Tax Reform, Local Resources and Village Leader Elections in Rural China

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Abstract

This paper investigates the effect of the recent Tax and Fee Reform on the re-election incentives of village leaders in rural China from the view of a retrospective voting model. The primary purpose of the fiscal reform was to tighten the hands of local cadres to improve local governance. But predictions of the effects of such tightening policies from a retrospective model can be two-sided. On the one hand, the maximum an incumbent village leader who chooses to behave badly and thus be ousted out from office can grab is restricted, which is welfare-enhancing for villages. However, the equilibrium rents an incumbent can obtain without losing the election also decrease with the rising taxation costs. As a result, an incumbent is more likely to choose the short-run behavior. This paper utilizes data on election outcomes from a randomly selected set of 100 villages across 5 provinces in China to investigate the relative magnitude of these two effects. It also incorporates into the analysis the potentially important role of non-tax local revenue sources and election quality. A Difference in Difference investigation of the re-election rates shows that the net effect of the reform on re-election incentive is negative; furthermore, this effect is amplified by cleaner elections and mitigated by abundance of local non-tax revenue resources.

1 Introduction

China has a large rural population and the governance of rural people has always been an important issue, especially in recent years when we have seen increasing complaints on local cadres' behavior, signalling inefficiency in the governance structure. We have also seen a series of responses of the central government aimed at relieving existing rural tensions, such as the enforcement of village leader elections and the more recent rural tax reforms. Understanding how the rural governance system works and what the recent reform has brought to the villages will provide important insights for future policy making. The village governance structure is a complicated system with many agents involved and interacting with each other. These agents include upper governments (township, county, province and central government), village leaders, village party secretaries and the villagers. There are related studies addressing the roles of one or more of these agents. But most of these studies are in the form of anecdotes and mainly qualitative. This paper focuses on the interaction between village leaders and villagers through an election mechanism, which is only a small part of the whole governance structure, but tries to be more quantitative. What is ignored is the direct influence of upper governments, the indirect influence of upper governments through the appointment of the party secretary and the interaction between the appointed party secretary and the elected village leader in administering village affairs.

The analysis is carried out in a retrospective voting framework. This model is suitable for two reasons: firstly, a voting mechanism does exist, even though imperfect. Elections for village leaders were introduced to rural China and widely carried out with the establishment of the Organic Law of Village Committee (trial version in 1988,and the formal one in 1998); secondly, village leaders acquired more discretion over local public policies such as taxation and public goods provision after the decollectivization in late 1970's, thereby providing something that the village leaders can be held accountable for through the election mechanism. The essence of the retrospective voting model is that voters allow some rents to the politician to make the short run grabbing behavior, which is the worst result for the voters, less desirable. Taking the rents allowed by the voters as "inside rents" and the short run maximum rents the politician can grab as "outside rents", it is quite intuitive that decreases of "inside

rents" and "outside rents" work in opposite directions on the discipline effect of the election mechanism. The recent tax reform provides a policy experiment which lowers the inside and outside rents of a village leader simultaneously by eliminating village levies and informal taxes. These levies and taxes used to be a more or less guaranteed source for local public projects. As a result, financing projects becomes more costly and inside rents decrease. The reform also sets a ceiling for local taxation, thus reducing outside rents. These two changes drive village leaders' incentive for re-election in opposite directions. Which one is stronger turns out to be an empirical question. Wide concerns about the fairness of the elections calls for introduction of election quality into the traditional retrospective voting model. We will see that whatever the net effect of the reform, it is going to be amplified by cleaner elections. On the other hand, since more non-tax resources means less dependence on tax income, the abundance of local non-tax resources helps to mitigate the reform's effect on re-election incentives.

A recent survey on 101 villages from 5 provinces carried out by CCAP (Center for Chinese Agricultural Policy), IGSNRR (Institute of Geographical Sciences and resources Research), CAS (Chinaą́s Academy of Science) in collaboration with the University of Toronto and University of California, Davis in 2005 provides rich information on the attributes of villages and village leaders, the Tax and Fee Reform, village local public projects and recent elections. Data show variation in several important dimensions. Firstly, the timing structure of elections and fiscal reform differs across regions. All of the 101 villages held one election before the reform, while 30 of them had the most recent elections before the reform and 71 of them had the elections after the reform. Secondly, changes of incumbents' re-election rates after the reform differ across provinces. For example, in Jiangsu province, the re-election rate increased from 59% to 74%, while in Sichuan, it decreased from 78% to 69%. Thirdly, abundance of local non-tax financial resources, such as cultivated land, collective or contract firms, and transfers from upper governments, differ. Lastly, the survey shows elections have been carried out in different ways across villages, and thus of different qualities. Investigating these variations in the way suggested by the retrospective voting model, we find the reform's net effect on re-election incentive is negative and very large in magnitude. Cleaner elections significantly amplify the negative effect of the reform. Cultivated land, which is a potential source of land sales revenue, and transfers from upper governments help to mitigate the negative effect of the reform.

However, having collective or contract firms does not help to relieve the disincentive effect of the reform: we find incumbents in villages with more collective or contract firms are less likely to get re-elected after the reform, which suggests the number of collective and contract firms might be more of a measure of the opportunity cost of being village leader than a measure of local non-tax revenue sources. The overall effect of the reform is significant: ignoring the effect of collective and contract firms, an incumbent in a village with median election quality, average cultivated land and transfers for public investment from upper governments is 32% less likely to stay in office for another term after the reform, holding other factors constant.

