

THE USEFULNESS OF IMPERFECT ELECTIONS: THE CASE OF VILLAGE ELECTIONS IN RURAL CHINA

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Using a sample of rural Chinese villages, which have recently been the subject of democratic reforms, we look for relationships between marginal changes in the democratic process and marginal changes in economic outcomes. We find that even very poorly conducted elections can have large incentive effects. That is, even corruptible elections provide leaders with strong incentives to act in the interests of their constituents. Our findings also allow us to rank the importance of four possible election reforms, which have attracted the attention of international observers and academic researchers.

1. INTRODUCTION

IN AN era where the ability to create working democratic governments is an important part of foreign policy, understanding the relationship between the way an election is conducted and the character of the resulting government is increasingly important. In this paper we contribute to this understanding by investigating the relationship between particular electoral protocols, election outcomes, and the extent of rent seeking by local governments. More generally, we examine the widely held beliefs that elections make government officials more responsive to the body politic, and further, that elected officials are more responsive as elections are less subject to corruption.

To conduct our investigation we examine a sample of rural Chinese villages that have recently been the subject of democratic reforms. This sample of villages constitutes a nearly ideal statistical laboratory in which to investigate the consequences of marginal changes in the democratic process. The many small villages in rural China engage in many of the same economic activities, and subsequent to governance reforms conducted in the late 1980s, are similar in their form of government. Consequently, it is reasonable to look for relationships between marginal changes in the democratic process and marginal changes in economic outcomes. We pursue precisely this strategy.

We find that even very poorly conducted elections can have large incentive effects. That is, even corruptible elections provide leaders with strong incentives to act in the interests of their constituents. This validates the

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strategy that the Ministry of Civil Affairs has pursued for implementing elections: first focus on increasing the frequency of elections and then focus on improving their quality (Shi, 1999). Beyond this, our findings also allow us to rank the importance of four possible election reforms that have attracted the attention of international observers and academic researchers. We find the strongest evidence that restrictions on proxy voting will improve the ability of electorates in rural China to oversee their leaders. The evidence that reductions in government involvement in the nominating process will improve the quality of government is about equally strong. We find no evidence that switching from mobile to fixed polling places or increasing opportunities to make campaign speeches affects government behavior.

2. ELECTIONS AND RENT SEEKING IN RURAL CHINA

Our empirical strategy will be to look at the relationship between the likelihood of re-election for local officials in rural Chinese villages, election protocols for these villages, and rent-seeking activity by these local governments. Thus, to begin, we describe the operation of rural governments and the conduct of elections. In order to deduce a measure of government rent seeking, we also describe the nature of property rights in agricultural land.

2.1 *Village Governance*

The two principal figures in most rural Chinese villages are the “village leader or head” (*cunzhang*) and the “party secretary” (*shuji*). Since the 1990s, the village leader is almost always an elected official. The party secretary, however, is typically appointed by the township government or selected by the village party “cell.” In addition to these two officials, the village government typically includes several subordinate-elected officials.

However elected, the village leader shares power with the appointed party secretary. The reform that required the election of village leaders, the Village Organic Law, enumerates responsibilities for the village leader, while leaving the Party Secretary in charge of “core leadership” (Guo and Bernstein, 1999).¹ In practice, it appears that the party secretary and village leader often divide authority. Even though village leaders share authority with party secretaries in some villages, our investigation of the extent to which elections allow villagers to replace leaders who are part of an ill-behaved government remains reasonable. A comparison with western democracies makes this clear: electorates in western democracies routinely punish their representatives for government behavior in spite of institutional limits on the extent to which these representatives could influence the government’s actions.

¹Not surprisingly, Guo and Bernstein (1999) document several cases where this arrangement leads to conflict between the two officeholders.

2.2 *Elections*

Village elections in rural China were first mandated by a central government initiative known as the Village Organic Law. This law required villages in rural China to hold an election for village leader and village council every three years (O'Brien and Li, 2006). Implemented by the Ministry of Civil Affairs on a trial basis beginning in 1988, the Village Organic Law was fully implemented by 1998. Elections spread slowly, but by the mid- to late-1990s, were nearly universal. Our data describe the most recent election in 57 rural villages, as of October 2000.²

All 57 villages report an election during the five years 1996–2000. Forty-nine villages report an election during 1998–2000, and are therefore in compliance with the Organic Law. Seven villages report elections in 1997. Because our survey was conducted in October 2000, the compliance status of these villages hinges on the unobserved month in 1997 when they held their elections. Because it is natural for an agricultural community to schedule elections in quieter winter months, our suspicion is that at least a few of these seven were very near a new election date. One village reports its most recent election as occurring in 1996, and hence is out of compliance with the Organic Law. Therefore, our data indicate that elections are universal and that they are held with the mandated frequency in most villages.

In our sample, 49% of incumbents survived the most recent elections,³ with considerable heterogeneity in survival rates across provinces: from only 10% in Shaanxi to 80% in Sichuan. For comparison's sake, note that nearly 80% of incumbent state governors in the U.S. survive elections.⁴ Thus, turnover rates for village leaders in rural China are consistent with elections that give the electorate the ability to replace leaders who do not act in their interests.

2.3 *Electoral Protocol and Electoral Success*

We now turn our attention to the details of how elections are conducted. Several papers have examined the conduct and outcomes of village elections,

²Our survey actually included 60 villages. We drop three villages where it appears that the incumbent leader did not run for re-election because he was promoted to a higher position.

³Of our 57 villages, we observe 28 villages where the incumbent survives this election. In the remaining 29 villages, we observe that the village leader changes in the election year. For these villages our data do not distinguish between villages where incumbents declined to run for re-election, and villages where they ran for re-election and were defeated. We recall Lyndon Johnson's 1968 decision not to run for a second term as President of the United States and note that the distinction does not appear to be an important one. If we regard the decision to run for re-election as an endogenous one, any leader who runs for re-election and loses should be regarded as having made a mistake.

⁴This estimate is based on numbers provided in Table 1 of Besley and Case (1995a). In calculating re-election rates, they exclude governors who could not run again because of binding term limits, and those who decided to run for Congress rather than seek re-election.

e.g. Li (2003), O'Brien and Li (2000, 2006). These papers find that elections are often vulnerable to corruption, if they are not actually corrupt.

Our analysis concentrates on four election protocols suggested to be important by our experience in the field or by other researchers. These four election protocols are as follows:

Is Voting Carried Out at a Fixed Location? Ballots are sometimes collected with roving ballot boxes that are carried from house to house on election day (our survey, and O'Brien and Li, 2006). Roving boxes are, in principle, easier to stuff than a ballot box at a fixed polling place, and households may be intimidated more easily at home than at a fixed public polling place (Li, 2003). When there is a fixed polling place, voting typically occurs at the headquarters of the village government. In a small percentage of cases, typically when village residents are widely dispersed, voting may occur at the office of each of the village small groups.⁵

Is the Nomination of Candidates Purely Popular? Our survey indicates that the process of getting on the ballot is highly variable. In some villages, only individuals or groups of individuals have the right to nominate candidates. In other cases, nominations are made either by the small group (*xiao zu*) or by the village representative committee (*cunmin daibiao hui*). In still other cases, other entities within the village such as the village party cell or the village committee play an important role. Finally, in a handful of cases, the township government plays a key role in the nomination process.

