The Role of Local Officials in New Democracies: Evidence From Indonesia*

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Abstract

New democracies experience greater electoral fraud and more clientelistic spending than established democracies. This paper shows that the body of appointed local officials that a new democracy inherits from the previous regime is a key determinant of the extent of these practices. With a unique dataset from the first post-Soeharto election in Indonesia, I show that the alignment of electoral results between village and district levels is considerably stronger for villages with appointed village heads than for those with elected village heads. I present a model that provides an intuitive interpretation of these results: Appointed officials have stronger incentives to influence voters because of their political career concerns. The pattern of turnover of appointed local officials after the first democratic election also corroborates the implications of the model.

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1 Introduction

The transitions of nondemocratic regimes to democracy present a number of economic and political challenges. In addition to experiencing political instability and social unrest, nascent democracies operate in the context of the institutional legacy of the previous nondemocratic regime, which

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can condition the outcome of the first democratic elections and thus the economic and political equilibrium. One of these legacies is the body of local officials:[1] In most democratic transitions, a majority of local officials selected during the nondemocratic regime remain in their positions at the time of the first democratic election. The difficulties inherent in undertaking several simultaneous reforms in the aftermath of the fall of a nondemocratic regime can prevent an immediate turnover in the government administration, especially among the lower- and local-level ranks.

There is extensive documentation of the fact that new democracies differ from established democracies in their economic and political outcomes. For instance, Brender and Drazen (2005) have shown that the political budget cycle—higher government spending during election years—is mostly driven by new democracies. Keefer (2007) finds that new democracies tend to rely more extensively than established ones on clientelistic policies and to underprovide nontargeted public goods. These patterns coexist with substantial anecdotal evidence that first democratic elections are more prone to experience electoral fraud and voter intimidation than elections in consolidated democracies. However, despite the fact that most of the clientelistic spending and voter intimidation takes place at the local level, we lack a good understanding of what incentives local officials have to engage in these practices, given the new political scenario that they face.

In this paper, I examine, theoretically and empirically, the behavior of local officials in the first election of the transition to democracy, by exploring the incentives that they face to influence voters. More specifically, I study how these incentives differ depending on whether the local officials are appointed or elected. I conduct the theoretical analysis in the context of a simple model of incomplete information, which incorporates a key ingredient that makes the model specific to the context of new democracies: I assume that the political leanings of local officials are private information, a natural assumption for regimes in transition. Given the repressive nature of nondemocratic regimes, it is likely that local officials with political views different from those of the dictator hide their real political leanings. This generates a high degree of uncertainty regarding the real political leanings of those who served in the nondemocratic administration.

The model predicts that appointed local officials have stronger incentives than elected local officials to signal their alignment with upper levels of government. This is so because the continuation of appointed officials in their positions will be decided by the incoming upper-level government. In contrast, the continuation of elected officials in their positions mainly depends on the decision of their local constituents. By exerting effort during the electoral campaign to influence voters, appointed officials can credibly signal their alignment with upper levels. When it appears that a candidate will win an upper-level seat by a wide margin—in a lopsided election—all appointed officials will exert support for the likely winner (i.e., appointed officials coordinate in a *pooling*

[1]Several scholars have documented the key role that local officials play in nondemocratic regimes and regimes in transition. Some examples are Baum and Shvchenko (1999), discussing the case of China; Magaloni (2006), on Mexico; Pepinsky (2007), on Malaysia; and Blaydes (2008) on Egypt.

equilibrium). When the upper-level seat is decided in a close election appointed officials support their preferred party (i.e., appointed officials coordinate in a *separating equilibrium*). Therefore, this paper highlights the fact that institutional arrangements at the local level—elections versus appointment systems—have the potential to be a key determinant of the extent of clientelistic behavior and vote buying in the transition to democracy.

The main contribution of this paper is to empirically test the predictions of the model about the electoral results and about appointed officials' turnover, using data from the first democratic election in Indonesia after the fall of the Soeharto's dictatorship. For a number of reasons, this is an ideal setting for testing the predictions of the model.

Indonesia has institutional variation in the method of selection of local officials. The country is divided into two types of villages: *desa*, where the village head is elected by villagers, and *kelurahan*, where the village head is appointed by the district mayor.[2] Furthermore, the first democratic election decided both the national parliament and the district mayoral seats.[3] This makes Indonesia the ideal case for examining the implications of the model on electoral results. In particular, I compare the electoral results of *desa* and *kelurahan* within districts when controlling for the main determinants of voting—demographic characteristics and public good provision. The remaining difference in terms of electoral outcomes is presumably attributable to the different campaigning and intimidation efforts of the village heads.[4] Then I examine whether *kelurahan* villages tended to align more than *desa* villages with the district electoral result, and whether this alignment depended on the party that was more likely to win the district election—that is, Soeharto's party or the main reformist party—or on whether the election was a closely contested or lopsided.

The second empirical strategy tests the predictions of the model about the subsequent turnover of appointed village heads. The model predicts that, once the new mayor takes office, she will dismiss the appointed village heads who are not truly her supporters, provided that she can identify them. Hence, we expect to observe high turnover after closely contested elections —when a separating equilibrium emerged—and low turnover after lospided elections.

My findings are as follows: First, I find that Soeharto's party was, on average, 5.5 percentage

[2] *Desa* villages tend to be more rural, while *kelurahan* tend to be more urban. Therefore, controlling for the differences in the level of urbaness is important for the econometric analysis. Still, there is some overlap between *desa* and *kelurahan* in terms of their observable characteristics: For historical reasons, some *kelurahan* were formed in quite rural areas. Also, the conversion of *desa* into *kelurahan* (as they became more urban) was stopped in 1992. Hence, I observe some *desa* villages that were quite urban, according to their observable characteristics, at the time of the first democratic election in 1999. See section 3.3 for further details.

[3] In particular, in the first democratic election of Indonesia post-Soeharto, the electorate voted simultaneously for the national and district legislatures. The national and district legislature designated the head of the executive branch of the corresponding level of government. See section 3.2 for further details.

[4] Hence, the underlying assumption is that once we control for this host of factors, the two type of villages would have similar underlying political leanings.

points more likely to win in villages that had appointed village heads, relative to villages that had elected village heads. This result is significant at the 1 percent level, robust to the inclusion of a broad set of controls and district fixed effects, and similar across different econometric methods (linear probability model, probit model, and propensity score matching). Consistent with the predictions of the model, this result is driven by districts where Soeharto's party won the election. More important, this effect is reversed in districts where the main reformist party won by a large margin. In those districts, the reformist party is 3.7 percentage points more likely to win in villages with an appointed village head, than in villages with an elected village head. Therefore, the empirical evidence reveals that the *kelurahan* electoral outcome is aligned with the outcome at the district level to a greater extent than is the outcome in *desa* villages. The model presented in this paper provides an intuitive interpretation for this result: Appointed village heads have stronger incentives to influence voters than do elected village heads because of their different political career concerns.

Second, I find a pattern of appointed village head turnover that is remarkably similar to the one predicted by the model: In districts where the main reformist party won by a tight margin, the villages where Soeharto's party won experienced a 7.4 percentage points higher probability of turnover of their appointed village heads than did the villages where another party won. This effect represents a 36% increase in the probability of turnover. Similarly, in districts where Soeharto's party won by a tight margin, the probability of appointed village head turnover was 19 percentage points lower in villages where Soeharto's party won than in villages where another party won. In contrast, no clear pattern of political retaliation emerged in districts where either party won by a large margin. This constitutes highly suggestive evidence that appointed village heads coordinated in separating equilibria in districts where the election was close, while they coordinated in pooling equilibria when the election was lopsided.

I conduct a series of robustness checks to rule out competing explanations. A main concern for the empirical strategy is the possibility that the classification of villages into *desa* and *kelurahan* categories was driven by political considerations. In particular, since *desa* villages were allowed to elect their village leaders it is possible that Soeharto's government was reluctant to classify as *desa*, those villages where there was a strong opposition to the regime. This is unlikely to explain my average results since it would introduce attenuation bias to my estimates. Also, this pattern of endogenous classification of villages cannot account for the heterogeneous nature of the electoral results or for the pattern of turnover of appointed village heads across districts. Nevertheless, in order to mitigate this concern, I conduct several robustness checks: I verify that there is no evidence of a different implementation of the classification of *desa* and *kelurahan* across districts, and I check that the results are robust to controlling for proxies of political opposition to the Soeharto regime.

A second concern relates to the possibility that the different voting attitudes of *desa* versus *kelurahan* were driven by other characteristics of these two types of villages, such as differences

in fiscal transfers, differences in the occupational composition of their populations, and differences in the level of democratic capital. Controlling for this additional set of controls does not affect the results of the paper. Finally, I test for alternative hypotheses that could explain the stronger alignment of *kelurahan* to upper levels, such as endogeneity of the district electoral result and higher transfers being targeted to aligned *kelurahan*, relative to aligned *desa*. I do not find support for any of these alternative explanations.

This paper is related to a number of different literatures. First, it relates to the literature that examines the specific workings of new democracies in terms of their economic and political outcomes. Some examples are Ellman and Wantchekon (2000); Brender and Drazen (2005, 2008, 2009); Keefer (2007); and Keefer and Vlaicu (2007). My paper contributes to this literature by analyzing the incentives to engage in voter intimidation and clientelism from the local government standpoint and by finding evidence of these patterns, using a novel dataset for the first democratic election in Indonesia post-Soeharto.

Second, this paper relates to the political science and economics literature on democratic capture by the elite or other interest groups by means of vote buying, voter cooptation, patronage networks, and the use of force or its threat. Some examples are Robinson and Verdier (2002); Dal Bó and Di Tella (2003); Wantchekon (2003); Acemoglu and Robinson (2006); Dal Bó (2007); Baland and Robinson (2008); Acemoglu, Robinson, and Santos-Villagran (2010); Acemoglu, Ticchi, and Vindigni (2008, 2010); Persson and Zhuravskaya (2011); and Finan and Schechter (2012). My paper contributes to this literature by focusing on the role of local officials as a legacy of the previous autocratic regime. Furthermore, this paper provides evidence that, in the context of regimes in transition, unless the reformist parties are expected to be the clear winners of the first democratic election, appointed local officials will contribute to the persistence of the autocratic status quo.

Third, this paper links to the literature that investigates the different incentives that elected versus appointed officials face. See, for instance, Besley and Coate (2003); Maskin and Tirole (2004); Alesina and Tabellini (2007, 2008); and Martinez-Bravo et al. (2011). However, to the best of my knowledge, this is the first paper to point out that even nonelected officials will have important electoral incentives in the elections for the politicians or officials who have decision rights over their appointment. Moreover, I highlight that these incentives will be intensified when there is an additional motivation to signal certain political leanings, as it is the case in new democracies.

Finally, this paper relates to the literature that studies corruption, political institutions and political participation in Indonesia. Some examples are Fisman (2001); Olken (2009, 2010); and Skoufias et al. (2011). However, none of these studies examines the within-district differences in electoral behavior of villages with appointed village heads versus those with an elected village heads.

The rest of the paper proceeds as follows. Section 2 presents the model and derives its empirical predictions; section 3 provides an overview of the Indonesian political structure and of the organi-

zation of the state; section 4 describes the data; section 5 explains the empirical strategy; section 6 presents the results; section 7 provides the robustness checks that rule out competing explanations; and finally, section 8 presents the conclusions.

2 Model

In this section, I develop a simple model to understand what incentives local officials face at the onset of the first democratic election and how these incentives vary depending on the method of selection of the local officials. For an easier comparison with the empirical part, I use the Indonesian terminology in the model: I refer to local officials as village heads and to the upper-level as district officials.[5]

2.1 Setup

Consider a district where two candidates are running for the seat of district mayor. One candidate belongs to party D (the dictator's party); the other one belongs to party R (the reformist party). Subscript $m \in \{D, R\}$ denotes this party affiliation, which is publicly known.

This district is divided in two type of villages villages. In n of them, the village head (he) is appointed by the mayor (she), while in the remaining villages, the village head is elected by plurality rule elections held at the village level. The superscript $v \in \{app, elec\}$ stands for the selection method of the village head in village v, with *app* and *elec* corresponding to appointment and election methods, respectively. Village heads have sympathies for one of the parties denoted by $t \in \{d, r\}$. A fraction δ of village heads is a sympathizer of party D, while the rest are sympathizers of party R. These political leanings are assumed to be private information, which is a natural specification for the first years of a democratic regime.[6]

District mayors have a preference for village heads who share the same political views: A mayor derives an additional utility payoff G for each village head who is ideologically aligned with her.[7] Upon taking office, the district mayor decides on the continuity of each appointed village head. This decision is captured by $\phi \in \{0, 1\}$: if $\phi = 0$ the district mayor dismisses a particular appointed

[5]However, the model is, to a great extent, generalizable to other situations of two tiers of government in which designation rights of appointed local officials rest on the upper tier and local officials have control over local patronage networks.

[6]The previous nondemocratic regime probably repressed those who had views different from the dictator's ideology. Thus, village heads with discrepant views from those of the dictator had strong incentives to hide their real political leanings. Also, the events that lead to the fall of a nondemocratic regime and the start of a transitional period may considerably shape political attitudes. Hence, it is likely that the early stages of the new democratic period are characterized by a high degree of uncertainty regarding real political leanings of village heads.

[7]G can have a variety of interpretations: It can capture the utility that the mayor derives from the implementation of her preferred policies. It can also account for the mayor's expectation of obtaining higher electoral support in subsequent elections from a village in which the village head is a supporter of her party.

village head; if $\phi = 1$ the district mayor retains him. In case of dismissal, the mayor incurs costs κ that capture the disutility of searching for a suitable candidate for the open position. From the point of view of the mayor, the benefit of taking that action is that she will be able to appoint as village head one of her cronies who she knows for sure is aligned with her. Overall, the utility that district mayors of party D and R, respectively, derive from a village with an appointed village head is

$$V_D^{app}(\phi, t) = \phi G \mathbf{1}_{\{t=d\}} + (1-\phi)[G-\kappa] \quad (1)$$

$$V_R^{app}(\phi, t) = \phi G \mathbf{1}_{\{t=r\}} + (1-\phi)[G-\kappa] \quad (2)$$

where $\mathbf{1}_{\{t=j\}}$ is a dummy that takes value 1 if the village head is a party j sympathizer, and 0 otherwise.