The remaining part of the paper is organized as the following: part 2 provides a brief background introduction about the evolution of China's rural governance structure and public finance system; part 3 reviews the literature; part 4 models the roles of election quality, tax reform and resources abundance in a retrospective voting model; part 5 describes the data; part 6 discuss the empirical results; part 7 concludes.

2 A Brief History of China's Rural Public Finance System and Governance Structure

China's rural taxation and governance systems have been changing over time with the development strategy of the central government and the role of agriculture in national economy.

Upon the establishment of People's Republic of China in 1949, land was confiscated from the landlords and reallocated to the individual households who were either landless or just owned small amounts of land (Roll, 1974). As a result, the household retained most of the agriculture surplus that was previously collected by the landlords. Households were also taxed by the government, but at a rate no higher than 11% at the beginning of 1950s (Zhou, 2004). While the central government had strong incentives to extract larger surpluses from agriculture to support the industrialization – the top issue on the new Republic's agenda, it was very costly and almost impossible to further increase the tax rate. Collectivization of agriculture was adopted as a solution. Production teams, production brigades and People's communes were estab-

lished as local collective organizations, from the bottom to higher level. Agriculture transactions took place only between the collective organization and the state through the compulsory procurement program. Decisions regarding what to produce and how much to produce were all from above, even so were the rules of income distribution. Taxes were collected by the state implicitly in the form of "price scissor" from industrial and agricultural products exchanges. Under this highly regulated production and distribution system, household income was kept at the subsistence level, and the emigration out of rural areas was strictly restricted through the household registration system. Few decisions on public investments were made at the production team level and households didn't pay directly for the local government expenditure and public goods. In terms of governance, the local cadres were appointed by the higher government officials, and thus not accountable to the peasants. This system provided poor incentives to the cadres of production brigades and teams. The people's commune was the lowest level of formal administrative organization. The commune leaders who made most of the decisions about public investments were appointed by the upper governments and thus were kept only accountable to the above instead of to the commune members below. The leaders of production brigades and teams had little opportunity to be promoted into the formal administrative system, so the incentive from above was very limited. On the other hand, the higher government collected almost all the agriculture surplus and the resources under the control of local cadres was rather limited, and this left the local cadres poorly motivated from below as well (Zhou, 1995).

Decollectivization began in 1978 with the legalization of the Household Responsibility System. Individual households again became the residual claimants of agriculture production and began to be taxed explicitly. Beyond the implicit taxes through quotas, new taxes were also introduced, eg., the tax on special agriculture products in 1983, the tax on the use of cultivated land in 1987. Beyond these agriculture-related taxes paid to higher levels of government (firstly the state and then the provinces after the tax reform in 1994), households were also taxed by local governments in less formal ways. The levies that went to the township governments were for the expenditure in education supplement, social help, family planning, collective transportation and militia exercises; the fees levied by villages were for public accumulation, public welfare and administrative fees on the village level. There were also payments beyond the regular agriculture-related taxes and township and village retention mentioned

above, usually in the forms of fines, apportionments of expenditure and fundraising for public projects. These informal taxes and fees took various forms across regions and it's very difficult to provide an estimate of the value (Auber et al., 2002). Local governments are largely responsible for the funding of all the provision of local government goods (Zhang et al., 2004). Beyond the taxes and fees left for the local government, profit of village enterprises, revenue from sales of village assets and rents from land can all be used to finance local public projects. Bernstein and Lu (2003) provide a comprehensive review of peasants' burdens in China.

The most recent tax reform started with pilots in 1998, and was widely carried out nationally since 2000. The first step of the reform was the elimination of township and village levies and other informal fees collected by the local cadres. At the same time, the formal agriculture and agricultural special product tax rates were raised. The previous village levies that were used to fund public accumulation, public welfare and administrations cost were replaced by a more formal tax, the agricultural tax surcharges, which were restricted to be no more than 20% of the agriculture taxes. There was also some related changes in the management of village accounting and decision making process on village public investments. The reform has been promoted in the following years. In the year 2004, Prime Minister Wen Jiabao promised to eliminate the agriculture-related taxes in five years. The step of the reform was speeded up again in 2005, and the agriculture related taxes were actually eliminated from January 1st, 2006. The change in taxation has also been accompanied in changes in expenditure reassignments and subsidies transferred from the upper governments to counties, towns and villages.

The village governance structure has been under reform as well. The shift of the basic economic unit in rural areas from the production team to household required a corresponding change of the rural governance structure for carrying out state policies and dealing with local public issues. In some areas village administration was left in paralysis after the decollectivization, and there was increasing unrest. Election and self-governance were proposed as a solution for selecting more capable local cadres and facilitating better implementation of state policies that might not be welcomed by the villagers (Kelliher 1997). After 3 years of legislation process, the National People's Congress approved the draft of Organic Law of Village Committees in 1987. This law established villagers' committees as mass organizations of self-government

through which villagers manage their own affairs, educate themselves, and meet their own needs. These committees are composed of three to seven members, serving for three years until the next election. Committee members are supposed to be chosen in popular elections, in which all adult, registered villagers have the right to vote and stand for office." (Li and O'Brien 1999) Village elections were widely implemented with the implementation of the draft. According to Kelliher (1997), elections had been carried out at least in some villages in 18 of China's 30 provinces by 1990, and villages in other provinces caught up in 1993 and 1996. In 1998, the formal Organic Law of Village Committees was established and the legislative process on the provincial level followed. The strengthened legal infrastructure for the system of village self-governance provides more support and protection for the operation of village self-governance nation wide.