We originally divided the nomination process into four basic types, but subsequently (based on preliminary analysis) reduced our measure of the nomination process to a single categorical variable that is coded 1 if the right to nominate candidates resides solely and entirely with voters or groups of voters.⁶ The absence of such direct nominating rights may restrict the slate of candidates available to the villagers, and it is easy to imagine that this systematically biases election outcomes.

Is There a Public Candidate Forum? Our survey indicates that in some villages candidates have an opportunity to address the villagers, while in others they do not. O'Brien and Li (2006) suggest that the ability to make campaign speeches is important. In principle, such speeches increase the information available to the electorate about the slate of candidates. This change in the electorate's information could lead to systematically different election results.

⁵Villages are typically divided into six to eight small groups (*xiao zu*). In the pre-reform era, small groups were the same as the production teams.

⁶Kennedy (2002) also find this to be the most important distinction.

Is Proxy Voting by Non-Family Members Permitted? The franchise is given exclusively to people registered as residents in the village, and extends to registered residents not present in the village on election day. In all of our villages, absent residents are allowed to cast their votes by proxy. Our survey also indicates that in about one-third of our villages, residents who are present in the village but do not vote may have their votes cast by proxy.

Our survey records that in some villages, only immediate family members and near relatives may serve as a proxy, while in others non-family members may also do so. Our measure of proxy voting is an indicator variable that takes the value 1 when only family members may serve as a proxy, and 0 when non-family members may serve as a proxy. Clearly, as there are fewer restrictions on proxy voting the opportunities for corruption increase.

We would like to investigate the relationship between election protocols and a leader's probability of surviving an election. Our approach to this investigation hinges on whether election protocols are determined at the village level or at some higher level of government. Likewise, our investigation depends on the accuracy with which we measure protocol variables.

On the basis of anecdotal evidence we expected that election protocols would be determined within individual villages. However, the data supports the opposite conclusion. The Village Organic Law places responsibility for monitoring elections with the Ministry of Civil Affairs and the county and township governments (O'Brien and Li, 2006). This is broadly consistent with our earlier observation that survival rates vary dramatically across provinces. The possibility that election protocols are determined at the county level finds further support from OLS regressions, which predict each of the four protocol variables using county indicators (our sample contains two villages per county). These regressions have R^2 's in the neighborhood of 0.75, indicating that most of the variation in protocol is explained by county-level processes.

To investigate the determinants of electoral protocol further, we note anecdotal evidence that villagers can sometimes successfully protest village government actions by finding a patron at some higher level of government (O'Brien and Li, 2006). These anecdotes suggest an alternative model of how electoral protocols are determined: local officials balance the benefits of manipulating election protocols against the expected costs that arise if villagers are provoked to lodge protests with higher levels of government. This suggests that electoral protocol should depend on how costly it is for villagers to communicate with the press or potential patrons in higher levels of government. To test this prediction, we conduct regressions predicting different election protocol variables as a function of variables measuring these communication costs and other variables that reflect

village endowments.⁷ These regressions generally have little ability to explain election protocols, and do not allow us to accept the hypothesis that village-level variables determine election protocols. Together with our earlier result that county-level variables are important determinants of election protocol, this leads us to conclude that electoral protocols are exogenous to rural Chinese villages, just as mandated by the Village Organic Law.

We now turn our attention to the problem of observing election protocols. In each village, our survey teams interviewed a village cadre (or ex officio cadre) about how the last election was conducted.⁸ As a check, our survey teams also asked four villagers the same questions. Unsurprisingly, the four villagers did not always give the same answers, and did not always agree with the cadre. Thus, cadres and/or villagers are reporting election protocols with some error.

To assess the importance of this measurement error, we first construct a variable that contains the modal villager response to each of our protocol questions. For villages where we record both modal villager and cadre responses to our protocol questions, these responses agree about 80% of the time. If reporting errors are random, this is consistent with cadre and modal villager reporting correctly about 90% of the time.⁹ Thus, our measures of electoral protocol appear to be quite accurate.¹⁰

Our exposition concentrates on results based on cadre responses to the protocol questions. However, we have duplicated our results using the modal villagers' responses, and, unless noted otherwise, find results that are qualitatively identical to those we report. As a further check on the role of attenuation bias, we will conduct a two-stage procedure which uses the modal villager's response and a collection of village controls as an instrument for the cadre's response.

⁷The actual regressors that we use are the number of households, the furthest distance between two small groups in the village, the time it takes to get to the township, the percentage of households with phones, land per capita, the percentage of working individuals in the village that farm, and provincial dummies. For each of these four regressions, an *F*-test does not allow us to reject the hypothesis that all of the village controls (excluding provincial dummies) are 0 at conventional levels of significance.

⁸"Cadre" refers to any government official. In our case, enumerators typically interviewed the village leader, or *cunzhang*, and occasionally interviewed the party secretary.

⁹If each reports the true protocol with probability p , then they will make identical reports with probability $p^2 + (1 - p)^2 = 0.8$. Solving gives $p = 0.89$.

¹⁰There is one variable for which the villager and cadre reports are systematically different. The villagers report only four villages with a public forum, and in all of these villages the incumbent did not survive the election. The cadres, however, report public candidate forums in 12 villages, in five of which the incumbent survived (see Table 2). For this protocol we prefer the cadre responses. Cadres are more likely to have attended a public candidate forum than an average villager, and we suspect that villagers are more likely to attend such a forum if they are unhappy with the current government.

2.4 Property Rights in Rural China and a Measure of Rent Seeking

Most cropland¹¹ in rural China, 73% in our sample, is “responsibility land” (*ziren tian*).¹² By western standards, responsibility land is exotic. It is distributed to households on the basis of household size, and possibly household labor supply. It is also subject to periodic “village-wide reallocations” in which the village government confiscates a large share of the stock of responsibility land from households and then reallocates the land to existing and newly formed households. In these village-wide reallocations, the village government may also reassign responsibility land to a different property rights regime.¹³ Village-wide reallocations typically occur every five or six years, and sometimes less frequently. In addition to village-wide reallocations, smaller reallocations of responsibility land are also common.

Responsibility land is subject to two types of “tax.” The first is an agricultural quota, which requires the farmer to sell a certain amount of farm output, typically grain, to the state at a below-market price. It is often possible to fulfill a quota obligation with a cash payment equal to the difference in the value of quota at market and procurement prices.¹⁴ The second type of tax is an agricultural tax, payable in grain or cash.¹⁵ Both of these taxes are effectively paid to the central government. Because a village’s agricultural tax burden is fixed, as the amount of responsibility land decreases, the tax rate per unit of responsibility land increases. Thus, a change in the amount of responsibility land reallocates both agricultural and the village’s tax burden.

Local governments may convert responsibility cropland to a number of other uses. Two are of particular interest.¹⁶ Reductions in responsibility cropland occur if the village sells some of its land for either residential or commercial uses. Corrupt behavior by local government officials who manage such sales is widely reported; hence there is reason to believe that the proceeds from such land are often diverted from village coffers.

Local governments may also convert responsibility cropland to “contract land” (*chengbao tian*). After responsibility land, contract land is the most

¹¹Throughout our analysis, we restrict attention to cropland. While cropland accounts for the majority of agricultural land, some agricultural land is devoted to orchards, greenhouses, and fish ponds.

¹²We include in responsibility land what is usually referred to as grain ration land (*kouliang tian*), which is allocated to households to meet grain subsistence needs. The key difference between grain ration land and responsibility land is that the former does not carry a quota. See Brandt et al. (2004) for a discussion of property rights regimes in rural China.