Similarly, the utility that district mayors of party D and R, respectively, derive from a village with an elected village head is

$$V_D^{elec}(t) = G \mathbf{1}_{\{t=d\}} \quad (3)$$

$$V_R^{elec}(t) = G \mathbf{1}_{\{t=r\}} \quad (4)$$

I now define the preferences of village heads. If a village head is able to keep his position, he obtains rents Z from being in office, whereas if he is fired, he obtains his reservation utility $\underline{U}$, which satisfies $Z > \underline{U}$. During the mayoral electoral campaign, each village head decides the degree of effort to influence voters, and the candidate this effort is aimed to support. Let $e \in [-\eta, \eta]$ be the level of effort exerted by a particular village head. Positive values of effort represent support for party D and negative values represent support for party R. The capacity of village heads to influence voter behavior is particularly plausible in the context of the first democratic election. Local patronage networks and other cooptation mechanism, which are the cornerstone of many nondemocratic regimes, are likely to still be present at the onset of the first democratic election. Exerting effort is costly for village heads, and this is captured by the cost function $C_t(e)$. The utility functions of village heads who are party t sympathizers are

$$U_t^{app}(e, \phi) = \phi Z + (1-\phi)\underline{U} - C_t(e) \quad (5)$$

$$U_t^{elec}(e) = Z - C_t(e) \quad (6)$$

where $\phi \in \{0, 1\}$ captures the reappointment decision. $C_t(e)$ is defined by $C_d(e) = (\overline{\alpha}\mathbf{1}_{\{e<0\}} + \underline{\alpha}\mathbf{1}_{\{e>0\}})C(|e|)$ if $t = d$ and $C_r(e) = (\underline{\alpha}\mathbf{1}_{\{e<0\}} + \overline{\alpha}\mathbf{1}_{\{e>0\}})C(|e|)$ if $t = r$ where $C(.)$ is an increasing and convex function defined over the absolute value of effort, and $\mathbf{1}_{\{.\}}$ is the indicator function. Notice that exerting effort is more costly for a village head when this favors his least preferred candidate. This is captured by the parameters $\overline{\alpha}$ or $\underline{\alpha}$, which satisfy $\overline{\alpha} > \underline{\alpha}$.

Finally, I specify the way effort of village heads affects the electoral outcome. I assume there is common knowledge about the share of the population that has a preference for party D, the

dictator's party, and denote that proportion by π. Two other factors can affect the electoral outcome: first, a valence shock φ uniformly distributed in the interval $[\frac{-1}{2\psi}, \frac{1}{2\psi}]$, which captures the unexpected component of the relative popularity of candidate D with respect to candidate R; second, the sum of efforts that village heads exert to influence voters, denoted by $E = \sum_{i=1}^{N} e_i$. Then, the realized vote share of candidate D, $\widetilde{\pi}$, can be specified in the following way:

$$\widetilde{\pi} = \pi + \varphi + g(E) \tag{7}$$

Function $g(.)$ captures the way total effort affects the realized vote share. In the rest of the text I assume $g(E) = \theta E$, for analytical simplicity.[8]

I assume that effort of village heads is observable by both candidates for mayor. One possible interpretation of this specification is that there is perfect information about the preferences of the median voter in each village. Any deviation of the electoral result from the median voter preference is attributed to the effort exerted by the village head. Also, village heads themselves might have an incentive to make their effort level observable and, therefore, may be vocal about it.

The probability that candidate D wins the mayoral election can be expressed as a function of total effort level as given by

$$p(E) = \underset{\varphi}{\text{Prob}}[\widetilde{\pi} \geq \frac{1}{2}] = \psi[\pi + \theta E - \frac{1}{2}] + \frac{1}{2} \tag{8}$$

The timing of events is as follows:

1. Taking into account π, every village head chooses a level of effort $e_i \in \mathbb{R}$.
2. The electoral outcome is realized, and the level of effort that village heads exerted is observed. The candidate for mayor who obtains the highest number of votes takes office.
3. The new mayor decides whether to retain or dismiss every appointed village head $\phi_i \in \{0, 1\}$.
4. Payoffs are distributed, and the game ends.

2.2 Characterization of Equilibria

First, I describe the optimal level of effort that elected village heads exert in any equilibrium. Notice that, since the continuity of elected village heads in their positions neither depends on which mayor wins the election nor on the strategies mayors play, it is straightforward to see that elected village heads do not find it optimal to exert effort. The following proposition summarizes this result.

Proposition 1. *In any equilibrium, elected village heads exert zero effort regardless of their political leanings*

$$e_d^{elec} = e_r^{elec} = 0$$

[8]The model allows for a more general function $g(.)$. See section 10.1.3 in the Online Appendix for further details.

Elected village heads keep their positions if either mayor D or mayor R wins the election. At the end of the game, elected village heads receive payoff Z with certainty.

Proof. See the Appendix.

This result should not be interpreted as predicting that elected village heads will never exert effort to support one party or another. They might derive some intrinsic utility from the victory of a particular candidate. Also, district mayors might distribute additional funds to village heads who are aligned with them. In these scenarios, an elected village head might find it optimal to exert some amount of effort during the mayoral electoral campaign. However, there is no reason why these additional incentives should not be also present for appointed village heads. The level of effort e in this model should be interpreted as the additional effort that appointed village heads exert over that of elected village heads, which is motivated by the different selection mechanism of village heads.

We now examine the decision of appointed village heads regarding their level of effort. Notice that their effort has a twofold motivation: First, it can potentially affect the outcome of the election, and second, it can signal a particular political affiliation. When analyzing the optimal behavior of an appointed village head, the setting constitutes a dynamic game of incomplete information, more specifically a *signaling game* between the village head and the two potential candidates for mayor. The solution concept I use to solve this game is Perfect Bayesian Equilibrium (PBE henceforth), and I refine the set of equilibria using the Intuitive Criterion and the Divinity Criterion.[9]

2.2.1 Mayors' Optimization Problem

Upon taking office, the new mayor observes the levels of effort exerted by appointed village heads and decides whether to retain or dismiss each of them. She decides to keep a particular village head as long as the expected utility from doing so is higher than the expected utility of dismissing him. For mayor D, this will be the case if $\mu(t = d|e)G \geq G - \kappa$, where $\mu(t = d|e)$ is the posterior probability that a village head is type d, given the fact that he exerted effort level e. Mayors derive this posterior probability using Bayes' rule when applicable.[10] Similarly, if the candidate for mayor R takes office, she will retain the village head as long as $[1 - \mu(t = d|e)]\, G \geq G - \kappa$. Notice that the mayors' decision depend on their assessment of how likely the village head is to be politically aligned with them, and on the relative benefits of alignment relative to firing costs.

[9]See the Proof of Proposition 2 in the Appendix for formal definitions of the solution concept and equilibrium refinements. In the rest of this subsection I restrict attention to the decision of appointed village heads and, in order to minimize the use of notation, I omit the superscript *app*.

[10]Bayes' rule is $\mu(t = d|e) = \frac{P(e|t=d)\delta}{P(e|t=d)\delta + P(e|t=r)(1-\delta)}$, where $P(e|t)$ is the probability that an appointed village head of type t exerts level of effort e.

2.2.2 Pooling Equilibria

Next, I analyze the set of pooling PBE of this game, in which both types of village heads—sympathizers of party D and sympathizers of party R—exert the same level of effort $e^*(t) = e^*$ for $t \in \{d, r\}$ and mayors cannot update their beliefs along the equilibrium path—that is, $\mu(t = d|e^*) = \delta$. Consider the following strategies and beliefs as a candidate for pooling PBE:

$$\begin{aligned} \phi_D^*(e) &= \begin{cases} 1 \text{ if } e = e^* \\ 0 \text{ if } e \neq e^* \end{cases} \qquad e_i^*(t) = e^* \geq 0 \text{ for } t \in \{d, r\} \\ \phi_R^*(e) &= \begin{cases} 0 \text{ if } e = e^* \\ 1 \text{ if } e \neq e^* \end{cases} \qquad \begin{aligned} &\mu(t = d|e = e^*) = \delta \\ &\mu(t = d|e \neq e^*) = 0 \end{aligned} \end{aligned} \tag{9}$$

where e^* is defined by[11]

$$\frac{\psi\theta\left[Z - \underline{U}\right]}{\underline{\alpha}} = C'(e^*) \tag{10}$$

This set of strategies and beliefs constitutes a PBE as long as the following two conditions hold:

$$\delta > \frac{G - \kappa}{G} > 1 - \delta \tag{11}$$

$$\pi \geq \frac{1}{2} - \theta e^*(n-1) + \frac{(\overline{\alpha} - \underline{\alpha})C(e^*)}{2\psi\left[Z\text{-}\underline{U}\right]} \tag{12}$$

Condition (11) guarantees that the strategies that mayors play are optimal: The proportion of appointed village heads that are party D sympathizers has to be high enough for mayor D to find it optimal to retain all appointed village heads upon winning. The opposite holds for mayor R. Condition (12) ensures that type r village heads do not have incentives to deviate.[12]

A number of features from this equilibrium are worth noticing. First, condition (12) highlights that the stronger the underlying support for party D in a district (higher π), the more likely this equilibrium is to exist. This result is actually very intuitive: When the election is expected to be lopsided and party D is very likely to win, all the appointed village heads have a strong incentive to pretend to be supporters of the likely winner. It is optimal for them to do so in order to keep their jobs as village heads once candidate D becomes district mayor.[13]

[11] Throughout the text I will assume that the bounds of feasible effort levels are large enough so that we always have interior solutions (i.e., $-\eta < e^* < \eta$).

[12] The optimal deviation of type r is to $-e^*$ as defined by (10). For further details see the proof of Proposition 2 in the Appendix.

[13] Condition (12) provides some additional insights. First, the higher n, the number of appointed village heads, the more likely this equilibrium is to exist: A large number of appointed village heads exerting effort to support party D discourages deviations since a single deviation would lead to a very small increase in the probability of victory of candidate R. Second, conditional on a given level of equilibrium effort, this equilibrium is more likely to exist, the

Notice that along the equilibrium path we expect to observe little turnover of appointed village heads. In the likely event that candidate D wins the district elections, she will be unable to distinguish party D sympathizers from party R and, for this set of parameters, it would be optimal for her to retain all appointed village heads.

There are infinitely many pooling PBEs in the set parameters defined by condition (11). I focus on the pooling PBE in which appointed village heads exert effort defined by (10). In the Online Appendix I show that this equilibrium satisfies the Intuitive Criterion, formalized by Cho and Kreps (1987), and is the only pooling PBE that satisfies the Divinity Criterion of Banks and Sobel (1987).[14]

Naturally, there is another type of pooling PBE symmetrical with the one just described. In districts in which there is a large proportion of party R sympathizers among village heads and among the population, a pooling equilibrium emerges in which all appointed officials give their support to party R.[15]

2.2.3 Separating Equilibria

Let us now turn to the set of separating equilibria in which each type of village head takes an action perfectly distinguishable from the action of the other type. Consequently, types are truthfully revealed along the equilibrium path. Consider the following set of strategies and beliefs as a candidate for separating PBE.

$$\begin{aligned} \phi_D^*(e) &= \begin{cases} 1 \text{ if } e \geq 0 \\ 0 \text{ if } e < 0 \end{cases} & e_i^*(t=d) &= e^* \\ & & e_i^*(t=r) &= -e^* \\ \phi_R^*(e) &= \begin{cases} 0 \text{ if } e \geq 0 \\ 1 \text{ if } e < 0 \end{cases} & \mu(t=d|e) &= \begin{cases} 1 \text{ if } e \geq 0 \\ 0 \text{ if } e < 0 \end{cases} \end{aligned} \tag{13}$$

where e^* is implicitly defined by (10).

The following additional conditions ensure that a particular type d village head does not want to pretend to be type r by deviating to a negative level of effort, and vice versa.

lower the partisan differences among village heads, $\overline{\alpha} - \underline{\alpha}$; the higher the marginal effect of effort on vote shares, θ; and the higher the rents from office relative to the reservation utility, $Z - \underline{U}$. However, these parameters also affect the equilibrium level of effort, and the indirect effect on effort needs to be accounted for in order to assess the overall effect. In particular, the equilibrium level of effort is higher, the higher the rents from office relative to the reservation utility, $Z - \underline{U}$; the higher the marginal effect of effort on vote shares, θ; the lower the variance of the valence shock, $1/\psi$; and the lower the marginal cost of supporting the preferred party, $\underline{\alpha}$.

[14] The main intuition why this effort level satisfies the above equilibrium refinements is because e^*, as defined by (10), maximizes the ex-ante expected equilibrium payoffs of type d. Hence, there is no combination of deviation and speech that could make type d better off. On the other hand, type r could reveal his type by undertaking certain deviations, but it is not profitable for him to do so because inequality (12) holds.

[15] See section 9.2.2 in the Appendix for further details.

$$\pi \geq \frac{1}{2} - \theta n \left(2\delta - 1\right) e^* + \theta \frac{e^* + \widetilde{e}}{2} - \frac{\overline{\alpha} C(\widetilde{e}) - \underline{\alpha} C(e^*)}{2\psi(Z - \underline{U})} \tag{14}$$

$$\pi \leq \frac{1}{2} - \theta n \left(2\delta - 1\right) e^* - \theta \frac{e^* + \widetilde{e}}{2} + \frac{\overline{\alpha} C(\widetilde{e}) - \underline{\alpha} C(e^*)}{2\psi(Z - \underline{U})} \tag{15}$$

where $\widetilde{e}$ is the optimal deviation level of effort which is implicitly defined by[16]

$$\frac{\psi\theta \left[Z - \underline{U}\right]}{\overline{\alpha}} = C'(\widetilde{e}) \tag{16}$$

This equilibrium provides a number of insights. First, notice that, π, the underlying strength of party D in the district, needs to take intermediate values for this equilibrium to exist. In other words, separating equilibria will emerge when the election is expected to be close. Intuitively, both candidates for mayor need to have possibilities of winning the election. Otherwise, some village heads would have strong incentives to deviate by pretending to be supporters of the likely winner.

Second, notice that along the equilibrium path of this separating PBE, types are truthfully revealed. Hence, the model predicts high turnover of village heads in districts where separating PBE emerge: Once the new district mayor takes office, she will be able to identify and dismiss all appointed village heads who are not sympathizers of her party.

2.3 Summary of Results and Empirical Predictions

Proposition 2.

1. *If condition* $1 - \delta > \frac{G-\kappa}{G} > \delta$ *holds and* π *is low enough—inequality (25) is satisfied—a pooling PBE emerges in which all appointed village heads exert effort to support party R. The average effort of appointed village heads is* $-e^* < 0$*, where* e^* *is defined by (10). If mayor R wins the election, she retains all appointed village heads, while if mayor D wins the election, she dismisses all of them.*

2. *If* π *takes intermediate values—inequalities (14) and (15) hold—a separating PBE emerges. In this equilibrium, type d appointed village heads exert effort* e^**, as defined by (10), while type r appointed village heads exert effort* $-e^*$*. If mayor D wins the election she retains appointed village heads who exerted effort* e^* *and dismisses the rest of them. If mayor R wins the election, she retains appointed village heads who exerted effort* $-e^*$ *and dismisses the rest of them. The average effort of appointed village heads is* $(2\delta\text{-}1)e^*$*.*

3. *If condition* $\delta > \frac{G-\kappa}{G} > 1 - \delta$ *holds and* π *is high enough—inequality (12) is satisfied—a pooling PBE emerges in which all appointed village heads exert effort to support party D.*

[16] The optimal deviation of village head type d is to $-\widetilde{e}$, while the optimal deviation of type r village head is to $\widetilde{e}$.

The average effort of appointed village heads is $e^* > 0$, as defined by (10). If mayor D wins the election, she retains all appointed village heads, while if mayor R wins the election, she dismisses all of them.

All the equilibria described in this proposition satisfy the Intuitive Criterion and are the unique equilibria (for the corresponding set of parameters) that satisfy the Divinity Criterion.

Proof. See the Appendix and the Online Appendix for proofs and further discussion.

The combination of the results described in Propositions 1 and 2 leads to two sets of empirical predictions.