3 Literature Review

Besley (2005) provides a comprehensive review on the the literature of political economy of public finance. There are basically two views regarding the nature of government: one is that government is a benevolent planner; the other is that government is composed of rational individuals who conduct rent seeking to maximize their own benefits rather than the benefits of the governed. Following the second view, conflicts between the interests of politicians and citizens become the main issue and the key question is how to make the government run in the public interest. A principal-agency framework, with politicians being the agent and electorate being the principal, has been widely adopted in studies along the second branch. Based on different informational structures, three kinds of models have been developed: one emphasizing the selection of the proper person to the office with only the type of politicians being private information; one emphasizing the discipline of politicians with only the action of politicians being private information; and one that combines the previous two scenarios. Work has been done along each of the three lines. Since a village in China is a small electorate and people in a village are likely to know each other well, asymmetric information about the virtue or competence of village cadres does not seem to be a big issue in this context. What matters more is the discipline effect of election, which is at the core of models in the second category. The canonical model of this type is

by Barro (1973) and Ferejohn (1986). This paper follows the idea of Ferejohn but adopts a simple version of the basic model and introduces election quality into the setting.

On the empirical side, there have been studies of the public financing, public good provision and governance system in rural China. Several recent studies mainly focus on comparing the fiscal outcomes between different regimes through which village leaders are selected: appointed by the upper governments or elected by the villagers (Luo et al., 2007, Zhang et al., 2004, Wang and Yao, 2006) and the interaction of the fiscal reform and elections has been ignored in the sense that their effects have been separately interpreted (Luo et al., 2007). This paper investigates how the reform works within the election mechanism. Related empirical study looking into the election mechanism is the one by Brandt and Turner (2007). They use the change of arrangement of land property rights as a measure of the rent seeking behavior of village leaders. With cross sectional data on 60 villages in 2000, they find an increase in rent seeking leads to a lower probability of being re-elected even though the election procedures are very susceptible to corruption. A potential weakness of their analysis is the endogeneity of re-election outcomes and policy choice. In this paper, rather than estimating a villagers re-election function, we pursue a more reduced form analysis that examines how an exogenous shock, the fiscal reform, affects the overall village political equilibrium described by the re-election incentives of incumbents. The availability of information on two elections in a village allows better control of the village and incumbent heterogeneity.

4 A Retrospective Voting Model with Imperfect Elections

This part introduces election quality into the traditional two-period retrospective voting model and shows that, theoretically, the increase of taxation costs will lead to lower re-election rate; while increases of a tax ceiling has the opposite effect. Furthermore, the magnitude of these effects depends on the quality of the election. The cleaner the elections, the larger the above effects.

4.1 Model Setup

Variable List

t: taxes paid by villagers

T: the maximum to tax

B: villagers' benefit from consuming public goods

C: true cost of providing public goods, a random variable uniformly distributed on $[0, \overline{C}]$

σ: effective taxation coefficient: proportion σ of taxes paid by villagers becomes village fiscal revenue

$\underline{u}$: re-election threshold utility level of villagers

R: incumbents' benefit of getting re-elected

q: measure of quality/corruptibility of election, more specifically, probability of failure in ousting a bad incumbent

Assumptions

1. Villagers are homogenous, thus aggregation of private preferences is not an issue.

2.Candidates for village leaders are homogenous, thus election works only as a discipline mechanism, ie, there is no selection effect.[1]

Timing of the Game

[1]This is for simplification of the theoretical analysis. We expect some selection effects as the overall rents of being village leader have been changed by the fiscal reform, which is very likely to change the pool of village leader candidates. Even though investigation of the relationship between the reform and observed attributes of winners and losers in the sampled elections does not reveal any systematic observation (see Appendix), it's still possible that the change of the pool may take longer than a period of two elections or it is the unobserved attributes that have changed.

1. A village leader is in office and observes C; the leader chooses to provide the public goods or not, and tax the villagers by t. The maximum tax that the village leader can get from the villagers is T.

2. Given the village leader chooses to tax the villagers by t, depending on whether the leader chooses to provide the public goods, the villagers' net benefit will be $B-t$, if the public goods are provided, and $-t$ if not.

3. An election is held, and the villagers choose to re-elect the incumbent or not. The villagers would like to re-elect the incumbent as long as the net benefit $B-t$ is no lower than a threshold $\underline{u}$ and oust the incumbent otherwise. But the election does not function perfectly in the sense that the incumbent can win the re-election with probability q even though the villagers want to oust him.

4.2 Optimization Problem of an Incumbent with Given Re-election Threshold $\underline{u}$

Suppose the re-election threshold of the villagers is $\underline{u}$, then observing C, the village leader resolves the following problem, ending up with a value function of state C, $V(C)$:

$$V(C) = \text{Max}\left\{ \begin{array}{cc} \underset{t}{\text{Max}} & \sigma t - C + R \\ s.t. & B - t > \underline{u} \end{array} , T + qR \right\} \tag{1}$$

Conditional on choosing to provide the public goods, the village leader's problem is:

$$\begin{array}{cc} \underset{t}{\text{Max}} & \sigma t - C + R \\ s.t. & B - t > \underline{u} \end{array} \tag{2}$$

Obviously, the solution for this problem is: $\widetilde{t} = B - \underline{u}$, independent of cost state C. Then the incumbent's payoff of choosing to provide the public goods and tax the villagers by $\widetilde{t}$ under cost state C is

$$V_e(C) = \sigma(B - \underline{u}) - C + R \tag{3}$$

Then the value of state C is:

$$V(C) = Max\{V_e(C), T + qR\} = Max\{\sigma(B - \underline{u}) - C + R, T + qR\} \tag{4}$$

The solution for this problem is a threshold for C,

$$\widehat{C} = \sigma(B - \underline{u}) - T + (1 - q)R \tag{5}$$

When the cost state is above this threshold, the village leader will choose not to provide the public goods and tax the maximum T; when the cost state is no higher than $\widehat{C}$, the village leader will choose to provide the public goods and tax the villagers by $\widetilde{t} = B - \underline{u}$.