¹³While the central government periodically issues directives guaranteeing secure tenure on responsibility land, these directives are systematically ignored, and reallocation of village land continues.

¹⁴In 2000, the implicit tax associated with the quota effectively turned into a subsidy as the market price fell below the procurement price. Quotas were subsequently abolished.

¹⁵In 2003, the agricultural tax began to be phased out.

¹⁶There are two other small property rights regimes with which we will not be concerned: private plots (*ziliu di*), which are a legacy of the collective era, and reclaimed land (*kaihuang di*).

common property rights regime, and it accounts for 13% of the cropland in our sample. Unlike responsibility land, the property rights associated with contract land are familiar in the west. Villagers lease contract land from the village, for a mutually agreed-upon price and duration. Rent payments for contract land are made to the village government, and are the property of the village government. Contract land is not generally subject to either the agricultural quota or tax.

Two features of the way property rights are arranged are important for this analysis. First, the village government is a party to every transaction, which changes the amount of responsibility or contract land. Only the village government may sell responsibility land or convert it to contract land. Thus, institutional changes that alter the incentives faced by local bureaucrats may lead to changes in the share of land held as responsibility land. Second, with contract land and land sales, more of the land rent is extracted for village coffers and used at the discretion of village officials.¹⁷

In summary, a decrease in the proportion of village responsibility land indicates an increase in the share of the villages' land rents that are appropriated by the village government. If the local government is corrupt, this increased revenue is used for private ends. We will often use "increase in rent seeking" and "decrease in responsibility land" as synonyms. This is literally correct: as responsibility land decreases, the share of a village's land rents appropriated by the village government increases. If, as seems likely, the benefits of being a village leader increase with the village budget (i.e. the rents associated with office holding), then our usage corresponds with the usual usage of "rent seeking." If, implausibly, local officials derive no benefit from village revenues, then a decrease in responsibility land does not correspond to rent seeking in the ordinary sense, but instead serves exclusively to procure public goods, which may or may not serve the electorate's interests. In either event, all else equal, we expect that the electorate will reward leaders who deliver more responsibility land (less rent seeking).

It is worth noting that other measures of rent seeking are easy to imagine; for example, the share of government revenues going for "administrative" expenses, including entertainment. However, compared with land allocation, which can be easily observed by villagers and for which anecdotal evidence of corruption abounds, other rent-seeking measures are obscure.

3. ELECTORAL DEFEAT AS PUNISHMENT AND ITS IMPLICATIONS

In order to proceed we must formalize what we mean by "electoral corruptibility" and also provide a basis for tests to measure the impact of such corruptibility on the ability of elections to discipline leaders.

¹⁷We define the land rent to be equal to the net income from farming the land, less the opportunity cost of the household's labor.

There is an extensive theoretical literature that examines models in which elections have the ability to discipline elected leaders.¹⁸ These models are driven by the following stylized facts. First, the interests of the electorate and their elected leaders do not coincide. Second, elected officials may use their office to advance their own interests at the expense of the electorate's interests. Third, the electorate observes the leader's behavior. Finally, the electorate may decide whether to re-elect the leader conditional on this observation. While the discussion that follows implicitly assumes that the electorate perfectly observes the leader's behavior, such perfect observability is, however, not a requirement of this family of models, and allowing for imperfect observation of the leader's behavior does not qualitatively change the implications of the model (see Besley and Case, 1995a, for details).¹⁹

An implication of these models is that it is generally possible for electorates to use the threat of electoral defeat to discipline elected officials. In order for this threat to be effective, however, it must be true that the value to the officeholder of behaving "well enough" during the current term to secure re-election plus the value of an additional term in office, must be greater than the value of the exclusive pursuit of his own interests during the current term of office plus the value of private sector employment during the subsequent term. An immediate implication of this condition is that, in an equilibrium where re-election occurs, leaders must be strictly better off in office than they would be in their most productive private sector employment. Thus, while elections can serve to discipline the behavior of leaders, in general they cannot cause leaders to act entirely in the interests of the electorate.

It follows from this that there are two constraints on the ability of elections to restrict rent seeking by the elected official. The first is endogenous to the model. If the electorate insists on "too low" a level of rent seeking as a condition for re-election, the leader will conclude that re-election is less attractive than engaging in the maximum possible level of rent seeking for only a single term of office. The second is exogenous to the model and depends on the procedural details of the elections. As the elections are more subject to

¹⁸Much of the literature is principally interested in analyzing the relationship between electoral cycles and fiscal policy (e.g. Besley and Case, 1995a, 1995b; Pettersson-Lidbom, 2002; Tabellini and Persson, 2003). See Besley and Case (1995a) for a bibliography. In these models a politician has private information about his ability, e.g. Rogoff (1990), or about his tastes, e.g. Banks and Sundaram (1998) or Besley and Case (1995a). Electoral cycles in fiscal policies arise as separating equilibria wherein leaders choose policies to signal their type to an electorate, which responds by re-electing "good" leaders and replacing "bad" ones. Barro (1998) and Ferejohn (1986) are important early papers in this literature.

¹⁹In order to concentrate on conflicts between the elected official and the citizenry, models in this literature assume that the electorate is represented by a single representative voter. While this simplifying assumption is consistent with our interest in understanding the way elections alter the extent to which governments are accountable to the electorate, it abstracts from the possibility of conflicts within the body politic. While the implications of such conflicts are clearly of interest, they are beyond the scope of the current research and we leave them as a topic for further research.

corruption, for any given level of rent seeking it will be easier for the elected official to retain office. Given this, it is natural to think of the procedural details of an election as a constraint on the ability of the electorate to remove leaders from office for given levels of rent seeking. This in turn suggests our definition of electoral corruptibility. We will say that one election is less corruptible than another if it permits the electorate to remove the leader from office at a lower level of rent seeking.

To clarify this intuition and to develop an econometric strategy, we require a more formal statement of these ideas. In each period the leader chooses an amount of rent to extract from the village. Let $R^L \in [\underline{R}, \overline{R}]$ denote the magnitude of this rent. The upper bound of this interval is the threshold at which rent seeking becomes criminal and is restricted by legal rather than electoral sanctions. The lower bound is arbitrary.

Let I be an indicator variable, which is 1 in each period when the incumbent wins re-election, and 0 when an incumbent is defeated or retires. By assumption, the electorate is permitted to make re-election conditional on the observed level of rent seeking, and if we restrict the electorate to choosing "re-elect" and "do not re-elect" at each election (as opposed to "re-elect with some probability") then all re-election functions for the electorate are of the form

$$I(R^L, R^E) = \begin{cases} 1 & \text{if } R^L \leq R^E \\ 0 & \text{if } R^L > R^E \end{cases}. \quad (1)$$

Thus, the electorate's choice is simply a choice of R^E , the threshold level of rent extraction determining whether or not an incumbent is returned to office.

If we continue to restrict attention to such deterministic re-election functions like (1), then we can define elections that allow the electorate to choose any feasible threshold, i.e. $R^E \in [\underline{R}, \overline{R}]$, as perfectly uncorruptible. The election protocol that gives rise to this choice set for the electorate places no restrictions on the ability of the electorate to dismiss its leaders, so that the electorate's choice set is large enough that it can punish any feasible amount of rent seeking with electoral defeat.