The first set of predictions relate to the effort exerted by appointed village heads relative to elected village heads across districts. In districts in which the election is expected to be lopsided appointed village heads unambiguously exert greater effort than elected village heads to support the likely winner of the election for mayor. Notice that this prediction is independent of which party is more likely to win the election: In those districts that are the strongholds of the dictator's party we expect appointed village heads to continue to support the dictator's party. However, we expect to observe a reversal effect in districts that are the strongholds of the reformist party: In those districts appointed village heads will instead exert effort to support the reformist party.

In districts where the election for mayor is expected to be close, the model predicts that each appointed village head exerts effort to support their preferred party. Hence, whether the average effort of appointed village heads supports the dictator's party or the reformist party depends on the proportion of types. Since the incumbent appointed village heads were designated during the non-democratic period, it is likely that the average effort supports the dictator's party. Furthermore, to the extent that the proportion of village heads that are dictator's party sympathizers, δ, is positively correlated with the proportion of citizens who have a preference towards the dictator's party, π, we expect average effort of appointed village heads to increase with π.

The second set of empirical predictions relates to the turnover of appointed village heads after the new district mayor takes office. The model predicts high turnover of appointed village heads in districts where a separating equilibrium emerges: Types are truthfully revealed along the equilibrium path and the new mayor can identify and dismiss her nonsupporters. In contrast, in districts where a pooling equilibrium emerges we expect to observe low turnover, since there was no truthful revelation of types.[17]

In section 6 of this paper, I test these empirical predictions with data from the Indonesia's first democratic election post-Soeharto and the subsequent turnover of appointed village heads.

[17]Notice that these empirical predictions are starkly different from those derived by other theoretical models in which stronger electoral victory provides the new district mayor a stronger mandate to dismiss appointed village heads.

3 Overview of the Indonesian Historical Context

3.1 Political Context

The regime of General Soeharto, also known as the New Order, lasted more than 30 years, from 1966 to 1998. During this period, starting in 1971, elections were held every 5 years for the legislatures at the national, provincial, and district level. However, these elections were far from being expressions of popular sovereignty. Only moderate and highly government-controlled opposition parties were allowed to participate in these elections. Golkar (Functional Groups), Soeharto's electoral machinery, was always the overwhelming winner, achieving vote shares between 63% and 75 percent. In contrast, opposition parties PDI (Indonesia Democracy Party) and PPP (Development Unity Party) obtained vote shares ranging from 3% to 15% and 16% to 29 percent, respectively.[18]

Several scholars have pointed out that one of the most important reasons behind Golkar's landslide victories was the extensive use of local patronage networks, voter intimidation, and vote-buying practices, usually rooted at the village level (see, for instance, Evers 2000; King 2003; Haris 2004; Antlöv 2004). These practices took a variety of forms: from rewarding villagers with two head of cattle if Golkar obtained a large victory in the village (Evers 2000), to threatening voters with sanctions or with being accused of subversion if they did not vote for Golkar (Haris 2004). The key actors of these mechanisms of voter cooptation were village heads, who had the mandate of mobilizing voters to support Golkar and were rewarded or punished by upper levels of government on the basis of village electoral results (Antlöv 2004). Golkar took advantage of the whole structure of this patronage state, while PPP and PDI had very limited means and were not even able to campaign below the subdistrict level.

In March 1998, the imminent reappointment of Soeharto as President for a seventh consecutive term by his rubber-stamp Parliament sparked protests and riots throughout the country. Discontent with the regime had mounted because of the rampant corruption levels, which in many cases involved Soeharto's own family, together with the economic erosion produced by the Asian economic crisis of 1997. This general lack of confidence made Soeharto lose crucial support, and he was finally forced to step down in May 1998.

After the fall of Soeharto, a transitional government was established and several reforms were implemented. One of the most important ones was the initiation of a process of political and fiscal decentralization that transferred significant decision rights and spending capabilities to the districts (Hofman and Kaiser 2006).

The first democratic election of the post-Soeharto era took place in June of 1999. On the same

[18]The first election of the New Order, in 1971, was slightly different. Ten parties were allowed to participate, but still Golkar obtained 62.8 percent of the votes. In the next elections, the nine opposition parties were forced to merge into just two. PNI, Murba, IPKI, Partai Katolik, and Parkindo were forced to form PDI, while NU, Parmussi, PSS, and Peri merged into PPP.

day, elections were held for the national, provincial, and district legislatures, although there were few split votes.[19] The two parties that were considered most likely to win the election were PDI-P[20] and Golkar. PDI-P campaigned on the necessity of deepening the democratic reforms, whereas Golkar represented the continuity of Soeharto's policies and the persistence of the autocratic status quo. PDI-P was able to obtain the largest vote share, with 33.7% of the votes. Still Golkar obtained the second position, with 22.4% of the votes.[21]

PDI-P failed to form the necessary parliamentary majority to obtain the presidency for their leader, Megawati Sukarnoputri. Instead, Abdurramah Wahid, the leader of PKB was elected president with the support of Golkar and other nonelected members of Parliament, mostly from the military and the security forces.

Although the first election post-Soeharto seemed fair on the surface, many analysts pointed out that more subtle cooptation mechanisms were still in place and there were multiple reports of electoral violations related to vote buying and money politics (see King 2003; Antlöv 2004; Robinson and Hadiz 2004; Schiller 2009; Sulistiyanto 2009). For instance, Hadiz (2004) quite explicitly summarizes this view:

> The most notable aspect of this constellation is that predatory interests nurtured under Soeharto regime's formerly vast, centralized system of patronage - which extended from the Presidential Palace in Jakarta down to the provinces, towns and villages - have largely survived and remained intact. (p.711)

Given this persistence of patronage networks and other voter cooptation mechanisms, it is likely that at the onset of the first democratic election, village heads still had a considerable capacity to influence voters' decisions.

3.2 Electoral Process

As mentioned in the previous section, in the 1999 elections, the electorate voted simultaneously for the national, provincial, and district legislatures. The ballots only contained the names and logos of the different parties and did not contain the list of candidates. As a result there were few split votes and the electoral results at the three different levels were almost identical. The newly constituted legislatures, in turn, elected the head of the executive branch of the corresponding level of government. The selection of district mayors was staggered across time because the incumbent district mayors were allowed to finish their 5-year terms. This generated exogenous variation in

[19] See section 3.2 for more details about the electoral process.

[20] PDI-P participated in the New Order elections under the acronyms PDI.

[21] The following most voted parties were PKB (National Awakening Party), PPP, and PAN (National Mandate Party) with respective vote shares of 12.7%, 10.7% and 7.1%. Each of the other parties obtained fewer than 2% of the votes.

timing of the election of the new district mayors as documented by Skoufias et. al. (2011).[22] See section 10.2 in the Online Appendix for additional information on the electoral rules and political context.

3.3 Administrative Structure and *Desa* - *Kelurahan* Classification

At the time of the first democratic election, Indonesia was divided into 27 provinces and each province was divided into districts, of which there were 306.[23] There are two types of districts: *kota*, or urban districts (63 in 1999), and *kabupaten*, or rural districts (243 in 1999). Each district is divided into *kecamatans*, or subdistricts, and each subdistrict is, in turn, divided into villages, which are the lowest subdivision of the administration. There are two types of villages: *desa*, which tend to be more rural, and *kelurahan* which are more urban. Most of the villages in *kota* districts and other cities are *kelurahan*, while most villages in *kabupaten* districts are *desa*. Even though there have been changes in the number of regions, the structure of the state and the typology of the divisions has remained the same throughout the decentralization and democratization period.

The classification of villages into *desa* and *kelurahan* started after the approval of the Village Law no. 5 of 1979. This law aimed to achieve governmental uniformity at the village level throughout Indonesia. Before 1979, village government varied across regions and its organization was based largely on local customs (Kato 1989). By default, villages were classified as *desa* and the process of *kelurahan* formation was conducted in a centralized way by the Ministry of Home Affairs. *Kelurahan* could be formed in *kota* districts, in the capital of *kabupaten* districts, and in the surroundings of the capital of each *kecamatan* or subdistrict. Although ministerial decrees specified some requirements that villages had to satisfy in order to be classified as *kelurahan*, none of these requirements was quantitative or strictly enforced.[24,25]

Despite the fact that *kelurahan* villages are, on average, more urban than *desa* villages, certain aspects of the process of *kelurahan* formation generate some overlap between the two village cate-

[22]Notice that this is relevant for the results on turnover of appointed village heads that will be presented in section 6.2: We expect to observe the turnover effects predicted by the theory only after the new mayor takes office.

[23]The number of districts substantially increased in the decentralization period: from 306 in 1999 to 434 in 2003.

[24]In order to obtain more details on how this classification was conducted, in June 2009, I interviewed several high-ranking officials of the Ministry of Home Affairs, in Jakarta, who were involved in the classification. They pointed out that they did not follow any more specific criteria than the guidelines stated in the law and ministerial decrees. Although I did not directly ask whether there were political considerations in the classification, I asked whether *kelurahan* formation was encouraged or discouraged in certain areas (support for Golkar varied considerably across regions). According to these officials, all areas were treated equally and they only considered the level of urbanness for *kelurahan* formation. (This is corroborated by my data analysis, as discussed in section 7.1: I do not find evidence that the urbanness requirements for being classified as *kelurahan* were different across districts on the basis of strength of Golkar in the district).

[25]Some of the requirements for *kelurahan* formation were having good communications and transportation systems, good facilities, a population larger than 2,500 habitants, and "urban traits."

gories in terms of their observable characteristics. As previously mentioned, *kelurahan* were formed in the surroundings of the capital of the subdistrict, even in rural districts.[26] These *kelurahan* are quite rural in terms of their observable characteristics. Also, in 1992, the Ministry of Home Affairs stopped the natural conversions of *desa* into *kelurahan* as they became more urban (Niessen 1999).[27] This leads to the existence of some villages in our sample that are classified as *desa* despite being quite urban according to their observable characteristics.

Desa and *kelurahan* villages have some differences regarding their village government structure. The village head of *desa* is elected by villagers every 8 years for a maximum of 2 terms,[28] whereas the village head of *kelurahan* is appointed by the head of the district. De jure, *desa* government institutions have some authority over local affairs and over the village budget. However, some scholars have suggested that during Soeharto's regime, most of the decisions were de facto taken by higher levels of government (Evers 2000). *Kelurahan* village government is managed in a more top-down fashion, and the *kelurahan* head is a government official. The head of the district has the right to appoint the *kelurahan* heads in that district. During Soeharto's regime, the Ministry of Home Affairs centrally controlled the decisions relative to the appointment and dismissal of *kelurahan* heads (and other civil servants). However, during the decentralization period, extensive rights were transferred to the districts. In particular, the approval of Law no. 22 of 1999 (one month before the first democratic election was held), provided extensive rights to the heads of the districts to make decisions on the careers of appointed village heads and other civil servants. In particular, districts heads were given rights to conduct appointments, transfers, and dismissals of appointed village heads. Furthermore, district heads have rights to stipulate the pensions, salaries, and other benefits of the appointed village heads.[29] Hence, it is very likely that, in this context, *kelurahan* heads were particularly concerned about the electoral outcome of the first democratic election at the district level.

4 The Data

4.1 Data Sources

The most important data source that I use in this paper is the Census of Villages (*Potensi Desa*, PODES), which is conducted every 4 years by the Statistics Agency of Indonesia (*Badan Pusat Statistik*). Interviews are conducted with the whole universe of 66,000 villages of Indonesia, and

[26] For further details, see Indonesia Ministry of Home Affairs Regulation no. 5 of year 1982.

[27] The reason provided by the Ministry of Home Affairs for this change in policy was the financial cost of the conversion of *desa* into *kelurahan*, mainly because central government resources must allocate the salaries of *kelurahan* heads, while village sources pay the salaries of *desa* heads. See section 10.2 for further details.

[28] With the implementation of Law no. 22 of 1999, the term length of *desa* heads was changed to 5 years with a maximum of two terms of service (Article 96).

[29] Article 76 of Law no. 22 of 1999.

the data contain information on a wide variety of village characteristics. For the purpose of this paper, I use the 1996, 2000, and 2003 waves.

The 2003 wave contains information on the 1999 parliamentary election at the village level. In particular, it contains the ranking of the three most voted parties in the village in the previous legislative election. Unfortunately, the survey did not report information about the vote shares of each party at the village level, but the ranking of the three most voted parties serves as an approximation. The village characteristics used as controls are obtained from the 1996 wave, since this is the wave prior but closest to the election.

I also use data on the electoral results at the district level that was provided by the Electoral Commission of Indonesia (*Komisi Pemilihan Umum, KPU*). These data contain the vote shares obtained by each party at the district level.[30,31]

4.2 Descriptive Statistics

Table 1 shows the descriptive statistics. Columns 2 and 3 display descriptive statistics for the whole sample, while columns 4 to 7 disaggregate the information by *desa* and *kelurahan* villages. The sample contains 43,394 villages, of which 3,036 are *kelurahan* and 40,358 are *desa*.[32]

A comparison between columns 4 and 6 shows that *kelurahan* and *desa* differ on several dimensions. This highlights the importance of controlling for a wide set of characteristics for the validity of the empirical analysis. The first ten rows correspond to the electoral results at the village level for the 1999 parliamentary election. As we can see, both Golkar and PDI-P are, on average, more likely to win in *kelurahan* than in *desa* villages. In contrast, the other smaller parties are more likely to win in *desa* villages. Next, we can see the descriptive statistics of the geographic characteristics. As expected, *kelurahan* villages tend to be more urban than *desa*. Sixty-two percent

[30]The village-level electoral results reported in PODES are broadly consistent with the district-level electoral results reported by KPU.

[31]The additional data sources used are described in the Online Data Appendix, section 10.3.

[32]Each PODES dataset contains approximately 66,000 observations. However, 11,000 of them do not provide an exact match or have some missing information across the three different PODES waves. In addition, in order to ensure that my results are not driven by too few observations, I exclude from the analysis districts in which there are fewer than 5 *desa*, or fewer than 5 *kelurahan*. This reduces the sample by 12,000 additional observations. Restricting the sample to districts with enough *desa* or *kelurahan* is analogous to the imposition of common support in propensity score matching models. The reason why so many observations are dropped is that, in some urban districts, or *kota*, all the villages are *kelurahan*. For instance, this is the case of the capital city of Jakarta. In some other rural districts, or *kabupaten*, all the villages are *desa* (e.g., Jombang, in East Java). These districts are very different in nature from districts that have enough variation in the type of village and, consequently, districts with few *desa* or few *kelurahan* do not contribute to a more precise estimation of the covariates. Since my empirical strategy compares *desa* and *kelurahan* within districts, the lack of enough variation of these two types of villages hinders the estimation of the treatment effect of being *kelurahan* for those districts. Fortunately, in most districts, there is a sufficient amount of variation to permit undertaking a relevant econometric comparison. In particular, the baseline sample contains information on 199 districts. See section 10.3 in the Online Data Appendix for further details.

of *kelurahan* are classified as urban according to the Statistics Agency of Indonesia, whereas only 6% of *desa* belong in this category. Compared with *desa*, *kelurahan* villages tend to have fewer households whose main occupation is in agriculture, a smaller percentage of village land dedicated to agricultural uses, a larger population, a greater population density, and they tend to be closer to the capital of the subdistrict. However, notice that the average *kelurahan* in our sample is still quite rural: 48% of land is devoted to agricultural activities, and almost 40% of *kelurahan* are classified as rural according to an alternative definition of the statistics agency. This suggests that there is enough overlap between *desa* and *kelurahan* in terms of their observable characteristics. Regarding the religious controls, we observe that, in general, *desa* villages tend to have a higher number of religious facilities per capita. This finding is likely to be mainly driven by the fact that *desa* villages are more sparsely populated. Finally, *kelurahan* tend to have a higher number of TVs, and a higher number of health and educational facilities per capita. The only exception is the number of primary schools per capita, which is higher in *desa* villages. Again, this is likely to be driven by *desa* villages being more sparsely populated. Since all these characteristics may be important determinants of voting behavior, I control for them all in my preferred econometric specification.[33] Finally, at the end of the table, I provide some additional statistics regarding the number of administrative subdivisions and the district electoral results.