4.3 Villagers' Optimal Re-election Threshold $\underline{u}^*$

Knowing the behavior rule of the village leader for given $\underline{u}$, the villagers' problem is to optimize the re-election rule, which is the solution of the following problem:

$$\underset{\underline{u}}{\text{Max}}\ \underline{u}\frac{\widehat{C}}{\overline{C}} - T(1 - \frac{\widehat{C}}{\overline{C}}) \tag{6}$$

Substitute in expression (5), the cost threshold for given $\underline{u}$, we get solution $\underline{u}^*$ to the villagers' problem:

$$\underline{u}^* = \frac{\sigma B + (1 - q)R - (1 + \sigma)T}{2\sigma} \tag{7}$$

Substitute the equilibrium re-election rule (7) into the behavior rule of the village leader as expressed in (5), we get the equilibrium cost threshold:

$$\widehat{C}^* = \frac{\sigma B + (1 - q)R - (1 - \sigma)T}{2} \tag{8}$$

$\widehat{C}^*$ represents the discipline effect of election: higher $\widehat{C}^*$ means the village leader is willing to provide the public goods and tax reasonably under more cost states and only choose to provide no public goods and grab the maximum short-term rents for a small set of extremely high cost states. The expression shows that the incidence of the bad behavior depends on easiness of taxation σ, election corruptibility q, future benefits of getting re-elected R and rent ceiling T. The stronger the discipline effect is when, other factors held constant, taxation is easier (larger σ), or election is cleaner (lower q), or future benefit of getting re-elected is larger (higher R), or rent ceiling is lower (smaller T). Furthermore, the equilibrium probability of an incumbent getting re-elected is:

$$P^* = \frac{\widehat{C}^*}{\overline{C}} + q(1 - \frac{\widehat{C}^*}{\overline{C}}) \tag{9}$$

and the equilibrium turnover rate is:

$$TR^* = 1 - P^* = (1-q)(1 - \frac{\widehat{C}^*}{\overline{C}}) \tag{10}$$

4.4 Comparative Static Analysis of the Equilibrium Re-election Rate

Taxation Costs and Re-election Rate

$$\frac{dP^*}{d\sigma} = \frac{(1-q)(B+T)}{2\overline{C}} \geq 0 \tag{11}$$

which means the higher the taxation costs (thus lower σ), the lower the equilibrium re-election rate.

Potential Rents and Re-election Rate

$$\frac{dP^*}{dT} = -\frac{(1-q)(1-\sigma)}{2\overline{C}} \leq 0 \tag{12}$$

which means the lower the rent ceiling, the higher the re-election rate.

Election Quality

$$\frac{d}{dq}[\frac{dP^*}{d\sigma}] = -\frac{B+T}{2\overline{C}} \leq 0 \tag{13}$$

with $\frac{dP^*}{d\sigma} \geq 0$, this means the lower election quality, the smaller the effect of change in taxation costs on equilibrium re-election rate.

$$\frac{d}{dq}[\frac{dP^*}{dT}] = \frac{1-\sigma}{2\overline{C}} \geq 0 \tag{14}$$

with $\frac{dP^*}{dT} \leq 0$, this means the lower the election quality, the smaller the effect of change in rent ceiling on equilibrium re-election rate.

Overall, the lower the election quality, the smaller the effects of changing taxation costs or rent ceiling on the equilibrium re-election rate.

4.5 Econometric Model

The econometric model derived directly from the theory is of the following form:

$$P_{i,v,t} = \alpha_1 TCeil_{v,t} + \alpha_2 TCost_{v,t} + \alpha_3 TCeil_{v,t} * ElecQ_v + \alpha_4 TCost_{v,t} ElecQ_v \\ +\alpha_5 ElecQ_v + \mathbb{B}X_{i,v,t} + \mu_i + \mu_v + \mu_t + \mu_{i,v,t} \tag{15}$$

where the left-hand side is a binary variable with 1 representing being re-elected and 0 losing. Subscript v stands for village; i stands for village leader; and t stands for time. $TCeil$ represents tax ceiling; $TCost$ represents taxation costs. Both are village and time specific. $ElecQ$ represents election quality which is assumed to be time invariant. X are other village, village leader or time control variables. α_1 and α_2 are both expected to be negative because of the disincentive effect of higher tax ceiling (higher outside rents) and higher taxation costs (lower inside rents). α_3 and α_4 are expected to be negative for the same reasons as α_1 and α_2, namely, better elections will amplify the pure effects of taxation costs and tax ceilings. α_5 is undetermined because even though lower election quality provides lower re-election incentives, the number of those re-elected incumbents who the villagers fail to oust because of the unfairness of elections increases.