It is now natural to define an election to be corruptible if for some $\underline{R}^C > \underline{R}$, the electorate is restricted to choose its strategy from $[\underline{R}^C, \overline{R}]$. That is, a corruptible electoral protocol is one where leaders who engage in sufficiently low levels of rent seeking cannot be defeated in an election. This matches our intuition very closely. As \underline{R}^C increases, the leader may engage in progressively higher levels of rent seeking without the possibility of electoral defeat.

This formalization of "electoral corruptibility" matches our intuition about corruptible and uncorruptible election protocols closely. If an incumbent anticipates the opportunity to obtain an additional vote through corrupt electoral practices, then he can increase rent seeking by an amount

that alienates an additional vote without affecting the outcome of the election. Equivalently, the minimum level of rent seeking associated with losing an election increases marginally with the opportunity to stuff a single ballot. Thus, more-corruptible elections are those where the incumbents can cast proxy votes for their constituents, where incumbents can stuff ballots in a mobile ballot box, or where incumbents can prevent competitors from communicating with the electorate.²⁰

The ability to control the nominating process also leads to a more-corruptible election. An incumbent who can choose an unattractive challenger can afford to alienate more voters. Thus an election with a purely popular nominating process is a less-corruptible one and leaders in such villages should be less likely to survive elections. However, a purely popular nominating process should also have a second effect. A less-restrictive nominating process should select leaders who are better, at least on the basis of observable characteristics. These leaders will extract less rent from their constituents and be more likely to survive an election. As we will see later, it is this second effect that appears to dominate in our data: all else equal, leaders in villages with a purely public nominating process are more likely to survive re-election.

An interesting implication of this definition of corruptibility is that corruptible election protocols need not result in different outcomes than perfectly uncorrupt elections. If a less-corruptible election enables a rational electorate to dismiss a leader for a lower level of rent seeking, the electorate may not take advantage of the improved electoral protocol: doing so may cause a leader to prefer a single term in office with high rent seeking to two terms in office, the first with low rent seeking. More formally, if R^* is the minimum amount of rent that an elected official must be permitted to extract in the current period in order for him to prefer to remain in office for a second term, to choosing \bar{R} followed by private sector employment, then marginal changes in the corruptibility of the elections do not affect the behavior of the leaders or the electorate, provided $\underline{R}^C < R^*$. In this case, the ability of the electorate to punish rent seeking is not restricted by the corruptibility of the elections. Rather, it is restricted by the willingness of leaders to forgo current rent in exchange for future rent.

Thus, this discussion suggests that two regimes are possible: one in which corruptibility matters, and another in which it does not. If the corruptibility of elections is not a binding constraint on electorate behavior, then the degree of corruptibility is irrelevant to the observed outcome. On the other hand, if the corruptibility of an election is binding on electorate behavior, then rent seeking will increase as electoral protocols become more corruptible.

²⁰Note that, as should be the case, more corruptible elections favor an incumbent leader's welfare over that of a challenger or the electorate.

Knowing which of these two regimes prevails is of fundamental importance to policy-makers. In the first regime, decreases in rent seeking by leaders cannot be achieved by electoral reform. It can only be achieved by reforms that decrease the threshold at which rent seeking becomes subject to legal sanctions. In the second regime, electoral reform can have the expected effect and lead to lower levels of rent seeking by leaders. With this said, theory tells us only that two regimes are possible; determining which regime prevails in any particular case is an empirical question.

Note that the class of models described above does not provide for a natural distinction between elected officials who decide not to run again, e.g. because they are “tired” of holding office, and elected officials who are defeated in an election. In the context of the models described above, elected office is more attractive than the private sector by assumption, hence the only reason that a leader would decline to stand for re-election is if he believed he would be defeated, and leaders who are defeated in a re-election bid ought to be regarded as having made a mistake in their decision to run. While this is, arguably, a shortcoming of these models, extending them to allow for the possibility that leaders get tired of holding office appears difficult. In addition, our data describe only the sequence of officeholders and the timing of elections. When an election results in a change of leadership, our data do not record whether the outgoing leader was defeated or retired. While an investigation of why leaders leave office is an interesting one, it is beyond the reach of both our theory and data, and we leave the topic as a subject for further research.

3.1 *Econometric Model*

For each village i equilibrium rent seeking and re-election rates in the sort of model described above are determined by the procedural details of elections that determine upper and lower bounds of the electorate’s strategy set, \bar{R}_i and \underline{R}_i , the observed and unobserved characteristics that determine a leader’s preferences for current and future rent seeking, and village characteristics that determine the amount of rent available to the officeholder. As a practical matter, we expect that these factors will vary systematically with observable features of villages and leaders. Let x_i and μ_i be village-level variables related to the conduct of elections and the amount of rent that may be extracted from the village, with x_i observed and μ_i not observed by the econometrician. Let z_i and η_i be the observed and unobserved factors that determine a leader’s preferences.

Given this notation, we can write a leader’s equilibrium choice of rent seeking as

$$R_i^{L*} = R^{L*}(x_i, z_i, \mu_i, \eta_i). \quad (2)$$

Similarly, we have the electorate’s equilibrium decision to re-elect or not as a function of the leader’s choice of rent seeking, the procedural details of the

election, and village characteristics determining the amount of rent available to the officeholder. This gives us a re-election function for each village

$$I_i(R^{L*}, R^{E*}) = \begin{cases} 1 & \text{if } R^{L*} \leq R^{E*} \\ 0 & \text{if } R^{L*} > R^{E*} \end{cases}. \quad (3)$$

If y_i is an indicator variable that takes the value 1 when a leader is re-elected and 0 otherwise, then this re-election function may be written as

$$\begin{aligned} \Pr(y_i = 1 | x_i, z_i, \mu_i, R^{L*}(x_i, z_i, \mu_i, \eta_i)) \\ = F(B_0 + B_1 x_i + B_2 z_i + B_3 R^{L*}(x_i, z_i, \mu_i, \eta_i) + \mu_i). \end{aligned} \quad (4)$$

The analysis so far has imposed the simplifying assumption that F is a step function. In the empirical analysis, we relax this assumption and estimate F non-parametrically and as a standard logit distribution.

Econometric Issues. The theoretical analysis suggests two possible ways to assess the importance of election protocol. The first is to look at the effect of the protocol variables on rent seeking, i.e. in equation (2). This approach is used in empirical studies of electoral cycles in fiscal policy (Besley and Case, 1995a; Pettersson-Lidbom, 2002; Tabellini and Persson, 2003). The second way to assess the importance of election protocol is to look at the effect of election protocol on re-election probabilities, i.e. in equation (4).

Because all villages hold elections, we cannot use equation (2) to investigate the ability of elections to punish rent seeking. However, this is precisely what is captured by the parameter B_3 in equation (4). All else equal, as the magnitude of this parameter is larger, re-election probabilities are more sensitive to rent-seeking activities. Equation (4) also affords an opportunity to assess the importance of election protocol. If an election protocol is binding on the electorate's strategy then the re-election function should shift as we move from villages with the protocol, to villages without it.