5 Empirical Strategy

The model presented in section 2 leads to two sets of empirical predictions regarding the effort exerted by appointed village heads to influence voters and the turnover of appointed village heads. In this section, I describe how these theoretical predictions can be tested in the particular context of the Indonesian transition to democracy.

5.1 Econometric Specifications on Electoral Results

The model in section 2 makes a series of predictions regarding the way the effort of appointed village heads will compare with the effort of elected village heads across districts. Unfortunately, there are no available direct measures of the effort that village heads exert to influence voters. Instead, the strategy that I follow in order to test the predictions of the model relies on comparing the electoral

[33]The next set of rows displays the descriptive statistics of some of the additional controls used in the robustness checks. 9% of *kelurahan* villages experienced some conflict in 2003, compared with 5% of *desa* villages. *Kelurahan* are substantially more likely than *desa* to have a resident who is a member of the army. *Kelurahan* are also 13 percentage points more likely to have a police station. These differences are likely to be a result of *kelurahan* being formed in the surroundings of the capital of the subdistrict. However, since this could reflect differences in the underlying opposition to Golkar or a different occupational composition in these two types of villages, it is important to verify that the results are robust to these additional controls. Interestingly, *desa* and *kelurahan* do not differ on the change in health facilities or the change in sources of funding during the decentralization period.

results of *desa* and *kelurahan*, within districts and controlling for the main determinants of voting behavior. The underlying assumption is that once I control for this host of factors, the two type of villages would have similar underlying political leanings, and therefore, any remaining differences in voting behavior can presumably be attributable to the differential efforts of their village leaders. Given the important role that local officials played in the determination of the electoral outcome during the Soeharto period, it is likely that village heads still had ways to substantially influence the electoral result in the first democratic election.[34]

Three main econometric methods are used in this empirical study: linear probability model (henceforth LPM), probit model, and propensity score matching.

The LPM specification takes the following form:

$$y_{vd} = \beta k_{vd} + \delta_d + \mathbf{X}'_{vd}\theta + \varepsilon_{vd} \tag{17}$$

where y_{vd} is a dummy that takes value 1 if party y obtained the highest number of votes in the 1999 parliamentary election in village v that belongs to district d; k_{vd} is a dummy that takes value 1 if village v in district d is a *kelurahan* (i.e., it has an appointed village head) and 0 if it is a *desa*; δ_d are district fixed effects; and $\mathbf{X}'_{vd}$ are a set of village covariates. The main coefficient of interest is β, since it estimates the within-district difference in the probability of party y being the most voted party in the village between *kelurahan* and *desa* of similar characteristics.

The second method I use is a probit model that estimates the following equation:

$$Pr(y_{vd} = 1) = G(\beta k_{vd} + \delta_d + \mathbf{X}'_{vd}\theta) \tag{18}$$

where $G(.)$ is the cumulative distribution function of the standard normal.

Finally, the third method I use is propensity score matching, first introduced by Rosenbaum and Rubin (1983). This method compares the differences in the outcome of interest between treatment and control units with a similar probability of being treated. In our context, this method compares the differences in the probability of party y being the most voted party between *kelurahan* and *desa* that have a similar probability of being classified as *kelurahan* on the basis of their observable characteristics. This method estimates the average treatment effect as long as the following two conditions hold:

$$\text{(Unconfoundendness given the propensity score)} \quad (y_{vd} = 0, y_{vd} = 1) \perp k_{vd} \mid p(X_{vd},\ \delta_p)$$

$$\text{(Overlap)} \quad 0 < \ p(X_{vd},\ \delta_p) < 1$$

[34]Furthermore, as I will discuss in the next section, the differences in electoral outcomes are heterogeneous across districts in the way the theory predicts. Moreover, as shown in the robustness checks section, these differences cannot be explained by any of a number of alternative competing explanations.

where $p(X_{vd}, \delta_p)$ is the propensity score or the probability of receiving treatment (being a *kelurahan*) conditional on the covariates and the province dummies.[35]

The particular matching algorithm that I use is *block propensity score matching*. I employ this method in order to ensure that *desa* and *kelurahan* are matched within the same geographic area, and hence that the results are analogous to those of the LPM. As highlighted by Heckman et al (1998) geographically-matched controls greatly reduces the potential selection bias, especially in the presence of heterogeneous effects, as it is the current case. This method is implemented in three steps. First, for each province, I estimate the propensity score, using a probit model in which the dependent variable is the *kelurahan* dummy. Second, I impose the common support condition within each province.[36] Third, I generate dummies for each quintile of the within-province distribution of the estimated propensity score. Finally, I regress the dependent variable of interest on the *kelurahan* dummy, the propensity score quintile dummies, province fixed effects and the full set of propensity score interval–province fixed effects interactions. Therefore, this method is estimating the differences in the conditional expectation of the dependent variable between *desa* and *kelurahan,* that are in the same province and in the same interval of the propensity score estimate.[37]

5.2 Econometric Specifications on Turnover of Appointed Village Heads

In this section, I describe the empirical strategy to test the theoretical predictions about turnover of appointed village heads. The model predicts that, once the new mayor takes office after winning a close election, she will be able to identify and dismiss all her nonsupporters. This is so because, in close elections, a separating equilibrium emerged and types were truthfully revealed. In contrast, a new mayor who takes office after winning a lopsided election, cannot distinguish supporters from nonsupporters, and hence, there will be little turnover of appointed village heads. This is the case because a pooling equilibrium emerged.

I test these predictions by using a measure of turnover of appointed village heads obtained from the 2000 village census. The variable $turnover_{vd}$ takes value 1 if there was a turnover of appointed

[35] Unconfoundedness given the propensity score is implied by the Conditional Independence Assumption $(y_v = 0, y_v = 1) \perp k_v \mid X_v, \delta_p$, as shown by Rosenbaum and Rubin (1983).

[36] As highlighted by Heckman et al (1998), the imposition of common support is an important aspect of propensity score matching methods, and it greatly contributes to reducing the bias. In order to impose common support, for each province, I find the range of values of the propensity score that contain both *desa* and *kelurahan*. Then I delete observations with propensity scores outside this interval.

[37] This propensity score matching algorithm leads to similar point estimates if the matching is conducted within provinces or within districts. However, the imposition of of common support within districts eliminates about 80% of the observations, and as a result, reduces the statistical significance of the estimates. Given this fact, my preferred propensity score specification performs the matches within province. See section 10.4.1 in the Online Appendix for further discussion and robustness to alternative propensity score algorithms.

village heads in village v of district d in the year after the 1999 election.[38]

Using this measure of turnover as the dependent variable, I estimate the following econometric model in the subsample of villages with appointed village heads

$$turnover_{vd} = \beta_1 Golkar\_won_{vd} + \beta_2 Golkar\_won_{vd} \times New\_mayor_d + \delta_d + \mathbf{X}'_{vd}\theta + u_{vd} \qquad (19)$$

where $Golkar\_won_{vd}$ is a dummy that takes value 1 if Golkar was the most voted party in village v of district d, and New_mayor_d is a dummy that takes value 1 if a new mayor took office in district d by the year 2000.

Coefficient β_1 captures the predicted difference in the probability of turnover between a village in which Golkar was the most voted party in the 1999 election and a village in which another party was the most voted party, for districts where the new mayor did not take office by the year 2000. The coefficient β_2 captures the additional differences for districts in which a new mayor took office by the year 2000. Hence, the theory makes unambiguous predictions regarding the sign of β_2 across districts. In particular we expect $\beta_2 \approx 0$ in districts in which either party won by a large margin, while we expect $\beta_2 > 0$ in districts where PDI-P won by a tight margin and $\beta_2 < 0$ in districts where Golkar won by a tight margin.

6 Results

6.1 Results on Electoral Outcomes

Baseline Results

Next, I explore the differences in electoral behavior between *kelurahan* and *desa*. Although the predictions of the model are heterogeneous across districts, I start by analyzing the average effect. Table 2, panel A presents the results of the LPM; panel B presents the probit estimation; and panel C shows the results of the block propensity score matching estimation.[39]

Column 1 in Panel A shows the raw difference in voting patterns between *desa* and *kelurahan* when no controls or fixed effects are included. The results suggest there is a statistically significant difference but, as column 2 shows, this result vanishes once I include district fixed effects. This is not surprising, given the large geographical differences in support for different parties across Indonesia. It is interesting to note that, once I include geographic controls, the difference in voting

[38] More specifically, the 2000 village census contains information on the length of tenure of appointed village heads. If an appointed village head reports having been in office for 0 years, we can be confident that there was a turnover in that village after the 1999 election. Variable $turnover_{vd}$ takes value 1 in that case, and 0 otherwise. Unfortunately, later surveys did not report the length-of-tenure variable. Hence, it is not possible to obtain measures of turnovers that took place after the year 2000.

[39] The model in column 1 is fully satured and hence, the probit model leads to identical results as the LPM. There is no estimation of the propensity score model in columns 1 and 2 because the use of covariates is necessary to estimate the propensity score.

behavior between *desa* and *kelurahan* becomes significant at the 1% level, as shown in column 3. This highlights the fact that, once we are comparing *desa* and *kelurahan* with a similar level of urbanization, there are significant differences in their voting behavior. The LPM results suggest that, on average, Golkar was 5.75 percentage points more likely to win in villages with appointed village heads (*kelurahan*) than in similar villages with elected village heads (*desa*). Given the fact that the average of the dependent variable for *desa* villages is 0.32, this result means that Golkar was 18% more likely to win in a *kelurahan* than in a similarly urbanized *desa*. The probit estimates are slightly larger in magnitude while the propensity score matching results are slightly smaller, but nevertheless, highly statistically significant and similar to the LPM results.

Column 4 displays the results when additional controls for the number of religious facilities are included. Column 5 further controls for the number of health and educational facilities per capita. Remarkably, controlling for this additional host of variables neither affects the magnitude nor the significance of the results. This holds for all three alternative estimation methods. This finding is important for at least two reasons: First, the significant differences in voting behavior between *desa* and *kelurahan* cannot be accounted for by differences in religious intensity or availability of public goods. As I will discuss in further detail below, these remaining differences in electoral results, after controlling for the main determinants of voting, may reflect different campaigning efforts of the two types of village heads. Second, the finding that the coefficient on the *kelurahan* dummy does not change once covariates unrelated to geographical characteristics are included, suggests that the classification of villages as *desa* and *kelurahan* was fundamentally driven by observable geographic characteristics. This mitigates the potential concern of endogeneity in the formation of *kelurahan*, which I will address in further details in the robustness checks section.[40]

Although the results are not sensitive to incorporating additional covariates once geographical controls are included, in the remainder of the paper, I focus on the most conservative specification, that is, the specification that includes geographic, religious, and facilities controls (column 5).

Heterogeneous Effects

Next, I explore the heterogeneous differences between the electoral behavior of *kelurahan* and *desa* across districts. Recall that the model predicts that, in districts in which the election is expected to lopsided, appointed village heads support the likely winner to a greater extent than do

[40]Table A.1 in the Online Appendix displays the coefficients on the different set of covariates included in these regressions. The number of mosques per thousand people strongly correlates with votes for Golkar. Although Golkar is not an Islamic party, a number of policies implemented during the last years of the New Order to obtain higher support among Muslims may have realized their returns in the 1999 election. In contrast, PDI-P has some affinities to Christian groups, which may be behind the negative sign of the coefficient on the number of churches. The positive coefficients on the number of hospitals, polyclinics, and *puskesmas* (primary care centers) are consistent with the possibility that voters rewarded the incumbent party (Golkar) for the provision of these public goods during the Soeharto period.

elected village heads. In districts in which the election is expected to be close, the relative support will depend on the proportion of types. However, to the extent that appointed village heads that are Golkar sympathizers are likely to be the majority, it is likely that, on average, appointed village heads support Golkar to a greater extent than do elected village heads.[41]

Indonesia is the ideal setting to test the heterogeneous predictions of the model. As documented in section 3.3, just one month before the election, district mayors were granted extensive rights over the appointment of village heads and over the stipulation of appointed village heads' benefits. Hence, it is natural that *kelurahan* heads were particularly concerned about the electoral results at the district level.[42] Indonesia also has important and well-documented regional differences in terms of the relative strength of the two main parties. For instance, Sulawesi was the stronghold of Golkar, where it achieved vote shares of around 60% in the 1999 election. In contrast, PDI-P obtained landslide victories in the province of Bali: PDI-P obtained a vote share of 62% in Jembrana and vote shares above 75% in the other seven districts of Bali.

In order to evaluate the heterogeneous predictions of the theory, I estimate the econometric models specified in section 5.2 in different sets of districts, depending on whether PDI-P or Golkar won and whether the margin of victory was large (higher than 10 percentage points) or small (lower than 10 percentage points). Unfortunately, there are no available measures of the expected district electoral results at the time of the electoral campaign. I use the actual vote share of the different parties as a proxy for its expectation. Although there may have been more uncertainty in districts with close elections, in districts that were strongholds of one of the two main parties, the results were largely anticipated.

Notice that, in the regressions displayed in Table 2, the district fixed effects already controlled for differences in the level of support for each party at the district level. By running the regressions in different subsamples, I explore whether the within-district differences in the voting patterns of *kelurahan* and those of *desa* differ across districts, depending on the electoral result at the district level.

Table 3 shows the results. The dependent variable in columns 1 to 6 is a dummy that takes value 1 if Golkar is the most voted party in the village. The dependent variable in columns 7 to 12 is a dummy that takes value 1 if PDI-P is the most voted party in the village. Columns 1 and 7 show the results in the whole sample, while the rest of the columns correspond to different

[41] See section 2.3 for further discussion.

[42] It is important to keep in mind that the 1999 election selected the national, provincial, and district legislatures. There were no direct elections for the district mayor. However, notice that the predictions of the model also apply to this situation: In party strongholds, village heads can predict with confidence who will become the district mayor, while in closely contested districts the high degree of uncertainty regarding who will be the district mayor leads village heads to coordinate in a separating equilibrium. This level of uncertainty can result from the uncertainty of the electoral results and/or the uncertainty about which party coalitions will form after the district legislature is constituted. See section 10.2 in the Online Appendix for further discussion.

subsamples of districts, depending on the electoral result at the district level.