China's recent rural fiscal reform increases taxation costs and lowers tax ceiling at the same time. As the model shows, these two changes work in opposite directions on the equilibrium re-election rate. Since we don't have separate measures of taxation costs and tax ceiling, it is impossible to estimate α_1 and α_2. As an alternative, we are going to investigate the overall effect of the reform which is theoretically ambiguous and needs an empirical answer. We change (15) to an estimation equation for the reform's overall effects.

$$P_{i,v,t} = \beta_1 Ref_{v,t} + \beta_2 Ref_{v,t} Res_{v,t} + \beta_3 Ref_{v,t} ElecQ_v + \beta_4 ElecQ_v + \beta_5 Res_{v,t} \\ +\mathbb{B}X_{i,v,t} + \mu_i + \mu_v + \mu_t + \mu_{i,v,t} \tag{16}$$

Assume for a moment no heterogeneity in election quality, the effect of the reform depends on the relative magnitudes of $\alpha_1 \Delta TCeil$ and $\alpha_2 \Delta TCost$, in other words, the effect is determined by parameters α_1, α_2 and changes of tax ceiling $\Delta TCeil$ and taxation costs $\Delta TCost$. These changes may very well differ across villages in the sense that villages with more local non-tax resources are less dependant on tax

revenue and thus less affected by the fiscal reform. So besides the reform dummy $Ref_{v,t}$, we also introduce its interaction with local non-tax resources Res into the regression and expect β_2 to have the opposite sign of β_1. β_3 is expected to be of the same sign as β_1 since cleaner elections amplify whatever the net effect of the reform.

It is appealing to control incumbents' fixed effects μ_i in estimating (16). Candidates (either incumbents or challengers) with unobserved attributes that villagers award are more likely to show up in the second election, in other words, the average unobserved quality of candidates in the second election is systematically higher than those in the first ones. Thus, if μ_i is not controlled for, the reform dummy will be positively correlated with the error term and we are going to overestimate the incentive-enhancing effect of the reform, or underestimate the disincentive effect. But controlling incumbents' fixed effects in (16) by restricting the sample to incumbents running in both elections introduces another source of selection bias: those who received bad shocks in the first election, a very negative μ_{i,v,t_1}, won't show up in the second election and are thus excluded from the sample. Assume μ_{i,v,t_1} and μ_{i,v,t_2} are $i.i.d$ with zero mean for the population, by restricting sample to incumbents running in both elections, we still have zero mean for μ_{i,v,t_2}, but the expectation of μ_{i,v,t_1} is positive because of exclusion of those with super bad shocks in t_1. As a result, controlling incumbents' fixed effects in (16) introduces a negative correlation between the reform dummy and the error term and we are going to underestimate the incentive-enhancing effect but overestimate the disincentive effect of the reform. A dummy indicating whether it's the earlier or later election can be used to correct the positive expectation of error term μ_{i,v,t_1}. This leads to a Difference in Difference identification of the reform effect: the reform changes the way how the re-election rates shift between the most recent and second recent elections. The specific timing structure that some villages have both elections before the reform while others have one before the reform and one after the reform makes this strategy valid. So we are going to introduce two dummies into the estimation equation: $LaterE_{i,t}$ indicating whether it's the later or earlier election and $RFLaterE_{i,t}$ indicating whether it's an after reform later election. The identification of the reform's interaction effects with election quality and local non-tax resources follows in a similar way by interacting election quality and local non-tax resources with dummy $RFLaterE_{i,t}$. So the estimation equation takes the following form:

$$P_{i,t} = \gamma_0 LaterE_{i,t} + \gamma_1 RFLaterE_{i,t} + \gamma_2 RFLaterE_{i,t}Res_{i,t} + \gamma_3 RFLaterE_{i,t}ElecQ_i + \gamma_4 ElecQ_i + \gamma_5 Res_{i,t} + \mathbb{B}X_{i,t} + \mu_i + \mu_t + \mu_{i,t} \tag{17}$$

Since there is no case of one individual having been village leader in different villages, the village unobserved heterogeneity is undistinguishable from the incumbent unobserved heterogeneity. So we drop the village subscript v in this specification. We are expecting γ_1 to be positive if the incentive effect of decreasing outside rents is dominating and negative if the disincentive effect of decreasing inside rents is dominating. Similar to the relationship between β_1 and β_2, β_3, the model predicts γ_2 to have the opposite sign of γ_1 and γ_3 to be same.

5 Data

The data is from a recent survey of 101 villages from 50 towns. Every two sample towns are randomly drawn from a county. Thus the sample covers 25 counties. Every five counties are randomly drawn from one of the following five provinces: Jiangsu, Sichuan, Shaanxi, Jilin and Hebei.

The survey covers many aspects of village political and economic life. The following is a list of contents that provide useful variation for the later empirical work:

1. Village basic information. The survey collects village demography, endowments, economic development and structure information for the year 1997, 2002 and 2004. In the re-election regressions, we control the village characteristics at the 1997 level for elections held between 1999 and 2002, and control them at the 2002 level for later ones. Table 1 provides a summary of some key characteristics. We can see the variation in the amounts of cultivated land and collective or contract firms across villages.

2. Personal information of incumbents running for re-elections. The survey provides detailed personal information of a long list of village leaders. The earliest dates back to the 1960s, and even the shortest one starts from 1995. We extract from the list

information of incumbents in the most recent two elections. Some attributes of these incumbents are summarized in Table 2. There are 172 elections for which we can identify the incumbents' re-election outcomes, 103 before the reform and 69 after the reform. Village leaders who choose not to run are treated as losing in the election; those who resign before the election without obvious exogenous reasons such as being promoted or death are treated as losing as well. Table 3 shows before-and-after-reform comparison of re-election likelihood. As is shown, changes of re-election rates differ across provinces. For example, in Jiangsu province, the re-election rate increases from 59% to 74%; while in Sichuan province, it decreases from 78% to 69%.