Estimating equation (4) poses an econometric problem. Because unobserved village variables, μ_i , occur in the expression for R^{L*} , our estimate for B_3 will be biased. The standard response to this problem is to find a variable correlated with the simultaneously determined variable but not with the error term, and conduct IV estimations. Such an approach is not possible in this case.²¹

With this said, it is easy to see how this problem will affect our results. Imagine that some fraction of the population of leaders (similarly villages)

²¹To see this, note that the only variable that occurs solely in S^{L*} is η_i ; however, this vector partly reflects a leader's private information about his type. A persuasive instrument would need to be one observed by the leader and the econometrician, but not the villagers. More intuitively, we cannot use leader characteristics like age or education as instruments. If such variables affect leader tastes, then upon observing them the electorate will adjust its strategy accordingly, and the variable's effect does not occur solely through its effect on R^{L*} .

possesses an unobserved trait, call it charisma, which increases their likelihood of winning re-election, all else equal. In this case, all else equal, charismatic leaders should engage in more rent seeking. Because we do not observe whether or not a leader is charismatic, for any given level of rent seeking we will observe two survival probabilities, one for leaders with charisma and one for leaders without. This means that the estimated re-election function will be the average of the re-election functions for the two classes of leaders. Interestingly, a careful look at our empirical work shows that extending the list of control variables in an estimation of equation (4) results in a re-election function that more closely approximates a step function. This suggests that this econometric problem probably attenuates our estimates of the relationship between rent seeking and re-election success.

4. DATA

We collected our data in the fall of 2000 as part of a major household and village-level survey conducted.²² Altogether, we surveyed 1,200 households in 60 villages in 30 counties in six provinces of China. The provinces included Liaoning, Hebei, Shaanxi, Sichuan, Hubei, and Zhejiang, and provide a good cross-section of China. The only section of the country that is not covered is the south–southwest. In each province, counties were ranked on the basis of per capita GDP, and one county was then randomly selected from each quintile. Two townships per county were similarly selected from the upper and lower half of the distribution. One village was then randomly selected from each township, with the selection of households in each village also random. Enumerators also interviewed one or more cadres in each village.

Our household and village-level data provide a rich and detailed description of village economic and political life. Among other things, our data include: (1) the history of leadership turnover in each village; (2) details about when and how the most recent village election was conducted; (3) recent changes in household and village land holdings; and (4) household and village demographics and labor supply behavior.

While much of the survey was administered to all 20 households in each village, to reduce the burden of the survey, only four village households were questioned on topic (2). Leaders were also interviewed on all topics.

5. EMPIRICAL RESULTS

5.1 *Descriptive Statistics*

The theoretical model indicates that, if a “cooperative” equilibrium obtains, re-election probabilities should vary with the level of rent-seeking behavior.

²²Our data were collected in collaboration with Nansheng Bai, Scott Rozelle, Linxiu Zhang, and the Chinese Center for Agricultural Policy, Beijing.

TABLE 1 LEADER BEHAVIOR IN YEAR BEFORE AN ELECTION

	Age	Δ Responsibility land	Δ Contract land	Share with investment in schools
Survivor	45.8 (6.3)	-0.006 (0.025)	0.003 (0.010)	0.67
Non-survivor	46.0 (6.7)	-0.013 (0.032)	0.020 (0.084)	0.44

Notes: For year before and after an election: column 1, mean leader age at inauguration; column 2, mean change in the share of cropland held as responsibility land; column 3, mean change in share of cropland held as contract land. Standard deviations are in parentheses. Column 4, share of villages with a capital investment in schools in the year before an election.

Table 1 presents measures of mean election year behavior for leaders who did and did not survive the subsequent election. For completeness, column 1 gives mean age for each class of leaders. Columns 2 and 3 present mean annual changes in the share of village land in responsibility and contract land. On average, losers decreased the share of responsibility land by 0.013 in the year before an election, while an average winner allowed the share of responsibility land to decrease by only 0.006. Similarly, an average loser increased the share of contract land by 0.020, while the average winner increased it by only 0.003. Thus, rent seeking in the year before an election is associated with electoral defeat. Column 4 of Table 1 gives the share of villages where the government undertook a capital expenditure on schools in the pre-election year. We see that two-thirds of successful incumbents made such investments, compared with fewer than one-half of unsuccessful incumbents.²³

While our small sample size precludes precise measurements, Table 1 suggests that rural Chinese electorates discipline leaders who do not further the electorates' interests. Electoral failure is associated with larger decreases in the proportion of responsibility land, with larger increases in the share of contract land, and with a lower incidence of capital expenditure on schools.

To investigate the relationship between changes in responsibility land and re-election probabilities more thoroughly, Figure 1 presents the results of a kernel regression showing the expected rate of re-election success, conditional on changes in responsibility land. That is, a non-parametric estimate of the re-election functions of equation (4). The regression is based on "kernel" density estimates using the Epanechnikov kernel and half-window widths of 0.2, although the basic shape of the regression line is robust to changes in window width (Yatchew, 2003, Ch. 3). These figures conform

²³During our study period, capital investments in local schools were generally funded with village revenues rather than with revenue from higher levels of government.

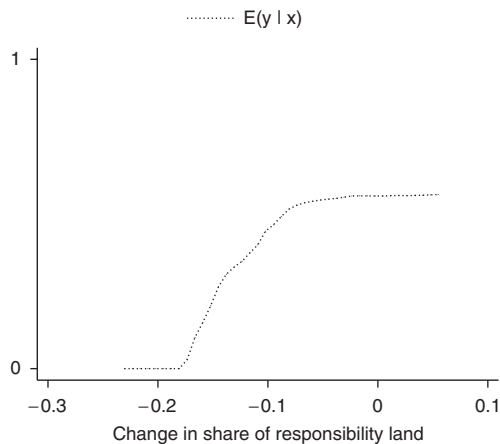


Figure 1. Kernel estimate of the probability of electoral success conditional on changes in the share of responsibility land.

TABLE 2 ELECTION PROTOCOL AND SURVIVORSHIP

Protocol	Number of villages reporting the protocol/number of villages with data	Survival with protocol (%)	Survival without protocol (%)	Pr(mean _{with} = mean _{w/o}) (<i>t</i> -test)
Popular nomination	31/56	51.6	44.0	0.579
Public forum for candidates	11/57	45.5	50.0	0.800
Fixed ballot box	23/53	47.8	46.6	0.935
Restrictions on proxy voting	16/48	25.0	65.6	0.007

with our expectations. The probability of electoral success increases as leaders increase the share of responsibility land.

While Table 1 and Figure 1 confirm that elections do provide an incentive for leaders to reduce rent seeking if they want to remain in office, it says nothing about the role of election protocol. Table 2 provides a first look at the relationship between election protocol and electoral success. Column 1 reports the number of villages for which we have data on each of the four election protocols, and the number in which we observe a particular protocol. For example, of the 53 villages for which we have information on polling, 23 report that during the most recent election voting was conducted at a fixed ballot box. Column 2 gives the probability that a leader survived

an election in villages with the relevant protocol. Thus, among the 23 villages with a fixed polling place, the survival rate of leaders was 48%. Column 3 gives the probability that a leader survives in villages without the relevant protocol.

The table shows that suspicious electoral practices are pervasive in our sample. Polling is conducted at a fixed polling place in only 23 of 53 villages. Candidates had an opportunity to address the voters in a public forum in only 11 of 57 villages. In almost half of the villages, the right to nominate candidates does not reside entirely with voters. Finally, restrictions on proxy voting by non-family members are present in only slightly more than a third of the villages reporting.

When proxy voting is restricted to household members, the survival rate is only 22.2%, barely one-third the survival rate when proxy voting is less restricted, and the difference is highly statistically significant. With popular nominations, survival is modestly higher than without (51.6% vs. 44.0%), although the difference is not statistically significant. For the other two protocol variables, the differences in survival rates are negligible and statistically insignificant. Therefore, of the four protocol variables under consideration, the sample means presented in Table 2 suggest that only variation in proxy voting and, possibly, variation in nominating procedures impact election outcomes.