Columns 2 to 5 show that the average effect of *kelurahan's*, voting more than *desa* for Golkar is driven by districts in which Golkar won, while it is absent in districts in which PDI-P won by a large margin. The coefficient in column 5 is particularly robust to different specifications, as it will be shown in the robustness checks section. This is consistent with the prediction of the model that in districts in which Golkar won by a large margin, a pooling equilibrium emerges whereby all *kelurahan* heads exert effort to support Golkar.

Columns 7 to 12 show the results of the estimation of the same econometric model when the dependent variable is a dummy that takes value 1 if PDI-P is the most voted party in the village. The results suggest that PDI-P is less likely to win in *kelurahan* villages in districts were Golkar wins the election. However, column 8 highlights that this effect is reversed in districts where PDI-P wins by a large margin. In these districts, PDI-P is between 3.3 and 4.6 percentage points (depending on the econometric model) more likely to win in *kelurahan* than in similar *desa*. Although this result is only statistically significant at the 10% level for the LPM, the probit and propensity score matching results are significant at the 5% and 1% level, respectively. More important, this result is robust to the inclusion of a host of additional controls, as I will show in the robustness check section. This result is consistent with the model that I present in section 2, which predicts that appointed village heads unambiguously exert effort to signal their alignment with the party that is expected to win by a large margin.

According to the theoretical analysis, in districts where the election is close, a separating equilibrium emerges and whether the average effort benefits one party or another depends on the proportion of appointed village heads who are sympathizers of either party. As columns 3 and 4 show, on average, *kelurahan* are more likely than *desa* to support Golkar, a fact that is likely to reflect the higher proportion of Golkar supporters among *kelurahan* heads.[43,44,45]

[43]Furthermore, the *kelurahan* coefficient is systematically higher in column 4 than in column 3 (i.e., in districts where Golkar won by a tight margin than in districts were PDI-P won by tight margin). This is consistent with the higher proportion of *kelurahan* heads who are Golkar supporters being higher in districts where the underlying support for Golkar in the population is higher.

[44]The fact that the coefficient in column 4 is higher than the coefficient in column 5 could seem at odds with the theoretical predictions of the model: The model predicts that, in districts where Golkar won by a large margin, all *kelurahan* heads support Golkar, while in districts where Golkar won by a tight margin, at least a few *kelurahan* heads must have been truly PDI-P supporters, and hence support PDI-P. However, a slight modification of one of the assumptions of the model can accommodate this result. In particular, if I assume that the valence shock has a unimodal distribution instead of a uniform distribution, the model endogenously generates a higher equilibrium level of effort in districts where the election is closer. The intuition is that, with a unimodal valence shock, the closer an election is, the more likely it is that a given level of effort makes the realized vote share cross the 1/2 threshold. This higher marginal effect of effort in close elections leads to higher equilibrium effort. See section 10.1.4 of the Online Appendix for additional theoretical derivations and further details.

[45]Also consistent with the model, in districts in which neither PDI-P nor Golkar wins the election, no clear pattern emerges regarding whether Golkar or PDI-P is more likely to win in *kelurahan* or in *desa*. Although some of the

Overall, the empirical evidence suggests that the electoral outcome of *kelurahan* villages tends to align with the electoral outcome at the district level to a greater extent than does the electoral outcome in *desa* villages. This holds true even when controlling for the main determinants of voting. Moreover, the pattern of *kelurahan* alignment is clearer when the party that wins at the district level does so by a large margin. The model presented in section 2 provides an intuitive interpretation of this empirical pattern: *Kelurahan* heads have stronger incentives than do *desa* heads to signal their alignment with the party that is expected to win at the district level. This is so because the continuity of appointed village heads in their positions depends on the decision of the upcoming district government. In contrast, the alignment incentives are weaker for elected village heads because the continuity in their positions depends mainly on their constituents and to a lesser extent on upper levels of government.

6.2 Turnover of Appointed Village Heads

In this subsection I test the theoretical predictions about turnover of appointed village heads. In particular, I estimate econometric model (19) in the subsample of villages with appointed village heads. The results can be found in Table 4. Column 1 shows the average results, while columns 2 to 5 show the results when the sample is divided according to whether Golkar or PDI-P received the greatest number of votes at the district level, and whether the margin was large or tight. The main coefficient of interest is the one associated to regressor *Golkar Wins* $\times$ *New Mayor*, since it captures how much higher is the difference in the predicted probability of turnover in villages where Golkar won versus villages where another party won, in districts where the new mayor has already taken office with respect to districts where the incumbent mayor is still in office.[46] Columns 2 and 5 show that there is no strong evidence that the electoral outcome in the village determined subsequent appointed village head turnover, in districts where either party won by a large margin. This finding is consistent with the predictions of the model, since in districts where the election is lopsided and, hence, a pooling equilibrium emerges, the new mayor is unable to distinguish supporters from non-supporters and low turnover follows.

In contrast, as columns 3 and 4 show, in districts where the election was close, the coefficient β_2 becomes highly statistically significant and has the sign predicted by the theory. This result suggests that, once the new mayor takes office after a tight PDI-P victory, appointed village head turnover is 7.4 percentage points more likely $(-0.125+0.199)$ in villages where Golkar was the most voted party than in villages where another party won. This effect represents a 36% increase in the

coefficients are statistically significant they are not robust across econometric specifications and robustness checks.

[46]The interpretation of coefficient β_2 is in the same spirit of a differences-in-differences estimator, i.e.,

$$\hat{\beta_2} = [\Pr(turn|Golk = 1, New) - \Pr(turn|Golk = 0, New)] - [\Pr(turn|Golk = 1, Old) - \Pr(turn|Golk = 0, Old)]$$

sample mean probability of turnover. Similarly, in districts where a new mayor takes office after a tight Golkar victory, the probability of appointed village head turnover is 19 percentage points lower in villages where Golkar won than in villages where another party won.[47]

These results are noteworthy for several reasons. First, this pattern of political retaliation is fully consistent with the predictions of the theoretical model presented in section 2: newly elected mayors will dismiss nonsupporters provided that they can be identified, hence, only after close elections. Second, the fact that the turnover effects are stronger in close elections than in lopsided elections provides highly suggestive evidence that appointed village heads coordinated in separating and pooling equilibria, respectively, during the electoral campaign. Third, these results are not consistent with many other alternative theories of local officials' turnover.[48]

To further explore this heterogeneous pattern in the probability of turnover and to avoid relying on an ad hoc definition of what constitutes a tight versus a large margin of victory, I estimate the same regression for more specific margins of victory. Then I compute the difference in the predicted probability of turnover between villages where Golkar won versus villages where another party won, for districts that had a new mayor by the year 2000. The results are summarised in Figure 1.[49] The results of Figure 1 corroborate the findings reported in Table 4 by showing that there are large differences in the probability of turnover after close elections. The sign of these differences is exactly the one predicted by the theoretical model. In contrast, there is not a clear pattern of political retaliation after lopsided elections.[50]

[47]Notice that the estimates of coefficient β_1 also provide some suggestive evidence that is consistent with the model. In particular, the estimate of β_1 is negative and statistically significant in column 3. This coefficient suggests that in districts where the new mayor had not yet taken office yet by the year 2000, appointed village head turnover was 12 percentage points less likely in villages where Golkar had won. This could reflect that the old mayor (i.e., the Soeharto-period mayor), in anticipation of a PDI-P mayor taking office might have taken the opportunity to dismiss those appointed village heads who turned out to be supporters of the opposition parties. In contrast, the estimate of β_1 is not significant in column 4, for districts where Golkar won by a tight margin. This is not surprising, since in this case, the old mayor and the new mayor would be likely to have the same political affiliation, and hence the old mayor might have let the new mayor to dismiss appointed village heads to reappoint those that he liked better.

[48]For instance, if appointed village heads leave voluntarily after a new mayor of an opposing party takes office, we would also expect to observe these voluntarily exits in districts where the opposing mayor won by a large margin. However, we do not observe strong evidence of turnover in districts where the election was lopsided.

[49]In particular the plotted coefficients correspond to $\beta_1 + \beta_2$ after estimating empirical specification (19) for each set of districts with the specified margins of victory. See section 10.4.8 in the Online Appendix for the regression results and further discussion.

[50]Admittedly, the estimated coefficients in districts where Golkar wins by a large margin are positive and relatively large in magnitude. This is also reflected by the statistical significance at the 10% level of coefficient β_2 in column 5, Table 4. This could reflect that there is some heterogeneity in turnover for reasons other than those captured by the model. For instance, it could be that some newly elected Golkar district mayors wanted to distance themselves from the authoritarian Soeharto period and dismissed appointed village heads that supported Golkar. Another possibility is that in those districts there are villages with an underlying high turnover of appointed village heads. The fact that the placebo estimates—explained below—are also large in magnitude for districts where Golkar won by more than

Figure 1 also shows the results of a placebo experiment in which the dependent variable used is turnover in the years 1995 through 1996. As expected, we observe that no particular turnover patterns was taking place prior to the 1999 election. Finally, notice that these results also provide supporting evidence that the 10% margin of victory is likely to correspond to the empirical threshold that determines whether appointed village heads coordinate in separating or pooling equilibria—hence, providing additional confidence on the heterogeneous electoral results presented in Table 3.

7 Robustness Checks

In this section, I present a number of robustness checks for the empirical results presented in the previous section. First, I explore whether the classification of villages into the *kelurahan* and *desa* categories was endogenous to political factors. Second, I investigate whether there could be other sources of unobserved heterogeneity across villages, and test for other alternative explanations. Finally, I discuss some robustness checks for the turnover results.

7.1 Endogenous Selection of *Kelurahan*

A first concern for the results of the electoral outcomes is that political considerations drove the classification of villages as either *kelurahan* or *desa*. Since *desa* villages were allowed to elect their village heads, the Soeharto regime might have been reluctant to classify as *desa* those villages where there was a strong opposition to the regime. This is unlikely to explain the empirical results of the paper for several reasons. First, the described results rely on a within-district comparison. Hence, the actual concern would be that the Soeharto government classified as *kelurahan* those villages with a relatively stronger opposition to the regime within a district. Second, this sort of strategic village classification would bias downward the average results. In this case, the results presented in Table 2 would constitute a lower-bound estimate. Third, this pattern of endogenous village classification cannot account for the heterogeneous result described in Table 3. In order to explain the heterogeneous results, the Soeharto government would have had to implement a different sort of village classification across districts: In districts where Golkar was strong, *kelurahan* should have been more likely to be formed in areas of the district where Golkar was relatively stronger, but the opposite should have happened in districts that were PDI-P strongholds (in those districts, *kelurahan* should have been less likely to be formed in areas where Golkar was relatively stronger). This hypothesis seems unlikely, since it is difficult to conceptualize what reasons could motivate such a behavioral pattern.

20 percentage points provide support for this hypothesis. However, we can rule out the presence of positive and large turnover effects for districts where PDI-P won by a large margin. Hence, overall, these results provide considerable support for the theoretical predictions of the model.

Nevertheless, in order to mitigate the concern of endogenous selection, I conduct a series of robustness checks. First, I examine whether the urbanness requirements for being classified as *kelurahan* systematically differ across districts. Although, as mentioned above, the endogeneity concern emerges from *within*-district manipulation of *kelurahan* formation, we could think that, if the Soeharto regime engaged in these practices, it might also have promoted the formation of *kelurahan* in certain districts.

The estimates of the propensity score of being classified as *kelurahan* of actual *kelurahan* villages provide a good measure of these urbanness requirements, since these estimates measure the probability of being classified as *kelurahan* on the sole basis of observable characteristics. I use the propensity score of actual *kelurahan* villages as the dependent variable[51] and I regress it against district level characteristics: the vote share that Golkar obtained in different parliamentary elections and a measure of the rural characteristics of the district.[52] The results show that the vote share of Golkar is not a significant determinant of the urbanness requirements for being classified as *kelurahan*. The results can be seen in Panel A of Table A4 in the Online Appendix when using Golkar vote shares for different Parliamentary elections.

Figure 2 provides a visual representation of these results. In particular, it plots the district-level average of the propensity score of *kelurahan* villages against a measure of support for Golkar in the 1971 election.[53] Overall, there is no evidence that the rule for classification of villages as *desa* or *kelurahan* was implemented differently by districts depending on political considerations.

Although these results mitigate the endogenous classification concern, they do not rule out the possibility that the Soeharto government formed *kelurahan* in the areas with higher relative support for Golkar *within* a district. Unfortunately, I do not have a direct measure of support for Golkar at the village level before the first democratic election. An alternative approach consists of examining whether the results are robust to the inclusion of additional controls that can serve as a proxy for political preferences or other unobservable variables that the Soeharto regime could have taken into account when conducting the village classification. Panel A in Table 5 reports the result of this exercise. To provide a more concise presentation of these robustness checks I interact the *kelurahan* dummy with dummies for different groups of districts depending on their district-level electoral result. The covariates are also interacted with dummies for the different groups of districts. Hence, the specification is identical to the one presented in Table 3. The dependent

[51] I estimate the propensity score with a probit model that includes geographic, religious, and facilities covariates. It is important to note that I do not include district dummies in this propensity score estimation.

[52] As described in section 3.3, because of the features of the process of *kelurahan* formation, the requirements for being classified as *kelurahan* were lower in more rural districts: *kelurahan* were formed in the surroundings of the capital of the subdistrict even in very rural districts. Since Golkar has traditionally obtained stronger support in rural districts, not controlling for the overall rural traits of the district can lead to misleading conclusions.

[53] The measure of support for Golkar is the vote share Golkar obtained in 1971 once partialed out against a the percentage of rural households in the district.

variable in Panel A takes value 1 if Golkar wins in the village, while the dependent variable in Panel B takes value 1 if PDI-P wins in the village. Column 1 shows the the baseline specification. Column 2 includes controls for whether the village experienced any conflict in 2002, disaggregated by type of conflict (including conflict between villagers and the government apparatus).[54] The third column includes dummy variables for presence of the army and presence of the police in the village. The fourth column incorporates covariates for the availability of natural resources — in particular, the percentage of households working in the mining sector and the type of mining activity in the village.[55]

As we can see, neither the significance nor the point estimates of the *kelurahan* coefficients for the different set of districts change when controlling for this additional set of covariates. Moreover, when I incorporate all the previously mentioned controls in the same specification (column 7), the empirical results remain unaffected—and if anything, they are more precisely estimated. Overall, this suggests that it is unlikely that the potential endogenous classification of villages into *kelurahan* and *desa* can explain the results described in section 6.

7.2 Changes in Village Resources and Occupational Composition

The results could be confounded if there were other determinants of voting behavior, that were different for *desa* and *kelurahan*, but that did not relate to the method of selection of the village heads. For instance, we have seen that *kelurahan* had higher levels of public goods. If there was a process of expansion of public goods during the Soeharto regime, particularly targeting *kelurahan* villages, this could potentially explain the average higher support of Soeharto's party in those villages. In order to explore this possibility, column 5 panel A in Table 5 incorporates controls for whether the village was allocated the *Inpres Desa Tertinggal* (henceforth, IDT) poverty alleviation program and the percentage of households that were recipients of the program.[56] Column 6 includes controls for the change in the number of public facilities. As we can see, the results remain unaffected. This is the case even when I combine these controls with the ones described above, as column 7 shows.