3. Timing of the tax reform and the most recent two elections. The timing of the tax reform is mainly determined by provincial governments. The upper part of Table 4 shows that most of the sample villages in Jiangsu (15 out of 21) have the tax reform in 2001, and most of the sample villages in Shaanxi (18 out of 20) have the reform in 2003. Elections are supposed to be held every three years, so the timing of the most recent two elections depends on the year of the first election. For some villages, the first election dates back as early as the beginning of 1980s. The numbers of villages having elections in each year are shown in the lower part of Table 4. In Shaanxi, all the sample villages have both elections before the reform, while most of the villages in the other provinces have one election before the reform and one after. This difference in timing structure of elections and the reform makes the Difference in Difference identification strategy feasible.

4. The survey covers all the projects carried out between 1997 and 2004. The types of the projects include roads, bridges, irrigation projects, schools, etc. Table 5 shows the distribution of the number of projects across villages between 1997 and 2004. Table 6 shows the distribution of the starting year of these projects. Table 7 shows the total number of village public projects with financial support from upper governments and the village average amount of transfers by year and province. We can see that following the wide implementation of the fiscal reform in 2002, a lot more projects were started in the year 2003 when the upper governments increased earmark transfers in public projects by a huge amount. Since transfers from upper governments are one of the most important sources of local non-tax revenue, the rich variation shown in Table 7 across years and regions provides an opportunity to check how the reforms' tightening effect differs with the abundance of local non-tax revenue.

5. The survey also covers election protocols. There has been no significant change in election protocols between the most recent two elections. So we use only the measures of the most recent ones and treat election quality as time invariant. Election protocols are grouped in several categories: preparation, organization, nomination, absentee balloting, voting and vote counting. We select 19 measures which are important dimensions of election quality and which show large variation in the sample. Table 8 shows the pairwise correlation between these measures. Only the significant correlations are presented in the table. The large number of significant coefficients indicates that election quality is quite consistent in the sense that elections more fair in one stage are more likely to be fair in other stages too. For the analysis of how election quality may change the reform's effects on equilibrium re-election rate, we prefer to use a simple one dimension measure of election quality in the regression. We construct an index with MCA method from these 19 original measures. Table 9 shows the results of MCA. The first dimension captures 68% of the total inertia. The corresponding coordinates quantify the categorical variables and are used to construct the index measuring election quality for each village. Larger contribution comes from the variables being assigned sparser scales, such as whether the final list of candidates needs to be approved by upper governments, whether the villagers fill the ballots by themselves, whether absentee balloting by family members is widely used, whether the voting is formally carried out. Table 10 compares the village with the worst election with the one with the best election according to our MCA results. We can see the general sense about good elections applies here. Our MCA measure differs a lot across provinces. Table 11 shows the average score of each province. The elections in Jilin are the cleanest, and those in Hebei are the most problematic. Regressions of the score on provincial and county dummies show that 44% of the variation comes from between-province difference while 28% of the variation is within-county.

6 Empirical Results

Firstly, we try regressions without controlling any village or incumbent fixed unobserved heterogeneity. The results are reported in the first five columns of Table 12. A number of observed village and incumbent attributes are controlled in these regressions. The first four column are from OLS regressions, and the fifth is from Probit

regression. The first regression includes only the control variables, and the reform related variables are added to the regression step by step in the following ones. None of them shows any significant effect of the reform on re-election probability. When this first order effect does not exist, there is nothing to be amplified or mitigated by better elections or more local non-tax resources thus the estimates of the coefficients on the interactions are insignificant as well. The overall R-Square is slightly above 20%.

The theoretical model captures only the discipline effect of elections, but it's reasonable to believe elections also have selection effect: the villagers not only use future voting to constrain the behavior of incumbents, they also use voting to put more capable candidates into office. One problem researchers have to confront is that we do not observe as much of the candidates' attributes as the villagers do. Suppose the villagers award a certain kind of attribute which is not reflected in the questionnaire, then incumbents running for the most recent elections generally have more of this attributes than those running in the second most recent ones because they were just "selected" against their predecessors. This consideration justifies the control of incumbents fixed effects. However, as mentioned in our discussion of the econometric model, simply restricting the regression sample to incumbents running in both elections is problematic because of the correlation between the reform indicator and individual*time shocks. The Difference in Difference methodology adopted here takes care of this problem. The sixth to ninth columns of Table 12 report the results from the incumbents fixed effects regressions. All these are linear probability models. Firstly, notice that the within group R-Square increases from 36% to 49% with the introduction of the reform related variables. The signs of the reform effect are consistently negative across the regressions, suggesting a dominating decrease of inside rents after the reform. The estimates of the coefficients of the interaction between the reform and election quality are negative, consistent with the amplification prediction of the model; those for the interaction between the reform and cultivated land and upper governments transfers are positive, consistent with the mitigation prediction of the model. The interaction of the reform and number of collective or contract firms in the village has a negative coefficient estimate, which suggests that the number of collective and contract firms in a village may not be just a measure of local non-tax resources. We can imagine villages with more economic opportunities are more likely to have collective or contract firms, and assume that village leaders also have better outside choices where

there are more economic opportunities, then the number of collective and contract firms is also a measure of the opportunity cost of being village leader. As the overall rents decrease after the reform, village leaders with higher opportunity cost are more likely to leave the office and pursue alternative careers.