Figure 2 further investigates the relationship between election protocol and re-election probability. The left panel of Figure 2 shows the results of non-parametric regressions, which predict the expected rate of re-election success conditional on changes in responsibility land for subsamples with

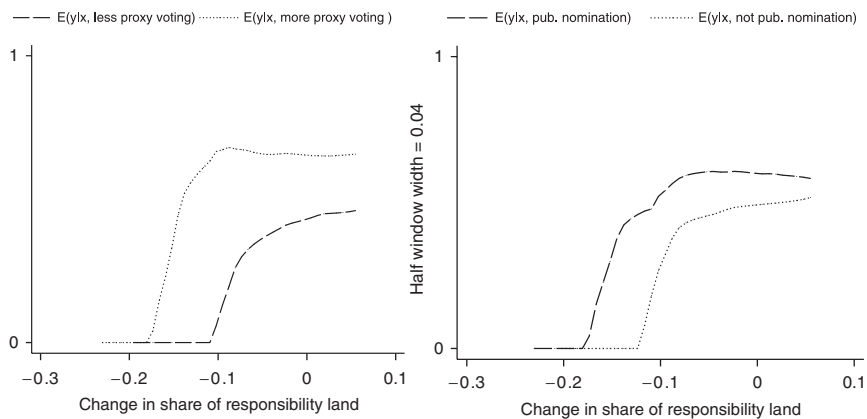


Figure 2. Kernel estimates showing the probability of electoral success conditional on changes in the share of responsibility land, and on protocol variables. Relaxing restrictions on proxy voting shifts the re-election function to the right along the x-axis. A reducing government involvement in the nominating process shifts the re-election function to the left.

and without restrictions on proxy voting. These figures show that, at all levels of rent seeking, re-election is less likely in villages with more restrictions on proxy voting. The right panel of Figure 2 shows the results of non-parametric regressions that predict the expected rate of re-election success conditional on changes in responsibility land for subsamples with and without a purely public nominating procedure. These figures show that, at all levels of rent seeking, re-election is more likely in villages with less government involvement in the nomination process.

We also estimated re-election functions like those in Figure 2 for the other two election protocol variables (not reported). Consistent with our findings in Table 2 these regressions did not support the hypotheses that these protocol variables affect re-election probabilities.

5.2 *Regression Results*

We now examine the relationship between electoral success, electoral protocol, and rent seeking while controlling for other possible sources of variation in the data. Given the econometric model discussed earlier, there are two ways to proceed. First, to estimate equation (2) to check whether levels of rent seeking vary systematically with election protocol. Second, to estimate equation (4) to check whether the probability of electoral success varies systematically with rent-seeking activity or election protocol.

Our efforts to assess the effects of the cadres' reported election protocol in equation (2) failed to find any effect of the election protocol variables on rent seeking. One conclusion consistent with this finding is that, for whatever reason, election protocols simply do not matter in rural China.

However, two other explanations are also possible. First, the evolution of democratic institutions in rural China has been rapid, and substantially driven by decisions made at higher levels of government. Given this, it is probable that leaders do not know election protocols until after their election year behavior is determined. In this case, the leaders regard all elections as identical *ex ante*, and we will observe no systematic differences in rent seeking as protocol varies.

Second, an estimation of equation (2) pools leaders who survived the election with those who did not. Because our theory tells us that leaders who do not survive re-election should all engage in maximal rent seeking, given a high turnover rate, estimates of the effect of changes in electoral protocol will be attenuated by this pooling. The natural solution to this problem is to restrict the sample to leaders who were re-elected. When we duplicated our estimates of equation (2), but restricted our sample to those leaders who survived the election, we continued to find that the protocol variables did not affect levels of rent seeking, with one exception.

If we use the modal villager's assessment of the nominating process, we find that the coefficient of the nominating process variable is positive and

statistically significant in estimates of equation (2). That is, villages where the modal villager reports a purely public nominating experience, on average, experience larger increases in responsibility land than do villages where the modal villager does not report government involvement in the nominating procedure. This result is robust to the inclusion of several different sets of controls, but is not robust to using the leader's reports about the nominating process.

We now turn our attention to an examination of the effect of rent seeking and election protocol on the probability of re-election.

Simple Model. Table 3 presents the results of logit regressions to estimate the re-election function of equation (4). In these regressions, we predict the likelihood of electoral success as a function of leader age, pre-election rent seeking, and various combinations of observable village characteristics, x_i .

Column 1 includes only leader age and rent seeking. Column 2 also includes provincial fixed effects. Column 3 includes several additional village-level variables to control for the effect of unobserved village heterogeneity. More specifically, to control for the costs of collective action and coordination costs, we include the number of households in the village and the furthest distance between any two small groups in the village. To control for the cost of access to other levels of government or the press, we include commuting time to the township (the next highest administrative level) and the percentage of village households with phones. Because land may cease to be a factor in elections as it becomes a less-important part of the village

TABLE 3 RENT SEEKING AND SURVIVORSHIP – SIMPLE MODEL

Variable	(1)	(2)	(3)	(4)	(5)
Village leader age	0.00 (0.04)	-0.07 (0.05)	-0.11 (0.07)	-0.11 (0.07)	-0.12 (0.11)
Change in responsibility land	10.98 (9.70)	24.54** (11.54)	29.21** (11.14)	32.55** (12.55)	115.83** (47.30)
School investment	-	-	-	1.22 (0.84)	-
Land/labor × Change in responsibility land	-	-	-	-	-78.76 (48.91)
Village controls	N	N	Y	Y	N
Provincial dummies	N	Y	Y	Y	Y
Log likelihood	-37.55	-29.64	-25.56	-24.72	-22.19
Number of observations	55	55	55	53	53

Notes: Standard errors are in parentheses.

The village controls include number of households; the furthest distance between two small groups in the village; the time it takes to get to the township; the percentage of households with phones; land per capita; and the percentage of working individuals in the village that farm.

***Denotes statistical significance at 1%, **at 5%, and *at 10%.

economy, we include two variables to control for differences across villages in the “value” that villagers put on land: farm land per capita in the village and the percentage of individuals of working age involved in agriculture.

The regressions in Table 3 show a robust relationship between rent-seeking behavior and electoral success, with the magnitude and significance of the rent-seeking variable increasing in magnitude and significance as we add control variables.

Column 4 adds an indicator for pre-election capital spending on schools. This variable has the correct sign, but is not quite statistically significant at usual levels. Given the crudeness of our measure of government spending, the low significance of this variable is not too surprising. To provide a final check on our findings, column 5 includes an interaction between the land/labor ratio and change in responsibility land. As there is more land per unit of labor, land becomes less valuable and the importance of changes in responsibility land for re-election should decrease. This is exactly the result we see in column 5. Together with Table 2 and Figure 1, the regressions in Table 3 make a strong case for the ability of rural Chinese electorates to replace rapacious leaders at election time.

We now turn our attention to the role of electoral protocol. For comparison purposes, column 1 of Table 4 duplicates the regression of Table 3, column 3. The other columns of this table duplicate this regression, but add the election protocol variables one at a time. Consistent with our earlier results, we see that only the coefficient of restrictions on proxy voting is statistically significant and it has the expected sign. Including the proxy voting or the nominating procedure variable in the regression leads to a large increase in the coefficient of the rent-seeking measure.