Column 8 shows the results when adding covariates for the changes in transfers from upper levels of government — in particular, the percentage change in transfers to the village from the central, provincial, and district governments between the years 1996 and 2002.[57] Notice that the sample

[54]The 2003 wave of the PODES dataset reports measures of conflict that refer to year 2002. However, there was a high degree of persistence of certain underlying conflicts, such as separatist movements. Therefore, those conflict measures are probably good proxies for conflict in the previous years.

[55]See the notes in Table 5 for a complete list of the additional controls included in the regressions.

[56]The IDT program was a poverty alleviation that the central government implemented between 1994 and 1996. Each village selected received 20 million Rupiahs ($8,700) to use as a small-scale rotating credit fund for groups of poor people in the village, to be invest in self-employment activities.

[57]Only the 1996 and 2003 waves of PODES reported information about the village budget.

size is substantially smaller because only a fourth of the villages reported their village budgets. This reduces the statistical significance of some of the results, but the magnitude and sign of the estimates is very similar to the baseline estimates.

In column 9, I examine whether the results are driven by differences in the occupational composition of *kelurahan* and *desa*. Voting behavior in Indonesia is sometimes driven by sectorial considerations. Traditionally, Golkar was considered the party of the civil servants and the army. If there is a higher proportion of civil servants in *kelurahan* than in *desa*, this could affect my results. Column 9, displays the results when controlling for the occupational composition of *desa* and *kelurahan*. The occupational composition data comes from the National Socioeconomic Household Survey (SUSENAS). Since I only have this information for a subset of villages, the sample size is considerably smaller, and as a result, the statistical significance of some of the results is also smaller. However, the point estimates are very similar to the baseline results.

7.3 *Kecamatan* (Subdistrict) Fixed Effects

As an additional check, I verify that the results are robust to the inclusion of *kecamatan* (subdistrict) fixed effects. Villages that are in the same subdistrict are geographically very close to one another; the average distance to the capital of the subdistrict is 7.4 miles (12 kilometers), and subdistricts have, on average, 15.6 villages. Villages within a subdistrict are likely to have substantial similarities in terms of ethnic and socioeconomic composition—and consequently in voting attitudes.

Column 10 displays the results with subdistrict fixed effects. The heterogeneous results remain remarkably stable when we compare *kelurahan* and *desa* that are geographically very close. In particular, the coefficient for districts where PDI-P won by a large margin in Panel B remains significant at the 10% level, highlighting the robustness of the reversal effect that the model predicts.

7.4 Endogeneity of the District Electoral Results and Targeting Transfers to Supporters

Next, I examine two different hypotheses that, in contrast to the previous robustness checks, can provide a rationale for the heterogeneous results presented in Table 3. The first of these hypotheses relates to the possibility that the district electoral result is endogenous to the electoral results in *kelurahan* villages. If most of the villages in a district are *kelurahan*, the stronger alignment of *kelurahan* villages to the district electoral result could be mechanical: The party that wins in the *kelurahan* villages will also win the district. There are several reasons why this is not the case in the current context.

First, notice that the presence of district fixed effects in the main specification mitigates this concern: the party that wins in the district is more likely to win in *kelurahan* when compared to similar *desa* villages in the same district. Second, *kelurahan* villages are considerably fewer in

number than *desa* and the majority of villagers in my sample live in *desa* villages: Only 7% of the villages in the sample are *kelurahan* and most districts have less than 20% of their population living in *kelurahan*. Excluding from the analysis those districts where more than 20% of the population lives in *kelurahan* does not affect the empirical results. Finally, the results are robust to the alternative classification of districts that would emerge under the assumption of maximum congruence between the electoral results in *kelurahan* and in the district.[58] See section 10.4.2 and Table A5 of the Online Appendix for further details.

A second hypothesis that could explain the stronger alignment between *kelurahan* and the district level could be targeted transfers. District mayors might distribute additional transfers or allocate public goods to villages in which they obtained higher support in the election. If district mayors reward villages that are aligned with them, *and* they do so to a greater extent if the village is a *kelurahan*, this could indeed explain the heterogeneous results. If this were the case, the stronger alignment of *kelurahan* with the district electoral result would be driven by *kelurahan's* voters anticipating higher returns on being aligned with the district, than their *desa* neighbors might expect.

In Table 6, I investigate whether there is evidence that upper levels of government reward aligned villages. The variable *aligned with district* is a dummy that takes value 1 if the most voted party in the village was also the most voted party in the district. Columns 1, 3, and 5 of panel A show no evidence that villages aligned with the district government obtain additional transfers from upper levels. Next, I incorporate the *kelurahan* dummy and the interaction between *kelurahan* and the alignment dummy. If higher transfers were allocated to aligned *kelurahan* than to aligned *desa*, we would expect the coefficient of the interaction to be positive and significant. As Table 6 shows, this is not the case, since the coefficients on the interaction term are close to 0 in magnitude and not statistically significant. A similar picture emerges when studying changes in health and educational facilities between the years 2000 and 2003, as illustrated by panel B. None of the coefficients on the interactions is statistically significant at the 5% level. Only the interaction coefficient on *puskesmas* (primary care centers) is significant at the 10 percent level. Overall, the empirical evidence does not support the notion that fiscal transfers or public goods were allocated on the basis of political alignment. Neither do the data support that aligned *kelurahan* received different treatment in terms of transfers and public goods from aligned *desa* villages.

[58] In particular, I back out the vote shares that would emerge from desa villages under the assumption that the most voted party in the district obtained 100% vote shares in the *kelurahan* where it won, and 49% vote shares in the *kelurahan* where it loss. I thank an anonymous referee for the suggestion of splitting the sample based on the vote share of *desa* villages.

7.5 Additional Results and Robustness Checks

In section 10.4 of the Online Appendix, I provide some additional results and robustness checks. First, I examine the robustness of the propensity score matching results to alternative matching algorithms and specifications (see section 10.4.1 and Table A.3).

Second, I explore the predictions of the model using a novel dataset on the number of electoral violations that occurred in the province of East Java during the months leading up to the 1999 election. The number of electoral violations provides a proxy for the effort that village heads exerted to manipulate voters. Consistent with the predictions of the model, the number of *kelurahan* is positively correlated with the number of electoral violations. Furthermore, in districts where the election was lopsided, the number of *kelurahan* in a subdistrict is associated with more electoral violations in which the victim is the main opposition party in that district. (See section 10.4.3 and Table A.6).

Third, I show that there is no evidence that *desa* villages developed stronger democratic capital because of having held village-level elections during the Soeharto regime. Fourth, I further analyze the electoral results, using a multinomial choice econometric model. Finally, I provide some additional robustness checks and results on the village head turnover results.[59]

8 Conclusions

This paper investigates the first general election after the fall of Soeharto in Indonesia from the standpoint of local governments. I find empirical evidence that villages with appointed village heads are more likely to vote for the party that wins by a large margin at the district level. In other words, villages with appointed village heads experience a stronger electoral alignment with the district level, than do villages with elected village heads.

[59] In addition to these, I show that the results are robust to flexibly controlling for distance to the capital of the subdistrict. This mitigates the concern that the results are driven by political parties choosing to campaign more strongly in *kelurahan* due to their central location, hence generating spurious congruence between the electoral result in *kelurahan* and in the district. In this robustness check I show that the baseline set of controls already appropriately controls for any campaigning motivation derived from distance to the capital of the subdistrict. If nevertheless, political parties have a preference for campaigning more strongly in *kelurahan* than in *desa* for reasons other than distance to the capital of the subdistrict and for reasons other than those measured by the control variables, the results could be confounded. This is seems unlikely. Furthermore, to my knowledge, there are no case studies or accounts that suggest that parties had a preference for campaigning in *kelurahan*. Two of the most renowned case studies on electoral campaigning at the village level in the 1999 election, Antlöv (2004) and Cederroth (2004), do not cite at any point a preference of campaigning in *kelurahan*. In other robustness checks I show that there is no evidence that the competence of the appointed village heads differs systematically across districts. I also verify that the electoral results are robust to quartiles of the within-district population. This mitigates the concern that *kelurahan* had lower variance of the individual voting decisions because of their larger size. The first two results are included in the Online Appendix. The latter results are available from the author on request.

This result is robust to controlling for the main determinants of individual voting behavior and a host of other variables that could capture underlying political attitudes (religious intensity, level of public goods, incidence of conflict, presence of the army, occupational composition, availability of natural resources, etc.). These results are present in a within-district comparison and even in a within-subdistrict comparison—that is, even when comparing villages geographically very close to one another.

This paper presents a theoretical model that provides an intuitive interpretation for these findings: Appointed village heads have stronger incentives to exert effort to manipulate voters because of their political career concerns. Since the designation rights of appointed village heads rest at the district level, appointed village heads have a strong incentive to signal their alignment with the likely winner of the district seat. In contrast, elected officials have far weaker incentives to exert effort because the continuity in their positions depends mainly on the will of their local constituents.

This interpretation is further supported by the evidence on subsequent turnover of appointed village heads. The theory predicts that, once the newly elected mayor takes office, she dismisses appointed village heads that are nonsympathizers, provided that she can identify them. This is the case only after close elections when appointed officials truthfully reveal their real political leanings with the effort that they have exerted to influence voters. The empirical evidence shows a clear pattern of political retaliation against appointed village heads after close elections, but not a clear pattern if the elections were lopsided. This represents highly suggestive evidence that appointed officials coordinated in separating equilibria in close elections but on pooling equilibria in lopsided elections.

I test for other competing explanations that could provide a rationale for the stronger electoral alignment of villages with appointed village heads. In particular, I test for the endogeneity of the district electoral result to the electoral outcome of villages with appointed heads, and for additional returns for these villages from being aligned with the district government. I do not find empirical support for any of these alternative hypotheses.

This study provides a number of insights that might be promising ground for further research. First, it highlights the need for a better understanding of the incentives faced by political representatives and government officials in regimes in transition. In contrast to political institutions developed during the nondemocratic regime (such as an enlarged army or certain laws and regulations) that persist during the transitional period, the loyalty ties of these officials can suddenly change, given the new political scenario. This is reinforced by the presence of imperfect information regarding real political leanings that characterizes regimes in transition. Second, this paper highlights the fact that a better understanding of clientelism and voter manipulation requires modeling the strategic interaction among different levels of government. This is especially necessary because most countries have some degree of political decentralization and voter manipulation practices are rooted at the local level. Third, this paper highlights the fact that nonelected officials have high stakes in the

upper-level elections of the office where their own appointment rights rest. This feature needs to be incorporated into the literature of appointed and elected officials, which has traditionally perceived nonelected officials as independent and neutral to electoral concerns. Finally, the results presented in this paper are relevant to understanding the process of democratization of countries that have the appointed-elected institutional variation in the way that they select their local leaders. This could be of particular interest in the case of China, where direct elections now select the lowest level officials.[60]

9 Appendix

9.1 Proof of Proposition 1

The level of effort that maximizes the utility of an elected village head of type t given by (6) is $e_t^{elec} = 0$ for $t \in \{d, r\}$. Since even by exerting no effort elected village heads can keep their positions, they cannot increase their payoffs by choosing any other level of effort. ■

9.2 Proof of Proposition 2

First, I provide a formal definition of the solution concept used in Proposition 2.

Definition 1. A PBE of this game consists of a set of optimal strategies for both candidates for mayor $\phi_m^*(e_i) \in \{0, 1\}$ $m \in \{D, R\}$, a set of optimal strategies for each appointed village head $e_i^*(t) \in \mathbb{R}$, $t \in \{d, r\}$, and a set of posterior beliefs $\mu(t|e_i)$ such that

$$\phi_m^*(e_i) \in \arg\max_{\phi} \left\{ \sum_t \mu(t|e_i) V_m^{app}(\phi, t) \right\} \tag{20}$$

$$e_i^*(t) \in \arg\max_{e_i} \left\{ p(E_{-i}+e_i) U_t^{app}(e_i, \phi_D^*(e_i)) + (1 - p(E_{-i}+e_i))\, U_t^{app}(e_i, \phi_R^*(e_i)) \right\} \tag{21}$$

where $\mu(t|e_i)$ is derived using Bayes rule (when applicable); $V_m^{app}(\phi, t)$ $m \in \{D, R\}$ are defined by (1) and (2), respectively; $U_t^{app}(e, \phi)$ $t \in \{d, r\}$ is defined by (5); $p(.)$ is defined by (8); and E_{-i} is the aggregate effort level of all village heads other than i, (i.e., $E_{-i} = \sum_{j \neq i} e_j$).

9.2.1 Pooling Equilibrium

First, notice that given mayors' optimization problem derived in subsection 2.2.1, it is obvious that the mayors' strategies formulated in this equilibrium are best responses given the specified beliefs. Second, provided that condition (12) holds, type r does not have incentives to deviate. Hence, neither does type d.

[60] I thank an anonymous referee for highlighting the relevance of the results presented in this paper to the study of the Chinese case.

Intuitive Criterion. Proposition 2 states that the pooling PBE in which all village heads exert effort level e^* satisfies the Intuitive Criterion. In order to provide a more formal definition of the Intuitive Criterion, I introduce some additional notation. Let Θ be the set of the types of village heads, (i.e., $\Theta = \{d, r\}$), and T a subset of Θ. Let $BR_D(T, e)$ be the set of pure strategy best responses of candidate for mayor D given beliefs, $\mu(.|e)$ such that $\mu(T|e) = 1$. That is, $BR_D(T, e) = \underset{\mu:\mu(T|e)=1}{\cup} BR_D(\mu|e)$ where $BR_D(\mu|e) = \arg\max_{\phi} \sum_t \mu(t|e) V_D^{app}(\phi, t)$. $BR_R(T, e)$ is defined similarly.

Definition 2. The Intuitive Criterion. Fix a vector of equilibrium payoffs $U^*(.)$ for the village heads. For each strategy e, let $J(e)$ be the set of all types t such that

$$U^*(t) > \max_{\substack{\phi_D \in BR_D(\Theta, e) \\ \phi_R \in BR_R(\Theta, e)}} \{p(E_{-i} + e) U_t^{app}(e, \phi_D) + (1 - p(E_{-i} + e))\, U_t^{app}(e, \phi_R)\} \tag{22}$$

If for some e, there exists $t' \in \Theta$ such that

$$U^*(t') < \min_{\substack{\phi_D \in BR_D(\Theta \backslash J(e), e) \\ \phi_R \in BR_R(\Theta \backslash J(e), e)}} \left\{p(E_{-i} + e) U_{t'}^{app}(e, \phi_D) + (1 - p(E_{-i} + e))\, U_{t'}^{app}(e, \phi_R)\right\} \tag{23}$$

then the equilibrium fails the Intuitive Criterion.

Claim 1. Consider the equilibrium stated in Proposition 2 with effort level e^* defined by (10). If $\frac{G-\kappa}{G} > \frac{1}{2}$, for any deviation $e \neq e^*$ inequality (22) is satisfied for type d (i.e., $\{d\} \subseteq J(e)$ for $e \neq e^*$).