Even though the signs are consistent with the theoretical predictions, the significance of the estimates is not satisfactory. In order to improve the estimation efficiency, we utilize information on public project investment financed by the villages. This is a variable at the discretion of the incumbent and thus simultaneously determined with his decision on whether to behave well and get re-elected or grab the maximum rents and risk to be ousted. This relationship justifies estimating the re-election function and village investment function together with SUR method to improve efficiency. There are a lot of anecdotes about how village leaders contract public projects to their relatives and extract rents, so it's appealing to consider investment financed by village as a measure of the theoretical t, a summation of true cost of projects and rents extracted by village leaders. The model doesn't give specific predictions on how the reform would affect this t, so the utilization of this variable here is purely for improving estimation efficiency. The last two columns of Table 12 show the results from SUR. All the reform related parameters in the re-election equation become significant with the variance adjustment. Comparison between the magnitude and sign of the estimates in this final specification and those in the benchmark regressions confirms our earlier concerns about correlation between the reform dummy and unobserved incumbents' heterogeneity and justifies the necessity of controlling incumbents' fixed effects.

The effect is quantitatively strong as suggested by the magnitude of the coefficient on $RFLaterE$. To get a sense of the overall effect of the fiscal reform, imagine a village with median election quality, 340 acres of cultivated land and 100,000 Yuan annual transfers for public investment from upper governments.[2] The above estimates indicate that the incumbent is about 11% less likely to stay in office for another term when the reform happens. Improvement of election quality to the fourth quintile will further reduce the probability by 7% to 18%; while deterioration of election quality to the sixth quintile will cut the effect to 7%. One half standard deviation increase

[2]Ignore the effect of collective or contract firms here since most of the villages don't have any and more importantly, how the number of collective or contract firms in a village affects the re-election incentive in the context of the fiscal reform is still unclear from our empirical analysis.

(185 acres in 2002) in cultivated land can mitigate the effect of the reform to 3%. Doubling transfers from upper governments to 200,000 Yuan can only mitigate the effect by less than 1%.

7 Conclusion

This paper looks at the political equilibrium in China's villages in the context of the recent fiscal reform. The reform was carried out with the central government's intention to reduce rural household's burden by tightening the grabbing hands of village leaders and improve village governance. The actual effects of the reform turn out to be two-sided. Tightening the grabbing hands on one side, the reform also makes the financing for public expenditure more costly, thus reduces inside rents and incumbents' incentives for re-election. In other words, the reform strengthens and weakens the discipline effect of the election mechanism at the same time, and which one dominates is an empirical question. The empirical results show a significant net negative effect of the reform. Given that lower re-election rates are also a reflection of short run behavior of the village leaders, it's possible that welfare of the villages has decreased after the reform, in other words, even though the village leaders can grab less, they are more likely to grab. The empirical results also show that this net effect is significantly amplified by cleaner elections and mitigated by abundance of local non-tax revenue.

Both the implementation of village leader elections and the fiscal reform were out of the central government's intention to improve village governance, but ironically, this paper shows the possibility that they may work against each other in serving their ex ante common purpose. This leads us to think about what should be the more effective way of improving China's village governance and further, what kind of contraints make the central government choose fiscal centralization over other alternatives, such as improving election quality and thus strengthening the discipline effect of the existing election mechanism, as the solution to the tension prevailing between villagers and local cadres. Is this because election quality is just out of control of the central government? A related interesting question is how election quality is determined. Our measure of election quality shows that 28% of the variation is within county.

If election differs within counties, it's very likely to be endogenous to other local attributes, which calls for caution when trying to claim causality relationship between implementation of election and other economic or social phenomena in rural China.

One caveat of this paper, as mentioned at the beginning, is that only two agents in the village governance system are covered and all the interactions with other agents are ignored. Another caveat is that the empirical work is focused on the the interaction between the fiscal reform and the discipline effect of election by checking whether the incumbents become more opportunistic after the reform and does not provide much insight into the interaction with the selection effect of election, namely, how the reform may have affected the pool of politicians. More research still needs to be done to achieve better understanding of rural China's political equilibrium.

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lTable 1: Summary of village attributes: 1997 and 2002

	1997		2002	
	mean	sd.	mean	sd.
Number of Household	374	221	381	224
Prop. of hh doing only agr.	59%	29%	47%	30%
Prop. of hh doing no agr.	8%	14%	10%	14%
Prop. of hh running family business	7%	32%	6%	10%
Population	1386	799	1381	791
Labor	674	388	682	385
Prop. of locally employed labor	8%	13%	8%	11%
Prop. of labor commuting between the village and working place	8%	9%	10%	11%
Prop. of labor employed and living outside of the village	14%	16%	24%	26%
Prop. of illiterate labor	15%	37%	10%	17%
Per capita Income (in 1997 Yuan)	1577	833.	2158	1206
Cultivated Land (acre)	407	329	341	370
Prop. of contract land	23%	41%	23%	41%
Prop. of responsibility land	78%	41%	78%	41%
Number of village with firms	42		46	
Number of village with collective or contract firms	22		18	

Table 2: Summary of incumbent attributes: before and after the fiscal reform

	Before the Reform	After the Reform
Number of Obs.	103	69
Mean of age in the election year	45 (sd. 8.05)	48 (sd. 7.66)
Mean of years of education obtained	9 (sd. 2.40)	9 (sd. 2.95)
Prop. of incb. who are also party members	77%	77%
Prop. of incb. who were employed outside the village	13%	20%
Prop. of incb. related to large families	44%	51%
How become the VL		
Prop. of directly elected	43%	52%
Prop. of elected by the party branch	4%	4%
Prop. of appointed by upper governments	38%	33%
Prop. of others	15%	10%
Relative income before being VL		
Prop. of far above village average	11%	13%
Prop. of above village average	38%	43%
Prop. of village average	44%	38%
Prop. of below village average	6%	6%
Prop. of far below village average	2%	0%