We have experimented widely with regressions, like those in Table 4, that include the protocol variable, e.g. interactions between protocol variables and rent seeking, different combinations of control variables. The results of these regressions are broadly consistent with those reported in Table 4. We also experimented with regressions that include more than one election protocol variable, but these regressions were uninformative.

A Model with Many Types of Leader. The preceding estimates implicitly assume that leaders and the electorate play about the same strategies regardless of the leader’s observable characteristics. There is no a priori basis to think this is true. Indeed, Besley and Case (1995a) find that governors who differ in their observable party affiliation behave in a qualitatively different way. Thus, we might expect that old leaders and young leaders will have systematically different tastes for rent seeking, and that electorates will therefore choose different re-election functions to play against old and young leaders. In this section we investigate this hypothesis by incorporating the interaction term $\text{Leader age} \times \text{Change in responsibility land}$ into our earlier regressions.

TABLE 4 RENT SEEKING, PROTOCOL, AND SURVIVORSHIP – SIMPLE MODEL

Variable	(1)	(2)	(3)	(4)	(5)
Village leader age	-0.11 (0.07)	-0.11* (0.06)	-0.11 (0.07)	-0.21** (0.10)	-0.10 (0.08)
Change in responsibility land	29.21* (17.63)	39.66** (14.35)	30.24** (11.73)	77.14** (38.43)	31.07** (14.16)
<i>Protocol variables</i>					
Nomination procedure		1.13 (0.81)			
Candidate public forum			0.45 (1.98)		
Proxy voting				-5.12** (1.46)	
Fixed ballot box					0.75 (1.59)
Village controls	Y	Y	Y	Y	Y
Provincial dummies	Y	Y	Y	Y	Y
Log likelihood	-25.56	-24.09	-25.49	-11.33	-17.73
Number of observations	55	52	53	45	50

Notes: Robust standard errors are in parentheses.

***Denotes statistical significance at 1%, **at 5%, and *at 10%.

TABLE 4a RENT SEEKING, PROTOCOL, AND SURVIVORSHIP – SIMPLE MODAL VILLAGER RESPONSES

Variable	(1)	(2)	(3)	(4)
<i>Protocol variables</i>				
Nomination procedure	3.37* (1.97)		3.78* (1.96)	
Proxy voting		-2.01 (1.35)	-2.29** (0.96)	
Fixed ballot box				0.66 (1.78)
Log likelihood	-23.58	-24.84	-18.91	-21.09
Number of observations	52	52	51	52

Notes: In addition to village controls and provincial dummies, each regression also includes the other explanatory variables reported in Table 5, Leader age, and Change in responsibility land. Robust standard errors are in parentheses.

***Denotes statistical significance at 1%, **at 5%, and *at 10%.

Table 5 duplicates the first four columns of Table 3 with the additional interaction term. The interaction term causes two noteworthy changes. First, the coefficients of two terms involving rent seeking are estimated somewhat more accurately. In most of the regressions we reject the hypothesis that these parameters are zero at the 1% level rather than at the 5% level of Table 3. Second, the sign of the coefficient for rent seeking flips.

TABLE 5 RENT SEEKING, PROTOCOL, AND SURVIVORSHIP – TWO COHORT MODEL

Variable	(1)	(2)	(3)	(4)
Village leader age	0.09 (0.05)	0.06 (0.06)	0.04 (0.08)	0.10 (0.08)
Change in responsibility land	-563.42** (274.21)	-855.51*** (292.61)	-1,414.31*** (485.44)	-1,675.93*** (638.02)
Age × Change in responsibility land	12.43** (6.03)	19.25*** (6.41)	31.97*** (10.68)	37.77*** (14.08)
School investment	-	-	-	21.20* (12.58)
School investment × Age	-	-	-	-0.44 (0.27)
Village controls	N	N	Y	Y
Provincial dummies	N	Y	Y	Y
Log likelihood	-32.61	-23.71	-17.06	-15.73
Number of observations	55	55	55	53

Notes: Standard errors are in parentheses.

The village controls include number of households; the furthest distance between two small groups in the village; the time it takes to get to the township; the percentage of households with phones; land per capita; and the percentage of working individuals in the village that farm.

***Denotes statistical significance at 1%, **at 5%, and *at 10%.

In fact, these regressions show that for a leader older than the sample average of 46, increases in rent seeking are associated with lower rates of re-election, while for leaders with below the sample average age, higher rent seeking is associated with higher rates of re-election. Despite the different magnitudes of the coefficient estimates, these statements are true for each of the four regressions reported in Table 5.

On first glance, these results seem odd. However, recalling the differences observed by Besley and Case (1995a) between Republican and Democratic governors is helpful. In the results reported in Table 5, the electorate appears to expect old leaders to behave like “Republicans” and keep rent extraction low. On the other hand, the electorate appears to expect that young leaders will behave like “Democrats” and extract rent from the village to be used for public works. The results from column 4 of Table 5 provide further evidence for this characterization: old leaders get less benefit from school investment than do young leaders.

To check whether our results about election protocol are robust to the inclusion of the leader age/rent-seeking interaction term, Table 6 duplicates the results of Table 4, with two changes. First, as in Table 5, we include the interaction of leader age with changes in responsibility land. Second, to conserve degrees of freedom, we drop the village controls from all regressions. The results in Table 6 are qualitatively the same as those presented in Table 4. Only the proxy-voting variable has any impact on re-election success.

TABLE 6 RENT SEEKING, PROTOCOL, AND SURVIVORSHIP – TWO COHORT MODEL

Variable	(1)	(2)	(3)	(4)	(5)
Village leader age	0.06 (0.06)	0.04 (0.06)	0.07 (0.07)	0.11 (0.08)	0.10 (0.08)
Change in responsibility land	-855.51** (292.61)	-815.05** (298.31)	-904.56** (307.15)	-2,320.05** (1,032.98)	-840.17** (274.85)
Age × Change in responsibility land	19.25** (6.41)	18.45** (6.54)	20.29** (6.73)	51.78** (23.06)	18.97** (6.06)
<i>Protocol variables</i>					
Nomination procedure		0.76 (0.76)			
Candidate public forum			1.00 (1.08)		
Proxy voting				-3.49* (1.98)	-0.30 (1.06)
Fixed ballot box					
Village controls	N	N	N	N	N
Provincial dummies	Y	Y	Y	Y	Y
Log likelihood	-23.71	-23.24	-23.31	-14.51	-21.63
Number of observations	55	54	55	47	52

Notes: Robust standard errors are in parentheses.

***Denotes statistical significance at 1%, **at 5%, and *at 10%.

TABLE 6a RENT SEEKING, PROTOCOL, AND SURVIVORSHIP – TWO COHORT MODAL VILLAGER RESPONSES

Variable	(1)	(2)	(3)
Nomination procedure	2.202*** (0.83)		
Proxy voting		-2.11* (1.15)	
Fixed ballot box			-0.18 (1.65)
Log likelihood	54	54	54
Number of observations	-21.17	-22.90	-22.90

Notes: In addition to village controls and provincial dummies, each regression also includes the other explanatory variables reported in Table 6, Leader age, Change in responsibility land, and the interaction of Leader age and Change in responsibility land. Robust standard errors are in parentheses.

