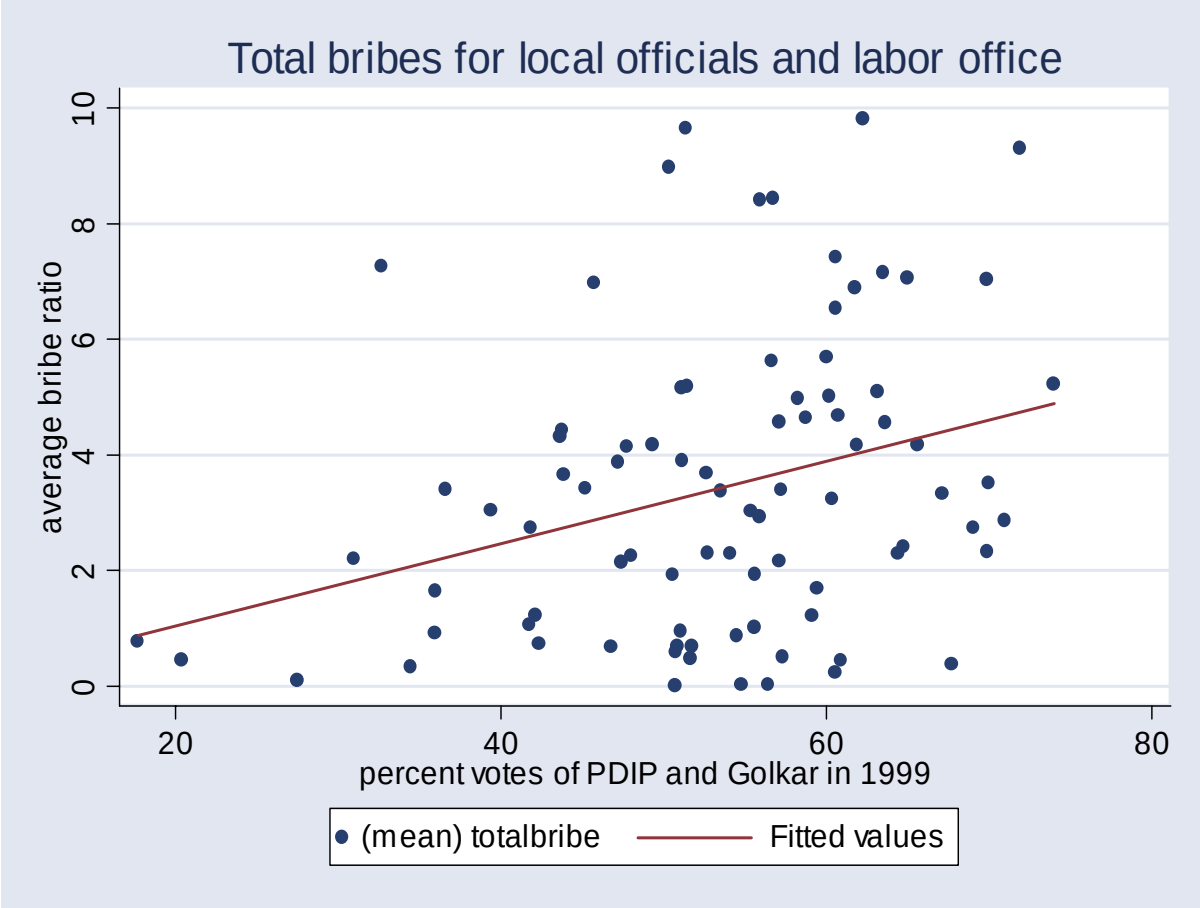


Figure 3. Bribe activity in 2001 versus 2004 by district

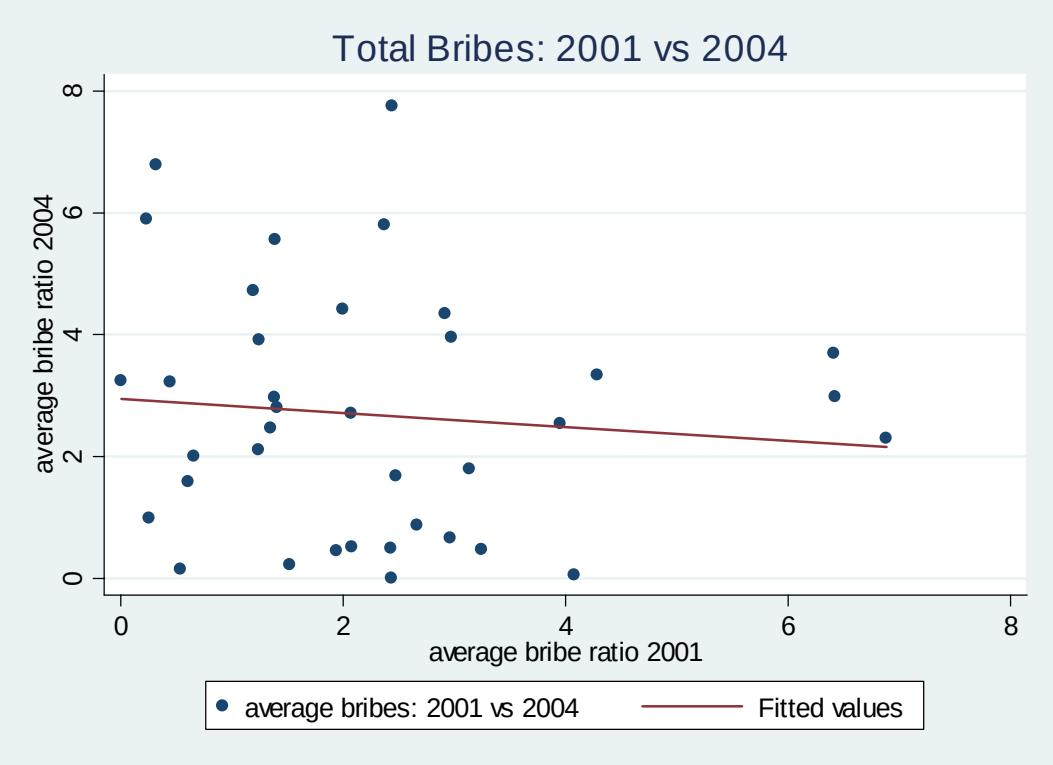
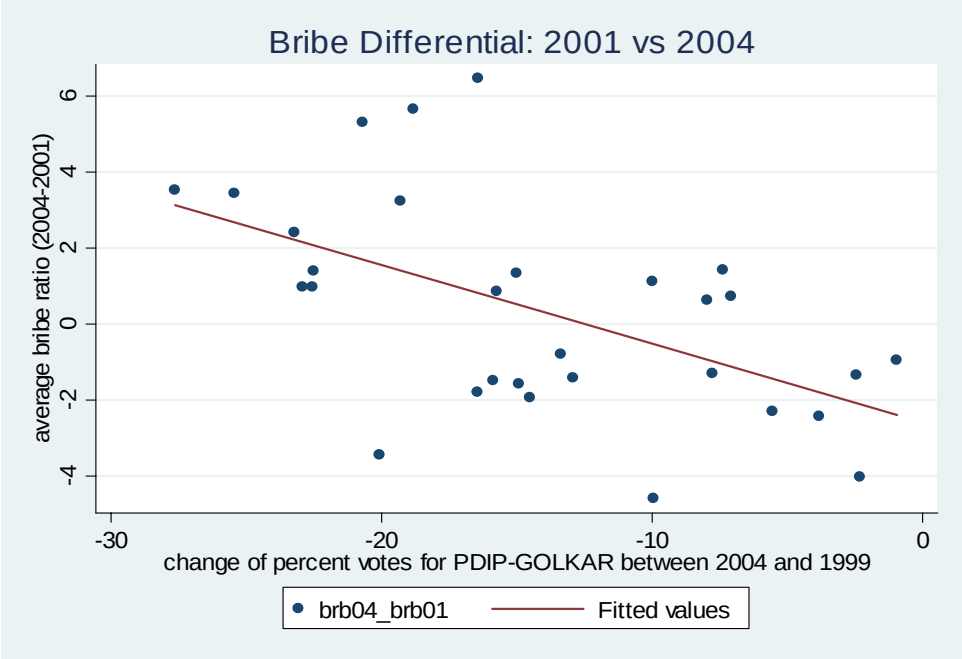


Figure 4. Change in PDIP-GOLKAR support and bribe activity

a) Change in bribe activity, 30 districts[a]



a. To check that the relationship is not simply reflecting mean reversion (in voting) or changing economic conditions, we report the following regression (with an $R^2 = .36$). Δ share PDIP-GOLKAR 04-99
= -1.87 - 1.08** Δ (bribe ratio 04-99) - .265** share PDIP-GOLKAR 99 + 7.26 % change GDP p.c.
(.425) (.112) (6.40)

b) 2004 bribe, activity all Java districts