Proof. The equilibrium payoffs of type d are given by $U^*(t = d) = p(ne^*)(Z - \underline{U}) + \underline{U} - \underline{\alpha} C(e^*)$. Next, we examine mayors' best responses and type d deviation payoffs for different out of equilibrium beliefs.

i. $\mu(t = d|e \neq e^*) = 1$. In this case, mayors' best responses to deviations are $\phi_D^*(e) = 1$ and $\phi_R^*(e) = 0$ for $e \neq e^*$. The deviation payoffs for type d are $U(e|t = d) = p((n\text{-}1)e^* + e)(Z\text{-}\underline{U}) + \underline{U} - \underline{\alpha} C(e)$.[61] Hence, the optimal deviation e' is implicitly defined by expression

$$\frac{\psi\theta\,[Z - \underline{U}]}{\underline{\alpha}} = C'(e') \tag{24}$$

which is exactly the same as expression 10—hence $e' = e^*$. In other words, e^* is defined such that the optimal deviation of type d, when every other village head is exerting effort e^*, is exactly to the level e^*. Consequently, when out of equilibrium beliefs are $\mu(t = d|e \neq e^*) = 1$, the deviation payoffs can not be higher than the equilibrium payoffs.

[61] Deviating to negative values of effort is dominated by deviations to $e \geq 0$.

ii. $\mu(t = d|e \neq e^*) = 0$. These are the out of equilibrium beliefs of the candidate for PBE specified in (9). Hence, as long as condition (12) holds, neither type has a profitable deviation.

iii. $\mu(t = d|e \neq e^*) = \theta \in (0, 1)$. Depending on the values of θ and $\frac{G-\kappa}{G}$ mayors have different best responses.

iii.a. $\theta \geq \frac{G-\kappa}{G} > 1 - \theta$. In this case, the best responses to a deviation are $\phi_D^*(e) = 1$ and $\phi_R^*(e) = 0$ if $e \neq e^*$. The same discussion as in case i applies.

iii.b. $1 - \theta \geq \frac{G-\kappa}{G} > \theta$. Mayors' best responses are $\phi_D^*(e) = 0$ and $\phi_R^*(e) = 1$ if $e \neq e^*$. The same discussion as in case ii follows.

iii.c. $\frac{G-\kappa}{G} > \theta$ and $\frac{G-\kappa}{G} > 1 - \theta$. Mayors' best responses are $\phi_D^*(e) = 0$ and $\phi_R^*(e) = 0$ if $e \neq e^*$. Village head type d deviation payoff is $U(e|t = d) = \underline{U}$, which is lower than equilibrium payoff.

iii.d. $\theta \geq \frac{G-\kappa}{G}$ and $1 - \theta \geq \frac{G-\kappa}{G}$. This case is ruled out by the assumption of $\frac{G-\kappa}{G} > \frac{1}{2}$. I discuss the case in which $\frac{G-\kappa}{G} \leq \frac{1}{2}$ at the end of this proposition.

Therefore, as long as $\frac{G-\kappa}{G} > \frac{1}{2}$, for any possible out of equilibrium beliefs a deviation to $e \neq e^*$ is not profitable for type d.■

Next, I check the second part of the Intuitive Criterion. Let us consider deviations in which type d is the only element of set $J(e)$ and, hence, $\Theta \backslash J(e) = \{r\}$.[62] The only out of equilibrium beliefs that could be formed, when restricted to the set of types $\Theta \backslash J(e)$ are $\mu(t = d|e \neq e^*) = 0$. This leads to best responses of mayors $\phi_D^*(e) = 0$ and $\phi_R^*(e) = 1$ if $e \neq e^*$. In this scenario, type r's deviation payoff is $U(e|t = r) = [1 - p((n\text{-}1)e^* + e)]\,(Z\text{-}\underline{U}) + \underline{U} - \underline{\alpha}C(|e|)$. Notice that inequality (12) guarantees that equilibrium payoffs are higher than this deviation payoff, thus, ruling out that type r has a profitable deviation to e. Therefore, we can conclude that, for $\frac{G-\kappa}{G} < \frac{1}{2}$, the Intuitive Criterion is satisfied.

Finally, let us consider the case in which $\frac{G-\kappa}{G} \leq \frac{1}{2}$. In this case, the following out of equilibrium beliefs could be formed: $\mu(t = d|e \neq e^*) = \theta$ where $\theta \geq \frac{G-\kappa}{G}$ and $1 - \theta \geq \frac{G-\kappa}{G}$. The resulting deviation best responses of mayors are $\phi_D^*(e) = 1$ and $\phi_R^*(e) = 1$ if $e \neq e^*$. In this case, both types would like to deviate from an equilibrium with these out of equilibrium beliefs. Consequently $J(e) = \{\varnothing\}\ \forall e \neq e^*$. Verifying that the second part of the Intuitive Criterion does not hold is straightforward. Since we are examining a PBE, equilibrium payoffs will be higher than any deviation for a particular set of beliefs. Hence, they will be higher than the lowest deviation payoff for an arbitrary set of beliefs that could be formed over the whole set of types Θ. Therefore, we conclude that the equilibrium analyzed does not fail the Intuitive Criterion.[63] ■

[62] If $J(e) = \{d, r\}$, then $\Theta \backslash J(e) = \{\varnothing\}$ and therefore the second part of the Intuitive Criterion does not hold.

[63] In addition to this pooling PBE, there exist other equilibria that satisfy the Intuitive Criterion. In the Online Appendix I prove that the equilibrium analyzed is the only one that satisfies the Divinity Criterion. Furthermore, I

9.2.2 Pooling Equilibrium Other Sets of Parameters

Section 2.2.2 derives the pooling PBE in which all appointed village heads exert effort level e^* as defined by (10), to support party D. Naturally, there exists another pooling equilibrium in which all appointed village heads exert effort $-e^*$, i.e. effort to support party R. This constitutes a pooling PBE as long as there is a large fraction of party R sympathizers among village heads and the population (i.e., $1-\delta > \frac{G-\kappa}{G} > \delta$) and π, the underlying support in the population for party D is low enough:

$$\pi \leq \frac{1}{2} + \theta e^*(n-1) - \frac{(\overline{\alpha}-\underline{\alpha})C(e^*)}{2\psi\,[Z\text{-}\underline{U}]} \tag{25}$$

9.2.3 Separating Equilibrium

First notice that, given the beliefs specified in (*38*), it is straightforward to see that mayors' strategies are best responses to village heads actions. Second, if condition (14) holds, type d village head does not have a profitable deviation to negative levels of effort. Similarly, if condition (15) is satisfied, village head type r does not have a profitable deviation to positive levels of effort. Third, since, in equilibrium, type d exerts effort e^* defined by equation (*10*) and type r exerts effort $-e^*$, village head type d (r) does not have a profitable deviation to positive (negative) levels of effort. This is so because, by construction, the level of effort e^* leads to the highest equilibrium payoff for type d. Hence given the strategies for mayors, type d cannot increase their payoffs with a deviation to another positive level of effort. The same holds true for type r.

The proof that this equilibrium satisfies the Intuitive Criterion and is the only equilibrium that satisfies the Divinity Criterion is very similar to the one for the pooling equilibrium and is omitted for the sake of brevity. Here I just provide the main intuition. First, notice that since both types are maximizing their ex-ante payoff and revealing their type in equilibrium, there is no combination of deviation and speech that leads to a higher payoff. Hence, equilibrium (*38*) satisfies the Intuitive Criterion. It is also the unique equilibrium that satisfies the Divinity Criterion. Notice that only if $\frac{G-\kappa}{G} \leq \frac{1}{2}$, a separating equilibrium other than the one described in (*38*) can be sustained. For this set of parameters we could have out of equilibrium beliefs $\mu(t=d|e\neq e^*,\, e\neq -e^*)=\theta$, where $\frac{G-\kappa}{G} \geq \theta$ and $\frac{G-\kappa}{G} \geq 1-\theta$. This would lead to out of equilibrium actions of mayors: $\phi_D^*(e)=1$ and $\phi_R^*(e)=1$. Only for these out of equilibrium beliefs and strategies a separating equilibrium with levels of effort other than e^* and $-e^*$ can be sustained. This alternative separating PBE satisfies the Intuitive Criterion: All the deviations that could potentially make type d better off also make type r better off, and vice versa. However, this equilibrium does not satisfy the Divinity Criterion because type d is infinitely more likely to deviate to e^* than type r and type r is infinitely more likely to deviate to $-e^*$ than type d. ■

provide some additional intuition on why this equilibrium satisfies these refinements.

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Table 1
Descriptive Statistics

	Whole Sample			*Kelurahan*		*Desa*	
	Obs	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Electoral Variables:							
Golkar most voted party in village	43,394	0.32	0.47	0.39	0.49	0.32	0.46
PDI-P most voted party in village	43,394	0.46	0.50	0.49	0.50	0.46	0.50
PPP most voted party in village	43,394	0.09	0.29	0.05	0.22	0.10	0.29
PKB most voted party in village	43,394	0.09	0.28	0.04	0.19	0.09	0.29
Other party most voted in village	43,394	0.04	0.19	0.03	0.18	0.04	0.19
Geographic controls							
kelurahan dummy	43,394	0.07	0.26	1	0	0	0
urban dummy	43,394	0.10	0.30	0.62	0.49	0.06	0.23
Share of HH in agriculture	43,394	0.70	0.25	0.31	0.31	0.73	0.22
Share of land in agriculture	43,394	0.76	0.24	0.48	0.35	0.78	0.22
high altitude dummy	43,394	0.28	0.45	0.18	0.38	0.29	0.45
population	43,394	2,952	7,714	6,315	10,922	2,699	7,355
population density (#people/ha)	43,394	1.05	3.38	4.95	9.34	0.76	2.12
distance subdistrict office (km)	43,394	12.26	29.00	2.92	5.64	12.96	29.91
distance district capital (km)	43,394	101.26	155.99	67.85	124.65	103.78	157.81
Religious Controls							
number of mosques§	43,394	1.25	1.43	0.74	0.66	1.29	1.47
number of prayerhouse§	43,394	2.51	3.53	1.23	1.43	2.61	3.62
number of churches§	43,394	0.49	1.39	0.26	0.58	0.50	1.43
number of buddhist temple§	43,394	0.01	0.16	0.02	0.08	0.01	0.17
Facilities Controls							
number of TVs§	43,394	43.91	46.22	97.35	60.64	39.89	42.31
number of hospitals§	43,394	0.003	0.041	0.022	0.083	0.002	0.036
number of maternity hopitals§	43,394	0.004	0.086	0.016	0.091	0.003	0.086
number of polyclinic§	43,394	0.013	0.111	0.031	0.097	0.011	0.112
number of puskesmas§	43,394	0.040	0.183	0.064	0.154	0.038	0.185
number of kindgarden§	43,394	0.165	0.333	0.289	0.288	0.156	0.334
number of primary school§	43,394	1.314	1.538	0.918	0.747	1.344	1.577
number of high school§	43,394	0.174	0.459	0.403	0.524	0.157	0.449
Additional Controls							
conflict in 2003	43,394	0.06	0.23	0.09	0.28	0.05	0.23
Army member in Village	43,394	0.40	0.49	0.87	0.34	0.37	0.48
Police	43,394	0.06	0.23	0.18	0.38	0.05	0.21
Share of HH in mining sector	43,394	0.64	3.42	0.76	4.14	0.63	3.36
change in puskesmas 1996 - 1999	43,393	0.33	0.52	0.33	0.61	0.33	0.52
change in central gov funds 1996 - 2002	39,723	-0.39	1.06	-0.48	1.03	-0.39	1.06
change in province gov funds 1996 - 2002	21,140	-0.55	0.92	-0.63	0.84	-0.54	0.92
change in district gov funds 1996 - 2002	18,157	0.31	1.62	0.25	1.45	0.31	1.63

§ Per 1,000 villagers

Additional Statistics

Number of districts	199
Number of subdistricts	2,779
Number of villages per district	218
Number of *kelurahan* per district	15
Number of *desa* per district	203
Number of population per district	643,702

Number of districts by most voted party in the 1999 election

	Most voted	2nd most voted
PDI-P	105	54
Golkar	74	74
PKB	11	29
PPP	8	34
PAN	1	8
TOTAL	199	199

Table 2
Effects of Appointed Official on Support for Golkar

	Dependent variable: Golkar wins in 1999				
	(1)	(2)	(3)	(4)	(5)
	A. Linear Probability Model				
Kelurahan dummy	0.0739***	0.0065	0.0575***	0.0573***	0.0552***
	(0.028)	(0.012)	(0.012)	(0.012)	(0.012)
Observations	43,394	43,394	43,394	43,394	43,394
R-squared	0.002	0.371	0.378	0.381	0.382
Adjusted R-squared	0.0016	0.368	0.375	0.378	0.379
	B. Probit Model				
Kelurahan dummy		0.0287	0.2881***	0.2856***	0.2774***
		(0.054)	(0.056)	(0.055)	(0.055)
Marginal Effect		0.0095	0.1006***	0.0997***	0.0966***
		(0.018)	(0.021)	(0.020)	(0.020)
Observations		43,027	43,027	43,027	43,027
Log-likelihood		-18,447	-18,208	-18,127	-18,104
Pseudo R-sq		0.317	0.326	0.329	0.329
	C. Propensity Score Model				
Kelurahan dummy			0.0234***	0.0297***	0.0325***
			(0.007)	(0.007)	(0.010)
Observations			21,502	20,565	19,206
Adjusted R-squared			0.425	0.430	0.428
Geographic Controls	No	No	Yes	Yes	Yes
Religious Controls	No	No	No	Yes	Yes
Facilities Controls	No	No	No	No	Yes
District Fixed Effects	No	Yes	Yes	Yes	Yes

Notes: Robust Standard errors clustered at the district level in parenthesis in panels A and B. The unit of observation is the village level. The dependent variable is a dummy that takes value 1 if Golkar was the most voted party in the village in the Parliamentary election of 1999 and 0 otherwise. Columns (2) to (5) include district fixed effects. Geographic controls include: a quartic in the percentage of households for which agriculture is the main occupation, a quartic in log village population, population density, percentage of land devoted to agriculture, dummy for rural village, dummy for high-altitude village, distance to the capital of the subdistrict, and distance to the capital of the district. Religious controls include: number of mosques, churches, prayer houses, and Buddhist temples per capita. Facilities controls include number of hospitals, maternity hospitals, polyclinics, primary care centres, kindergartens, primary schools, high schools, and number of TVs per capita. Propensity score matching results include a full set of province fixed effects interacted with the propensity score percentile dummies. The different set of controls specified in the corresponding column are used in the first stage, i.e. in the propensity score estimation. Standard errors of the propensity results are bootstrapped. The specification of column 1 corresponds to a fully satured model, hence the probit is identical to the Linear Probability Model. *** p<0.01, ** p<0.05, * p<0.1.