***Denotes statistical significance at 1%, **at 5%, and *at 10%.

The Importance of Errors in Reported Election Protocols. To assess the importance of errors in the cadres' reported election protocols, we replicated the estimations of Tables 4 and 6 using the modal villagers' reports of election protocol rather than the cadres' reports. These results, reported in Tables 4a and 6a, are very similar to those obtained using the cadres'

reports.²⁴ However, there are two noteworthy exceptions. First, the coefficients of the modal villager's report on proxy voting in column 2 of Table 4a is smaller and slightly less significant than its counterpart in Table 4. Similarly, for the corresponding results from Tables 6 and 6a. That is, if we use the modal villager's report to measure restrictions on proxy voting we find that restrictions on proxy voting are somewhat less important than when we use the cadre's report. Second, using the modal villager's report on the nominating procedure in column 2 of Table 4 and column 2 of Table 6 results in larger coefficients that are, respectively, statistically significant at the 10% and 1% levels. Thus, using the modal villager's report to measure nominating procedures we find the nominating procedure is somewhat more important.

We also experimented with a two-stage correction for attenuation bias in our protocol variables. In particular, we performed a first-stage OLS regression to predict the cadre's reported protocol as a function of the modal villager's report and village controls. We then used this predicted protocol in first-stage regressions corresponding to those reported in Table 4. This procedure resulted in larger and more-significant coefficients for changes in nominating procedure, slightly smaller and less-significant coefficients for proxy voting, and continued insignificant coefficients for the other two protocol variables. In sum, the two-stage regressions are broadly consistent with our other results, but suggest that attenuation bias is more important for our measures of nominating procedure than for measures of proxy voting. We note that this accords with the raw data. The degree of agreement between our two measures of proxy voting is higher than that between our two measures of the nomination procedure.

It remains to check whether proxy voting and nominating procedure have an independent effect. According to the villagers' reports, about one-half of villages have one protocol but not the other, while about one-half have both or neither. Thus, it is reasonable to try regressions to separate out the effects of the two variables. Column 3 of Table 4a includes both proxy voting and nominating procedure, and finds that they indeed do have independent effects.²⁵

5.3 *Importance of Election Protocol*

We have presented evidence that electoral success responds to rent-seeking behavior, to restrictions in proxy voting, and to changes in the nominating process. We now assess the magnitude of these effects.

²⁴Because the villagers report only four villages with a public forum for candidates, and leaders do not survive re-election in any of these four, we cannot duplicate our results based on the leader's reports with villager reports for this variable. See footnote 3.

²⁵Efforts to duplicate this result using the cadres' reports were unsuccessful. When we include more than one protocol variable, many village election outcomes are perfectly predicted and coefficient estimates are erratic.

We first evaluate the importance of changes in rent-seeking behavior. To do this, for every village in our sample, we evaluate the logit distribution twice using estimated parameter values from column 4 of Table 4 and actual values of all village characteristics other than changes in responsibility land. For changes in responsibility land, we use the actual village realization plus one-half of the standard deviation of this variable, and also the actual village realization minus one-half of the standard deviation of this variable. The difference between these two probabilities is the estimated effect of a one standard deviation change in rent seeking on electoral success for this village. We average this difference over all villages and find that the estimated average effect of a one standard deviation increase in rent-seeking activity is a 22% decrease in the probability of re-election.

We next evaluate the effect of changes in the restrictions on proxy voting using the same method, using the coefficients estimated in column 4 of Table 4. We find that the average estimated effect of switching a village from less-restrictive to more-restrictive rules for proxy voting is a reduction of 38% in the incumbent's probability of surviving election. The corresponding calculations for the importance of nominating procedure, based on column 2 of Table 4, indicate that switching to a purely popular nomination process is associated with a 17% increase in survival rate.

Because these estimates are based on the assumption that leader rent seeking does not vary as protocol varies, these calculations should be regarded with some caution. With this caveat in place, however, these estimates suggest that a leader in a village where looser proxy voting is permitted can engage in considerably more rent-seeking behavior than in a village where proxy voting is more restricted, and, all else equal, have the same probability of surviving re-election.

On the one hand, these calculations imply that reforms to elections may have important effects on the incentives for leaders to engage in rent-seeking behavior. On the other hand, our estimates also show that if before the most recent elections, all of the villages switched to the least restrictive proxy-voting regime, only 69% of leaders would have survived the election (as opposed to the observed survival rate of 49%). For the sake of comparison, U.S. gubernatorial elections have about an 80% survival rate.²⁶ Thus, even elections that operate without restrictions on proxy voting provide a strong disincentive to rent seeking.

6. CONCLUSION

We find that elections in rural China create a strong incentive for leaders to act in the interests of the electorate. The plot of re-election success vs. rent

²⁶This estimate is based on numbers provided in Table 1 of Besley and Case (1995a). In calculating re-election rates, we exclude governors who could not run again because of binding term limits, and those who decided to run for Congress rather than seek re-election.

seeking presented in Figure 2 shows very clearly that re-election probabilities increase as leaders act so that a larger share of village land rents remains with villagers. These results are confirmed by our regression results: nearly all of the regressions in Tables 3–6 show a statistically significant relationship between rent-seeking activity and re-election success. Given an environment where an elected leader's authority is (in principle) subject to usurpation by the unelected Party Secretary, and where electoral practices are suspicious at best, this strikes us as important evidence for the robustness of the democratic process and the usefulness of corruptible elections. These findings also validate the strategy that the Ministry of Civil Affairs has pursued for implementing elections: first focus on increasing the frequency of elections and then focus on improving their quality (Shi, 1999). Our results also confirm findings in Manion (1996) that rural elections select village leaders whose stated preferences are more closely aligned with that of an average villager.

We also find strong evidence that restrictions on proxy voting improve the ability of rural Chinese electorates to oversee their leaders. In Table 2 we see a statistically significant difference in re-election rates as proxy voting by non-family members is and is not allowed. The non-parametric regressions of Figure 2 along with the logit regressions reported in Tables 4 and 6, all confirm that re-election rates drop in villages with restrictions on proxy voting. If we use the modal villager's report rather than the cadre's report, these findings persist, at slightly lower levels of significance.

We also find evidence that a purely public nominating procedure leads to better governance in rural China. In Table 2 we see that re-election rates are higher in villages with purely public nominating procedures than without, but this effect is not statistically significant. This finding is confirmed in the regressions reported in column 2 of Table 4 and column 2 of Table 6. After controlling for other sources of variation in the data, the effect of a purely public nominating process on re-election probability is positive but not significant at conventional levels. If we instead use the modal villager's report, these findings persist, but at levels of statistical significance above conventional thresholds.

That leaders are *more* likely to survive re-election in villages with purely public nominating procedures suggests that the dominant effect of open nominating procedures is to recruit better leaders into office, rather than to provide an incentive for incumbents to work harder to stave off more-competent challengers. Corroborating this conclusion, we find that (using the modal villager's reports, but not the cadres' reports) levels of election year rent seeking are lower in villages with purely public nominating procedures than without (in the subsample of villages where the incumbent won re-election).

We find no evidence that having a fixed ballot box or campaign speeches affects the ability of a rural Chinese electorate to oversee its leaders.

These results appear to have important implications for policy-makers wishing to create and reform the institutions of local government in transition economies. First, because it is elections that matter for restraining rent seeking, and this effect is robust to having poorly conducted elections, the emphasis for reform should be placed on the pervasiveness of elections rather than on their quality. Second, to the extent that efforts are directed at electoral reform, restrictions on proxy voting and increases in electorate participation in the nominating process should be given a high priority. Other details of campaigning and polling appear less important.

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