Table 3
Heterogeneous Effects of Appointed Official on Support for Golkar

	Dependent variable: Golkar wins in 1999						Dependent Variable: PDI-P wins in 1999					
	Whole sample	PDI-P Won Large 1999	PDI-P Just Won 1999	Golkar Just Won 1999	Golkar Won Large 1999	Neither Won	Whole sample	PDI-P Won Large 1999	PDI-P Just Won 1999	Golkar Just Won 1999	Golkar Won Large 1999	Neither Won
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	A. Linear Probability Model											
Kelurahan dummy	0.0552***	0.0016	0.0764**	0.1277***	0.0441**	0.0677*	-0.0208	0.0370*	-0.0370	-0.0870*	-0.0241	-0.0036
	(0.012)	(0.016)	(0.029)	(0.037)	(0.018)	(0.038)	(0.014)	(0.021)	(0.045)	(0.043)	(0.015)	(0.045)
Observations	43,394	15,430	9,114	5,946	7,378	5,526	43,394	15,430	9,114	5,946	7,378	5,526
Adjusted R-squared	0.379	0.0812	0.167	0.0621	0.110	0.143	0.339	0.0792	0.0782	0.0928	0.103	0.129
Districts	199	70	35	26	48	20	199	70	35	26	48	20
	B. Probit Model											
Kelurahan dummy	0.2774***	0.0580	0.3978***	0.3493***	0.2240**	0.4433**	-0.0539	0.1727**	-0.1023	-0.2749**	-0.1614	-0.0041
	(0.055)	(0.096)	(0.115)	(0.103)	(0.106)	(0.184)	(0.056)	(0.083)	(0.122)	(0.131)	(0.129)	(0.162)
Marginal Effect	0.0966***	0.0098	0.1191***	0.1353***	0.0466**	0.0946*	-0.0213	0.0462**	-0.0408	-0.0755**	-0.0280	-0.0009
	(0.020)	(0.017)	(0.039)	(0.038)	(0.020)	(0.049)	(0.022)	(0.021)	(0.049)	(0.032)	(0.021)	(0.036)
Observations	43,027	15,267	9,068	5,946	7,254	5,492	42,391	15,363	9,114	5,931	6,457	5,526
Log-likelihood	-18,104	-5,059	-4,028	-3,893	-3,017	-1,842	-21,310	-7,573	-5,900	-3,037	-2,319	-2,200
Pseudo R-sq	0.329	0.12	0.172	0.0538	0.127	0.184	0.273	0.0849	0.0641	0.0923	0.117	0.147
	C. Propensity Score Matching Model											
Kelurahan dummy	0.0325***	0.0014	0.0343	0.1363***	0.0473***	0.0278	-0.0030	0.0328***	-0.0080	-0.0991*	-0.0207*	-0.0225
	(0.008)	(0.009)	(0.030)	(0.037)	(0.015)	(0.022)	(0.013)	(0.004)	(0.046)	(0.052)	(0.011)	(0.045)
Observations	19,206	7,814	4,303	1,822	3,378	1,889	19,206	7,814	4,303	1,822	3,378	1,889
Adjusted R-squared	0.428	0.0465	0.121	0.0457	0.0973	0.0913	0.225	0.0203	0.0249	0.0616	0.0739	0.0500

Notes: Robust Standard errors in Panels A and B are clustered at the district level and shown in parenthesis. The unit of observation is the village level. For columns (1) to (6) the dependent variable is a dummy that takes value 1 if Golkar was the most voted party in the village in the Parliamentary election of 1999 and 0 otherwise. For columns (7) to (12) the dependent variable is a dummy that takes value 1 if PDI-P was the most voted party in the village in the Parliamentary election of 1999 and 0 otherwise. All regressions include district fixed effects, geographic, religious, and facilities controls (see notes in Table II for a complete list of these controls). Columns (2) to (6) and (8) to (12) correspond to the same regression run in a different sub-sample. Columns (2) and (8) restrict the sample to districts in which PDI-P won by more than 10 percentage points with respect to the second most voted party. Columns (3) and (9) restrict the sample to districts in which PDI-P won by less than 10 percentage points. Similarly for the rest of columns. Propensity score matching results include a full set of province fixed effects interacted with the propensity score percentile dummies. Standard errors of the propensity results are bootstrapped. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Turnover Effects

	Dependent variable: *Kelurahan* Head Turnover 1999 - 2000				
	Whole sample	PDI-P Won Large 1999	PDI-P Just Won 1999	Golkar Just Won 1999	Golkar Won Large 1999
	(1)	(2)	(3)	(4)	(5)
Sample Mean Dep. Var	*0.180*	*0.134*	*0.200*	*0.178*	*0.193*
Golkar Wins	-0.0152	0.0572	-0.1252**	0.0180	-0.0399
	(0.031)	(0.053)	(0.061)	(0.047)	(0.065)
Golkar Wins * New Mayor	0.0057	-0.0999	0.1988***	-0.2083**	0.1613*
	(0.042)	(0.065)	(0.067)	(0.088)	(0.083)
Observations	3,024	1,073	550	354	798
R-squared	0.236	0.283	0.250	0.270	0.226
Adjusted R2	0.175	0.212	0.154	0.141	0.147

Notes: Robust Standard errors clustered at the district level in parenthesis. The unit of observation is the *kelurahan* level (villages with an appointed village head). The dependent variable is a dummy that takes value 1 if there was a *kelurahan* head turnover in the year after the 1999 election. All regressions include district fixed effects, geographic, religious, and facilities controls (see notes in Table 2 for a complete list of these controls). Columns (2) to (5) correspond to the same regression estimated in a different sub-samples. In column (2) the sample is restricted to districts in which PDI-P won by more than 10 percentage points with respect to the second most voted party. In columns (3) the sample is restricted to districts in which PDI-P won by less than 10 percentage points. Similarly for the rest of columns. *** p<0.01, ** p<0.05, * p<0.1.

Table 5
Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Baseline Results	Incidence of Conflict	Presence of the Army and Police	Natural Resources	Poverty Alleviation Program	Change in Facilities	All the previous controls	Changes in Village Funding	Village Employ-ment composition	Kecamatan (subdistrict) Fixed Effects
	A. Dependent Variable: Golkar wins in 1999									
Kelurahan * PDI-P Won Large in district	0.0016	0.0008	0.0018	0.0007	0.0018	-0.0037	-0.0050	-0.0102	-0.0010	-0.0095
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.015)	(0.015)	(0.020)	(0.019)	(0.015)
Kelurahan * PDI-P Just Won in district	0.0764***	0.0790***	0.0760***	0.0753***	0.0786***	0.0811***	0.0847***	0.0102	0.0326	0.1140***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.029)	(0.028)	(0.028)	(0.041)	(0.057)	(0.031)
Kelurahan * Golkar Just Won in district	0.1277***	0.1271***	0.1220***	0.1251***	0.1275***	0.1299***	0.1220***	0.2000***	0.0690	0.0591
	(0.036)	(0.037)	(0.036)	(0.036)	(0.037)	(0.035)	(0.036)	(0.072)	(0.072)	(0.039)
Kelurahan * Golkar Won Large in district	0.0441**	0.0442**	0.0365*	0.0426**	0.0416**	0.0444**	0.0344*	0.1482***	0.0654**	0.0731***
	(0.018)	(0.018)	(0.019)	(0.018)	(0.018)	(0.019)	(0.019)	(0.044)	(0.026)	(0.018)
Kelurahan * Other Won Large in district	0.0677*	0.0668*	0.0708*	0.0669*	0.0661*	0.0760*	0.0782*	0.1288**	-0.0043	0.0349
	(0.037)	(0.037)	(0.038)	(0.037)	(0.038)	(0.039)	(0.040)	(0.059)	(0.030)	(0.034)
Observations	43,394	43,391	43,394	43,394	42,965	41,928	41,498	10,956	6,856	43,394
R-squared	0.391	0.392	0.391	0.391	0.393	0.393	0.398	0.473	0.499	0.538
Adjusted R2	0.386	0.386	0.386	0.386	0.388	0.387	0.391	0.456	0.473	0.505
	B. Dependent Variable: PDI-P wins in 1999									
	Baseline Results	Incidence of Conflict	Presence of the Army and Police	Natural Resources	Poverty Alleviation Program	Change in Facilities	All the previous controls	Changes in Village Funding	Village Employ-ment composition	Kecamatan (subdistrict) Fixed Effects
Kelurahan * PDI-P Won Large in district	0.0370*	0.0376*	0.0356*	0.0382*	0.0368*	0.0437**	0.0437**	0.0348	0.0363	0.0337*
	(0.021)	(0.021)	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.028)	(0.029)	(0.019)
Kelurahan * PDI-P Just Won in district	-0.0370	-0.0373	-0.0394	-0.0366	-0.0392	-0.0391	-0.0433	0.0989	-0.0285	-0.0568
	(0.044)	(0.044)	(0.044)	(0.043)	(0.045)	(0.045)	(0.045)	(0.105)	(0.076)	(0.035)
Kelurahan * Golkar Just Won in district	-0.0870**	-0.0871**	-0.0880**	-0.0828**	-0.0847**	-0.0796*	-0.0761*	-0.1527***	-0.0948	-0.0316
	(0.042)	(0.043)	(0.041)	(0.042)	(0.042)	(0.041)	(0.040)	(0.058)	(0.065)	(0.035)
Kelurahan * Golkar Won Large in district	-0.0241	-0.0242	-0.0206	-0.0234	-0.0218	-0.0261*	-0.0206	-0.1001***	-0.0319*	-0.0378**
	(0.015)	(0.015)	(0.016)	(0.015)	(0.015)	(0.016)	(0.016)	(0.024)	(0.018)	(0.016)
Kelurahan * Other Won Large in district	-0.0036	-0.0045	-0.0066	-0.0052	-0.0050	-0.0048	-0.0114	0.0166	0.1080	0.0221
	(0.044)	(0.043)	(0.044)	(0.044)	(0.043)	(0.045)	(0.045)	(0.056)	(0.087)	(0.049)
Observations	43,394	43,391	43,394	43,394	42,965	41,928	41,498	10,956	6,856	43,394
R-squared	0.353	0.354	0.354	0.354	0.355	0.354	0.358	0.416	0.431	0.502
Adjusted R2	0.348	0.348	0.348	0.348	0.35	0.349	0.351	0.397	0.402	0.466

Notes: Robust Standard errors clustered at the district level in parenthesis. The unit of observation is the village level and the econometric model is Linear Probability Model. In Panel A the dependent variable is a dummy that takes value 1 if Golkar was the most voted party in the village in the Parliamentary election of 1999 and 0 otherwise. In Panel B the dependent variable is a dummy that takes value 1 if PDI-P was the most voted party in the village in the Parliamentary election of 1999 and 0 otherwise. All regressions include district fixed effects, geographic, religious, and facilities controls (see notes in Table 2 for a complete list of these controls). The controls are also interacted with the dummies for the different type of districts (depending on which party was the most voted party at the district level). Incidence of conflict controls are dummies for conflict between villagers and the government apparatus, conflict between students, conflict among villagers and other types of conflict. Presence of the army and the police controls include dummy for whether at least one army member is present in the village, existence of police or Kamling -guard post- station. Natural resources controls include % of households in the mining sector and dummies for whether the following minerals are quarried: coralstone, sand, lime, sulfur, quartz, and kaolin. Poverty alleviation program comprise a dummy for whether the village was an IDT recepient and the percentage of households that recevied funds. Changes in Facilities correspond to the change in public facilities between 1996 and 2000. Changes in transfers by upper governments includes the percentage change in funds from the central, provincial, and district governments. Government and private sector employment controls include the percentage of people work in the private and public sectors. *** p<0.01, ** p<0.05, * p<0.1.

Table 6
Robustness Checks: Targeting Supporters Hypothesis

	A. % Change in Village Funds between 1996 and 2002 by Source					
Dependent Variables:	Central Government		Provincial Goverment		District Goverment	
	(1)	(2)	(3)	(4)	(5)	(6)
Aligned with District	-0.0103	-0.0084	0.0158	0.0137	0.0224	0.0256
	(0.017)	(0.018)	(0.022)	(0.023)	(0.038)	(0.039)
Kelurahan		-0.0550		-0.1588**		-0.1250
		(0.056)		(0.077)		(0.126)
Aligned * *Kelurahan*		**-0.0390**		**0.0694**		**-0.0496**
		(0.058)		(0.060)		(0.113)
Observations	42,208	42,198	23,270	23,267	19,353	19,346
Adjusted R-squared	0.117	0.118	0.274	0.274	0.230	0.230

	B. % Change in Facilities between 2000 and 2003											
Dependent Variables:	Hospitals		*Puskesmas*		Maternity Hospitals		Polyclinics		Kindergartens		Primary Schools	
	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Aligned with District	-0.0001	0.0001	-0.0017	-0.0042	0.0002	0.0004	0.0026	0.0031	0.0036	0.0032	-0.0050	-0.0060
	(0.001)	(0.001)	(0.006)	(0.006)	(0.001)	(0.001)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.005)
Kelurahan		0.0028		0.0874***		0.0113		-0.0036		-0.0159		-0.0164
		(0.007)		(0.022)		(0.012)		(0.014)		(0.025)		(0.019)
Aligned * *Kelurahan*		**-0.0023**		**0.0409***		**-0.0047**		**-0.0111**		**0.0028**		**0.0221**
		(0.008)		(0.023)		(0.014)		(0.016)		(0.023)		(0.019)
Observations	45,791	45,713	45,624	45,546	44,301	44,223	43,104	43,026	42,867	42,797	45,383	45,305
Adjusted R-squared	0.0138	0.0138	0.144	0.146	0.0129	0.0131	0.0268	0.0269	0.0290	0.0290	0.0320	0.0315

Notes: Robust Standard errors clustered at the district level in parenthesis. The unit of observation is the village level. The dependent variable in Panel A is the % change in Village Funds between 1996 and 2002 by Source. The dependent variable in Panel B is the % change in the different facilities between 2000 and 2003. *** p<0.01, ** p<0.05, * p<0.1.

Figures

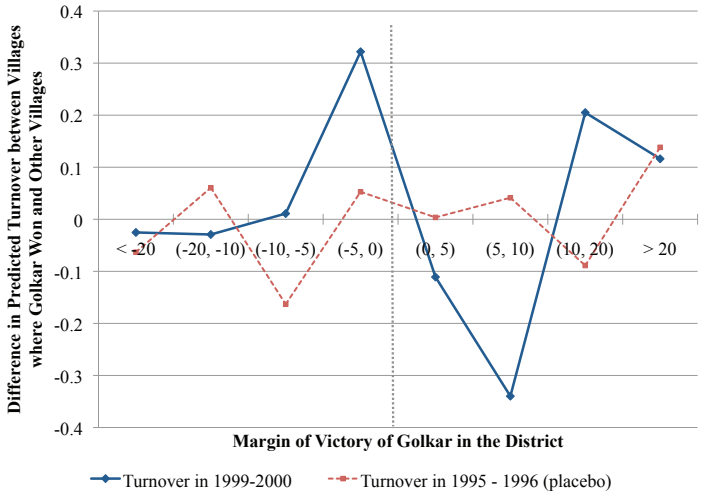

Figure 1: Turnover Differences Across Districts

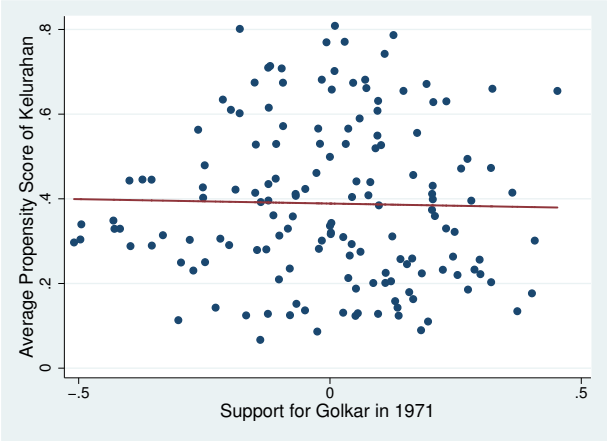

Figure 2: Endogeneity Check