Table 3: Re-election outcomes

	Before the Reform			After the Reform		
	# win	# lose	Likelihood of Winning	# win	# lose	Likelihood of Winning
Jiangsu	10	7	59%	14	5	74%
Sichuan	18	5	78%	11	5	69%
Jilin	7	7	50%	13	11	54%
Shaanxi	23	11	68%	0	0	/
Hebei	5	7	42%	4	9	31%

Table 4: Timing of the fiscal reform and elections

		1998	1999	2000	2001	2002	2003	2004
# of villages with the fiscal reform in the year	Jiangsu	0	0	1	15	4	0	0
	Suchuan	0	0	0	1	13	3	3
	Shaanxi	0	0	0	0	2	18	0
	Jilin	1	0	0	1	12	7	0
	Hebei	0	0	1	2	12	5	0
# of villages with elections in the year	Jiangsu	/	0	0	19	1	0	20
	Suchuan	/	0	0	17	3	3	14
	Shaanxi	/	18	0	1	18	1	0
	Jilin	/	0	1	20	0	0	21
	Hebei	/	3	6	1	2	15	1

Table 5: Distribution of the number of projects between 1997 and 2004

# of projects	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
# of villages	3	3	5	11	12	11	16	11	6	14	2	3	2	1	1
% of villages	3%	3%	5%	11%	12%	11%	16%	11%	6%	14%	2%	3%	2%	1%	1%

Table 6: Distribution of starting years of the projects during 1997 and 2004

Year Begin	# of projects	% of projects
1997	9	1.00%
1998	136	15.06%
1999	84	9.30%
2000	73	8.08%
2001	79	8.75%
2002	112	12.40%
2003	247	27.35%
2004	160	17.72%
2005	3	0.33%

Table 7: Number of projects with financial support from upper governments and village average investment from upper governments

Year	# of proj. with financial support from upper gov.	village average inv. from upper gov. (10,000 Yuan)	# of proj. with financial support from upper gov.	village average inv. from upper gov. (10,000 Yuan)	# of proj. with financial support from upper gov.	village average inv. from upper gov. (10,000 Yuan)
	All 6 Prov.		Hebei		Jiangsu	
1998	55	6.76	9	5.34	10	6.55
1999	39	5.34	2	0.59	9	1.19
2000	29	6.03	6	1	5	4.05
2001	21	2.44	3	3.17	2	2.15
2002	49	3.45	8	2.44	8	3.98
2003	101	14.25	7	5.25	14	13.69
2004	74	13.01	16	2.4	13	35.43
	Jilin		Shaanxi		Sichuan	
1998	6	2.53	15	10.84	15	8.77
1999	1	0.46	14	18.67	13	6.04
2000	0	0	10	3.34	8	22.08
2001	0	0	7	2.51	9	4.48
2002	16	7.43	7	0.89	10	2.3
2003	19	11.44	30	15.65	31	25.36
2004	7	3.33	25	18.68	13	5.67

Table 8: Correlation between election protocols

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																			
0. No 1.Yes																			
2	0.2871																		
0. PS or Above 1. Others	*0.0056*																		
3	0.2522																		
0. No 1.Yes	*0.0135*																		
4		0.2212	0.3042																
0.No 1. Yes		*0.0302*	*0.0025*																
5		0.2995	0.2746																
1. No 2. Partly 3 yes		*0.0123*	*0.0222*																
6			-0.4796	-0.2992	0.6809														
scale 0-5, 5 most important			*0. 0001*	*0. 0026*	*0. 0001*														
7				0.2189	0.2661	0.3598													
0. No 1. Yes				*0.0294*	*0.0280*	*0. 0002*													
8			0.2121			-0.2697	0.4330												
0. Not widely used 1. Widely used			*0.0330*			*0. 0064*	*0.0000*												
9	-0.2194						0.2871	−0. 4414											
continuous 0-100%	*0. 0356*						*0. 0044*	*0. 0001*											
10							-0.2832	0. 4615											
continuous 0-100%							*0. 0052*	*0. 0001*											
11			0.2694		0.2870	0.3197													
1. Nobody or FM only 0. Others			*0.0068*		*0.0156*	*0. 0011*													
12	0.2165																		
0. No 1. Yes	*0.0460*																		
13					0.2235		0.4272	0.3375		-0.2350		0.3555							
1.Badly 2. So so 3,Strictly					*0.0424*		*0.0001*	*0.0036*		*0. 0226*		*0.0034*							
14			0.2027		0.4299	0.3676		0.3038		−0. 2692	0.3096		0.2589						
1. Fixed only 0. Others			*0.0416*		*0.0001*	*0. 0002*		*0.0023*		*0. 0080*	*0.0019*		*0.0362*						
15						0.3610	0.2976			−0. 2854	0.2609		0.3089	0.3138					
1.No Secret Ballot 2. SB, weak imp. 3. SB, strict imp.						*0. 0003*	*0.0142*			*0. 0061*	*0.0382*		*0.0013*	*0.0088*					
16			0.2486		0.2734	0.4029	0.6171	0.6040	0.3760	−0. 3880			0.3961	0.3535	0.3803				
0.No 1. Yes			*0.0129*		*0.0238*	*0. 0001*	*0.0000*	*0.0000*	*3.9549*	*0. 0001*			*0.0005*	*0.0004*	*0.0010*				
17			0.1976	0.2451	0.3226	0.4151		0.2679	0.2495				0.3440	0.3589	0.5005	0.3246			
0.No 1. Yes			*0.0471*	*0.0147*	*0.0052*	*0. 0001*		*0.0071*	*2.5108*				*0.0029*	*0.0003*	*0.0000*	*0.0012*			
18				0.2327	0.3412	0.4060		0.3206	0.2955			0.2601	0.4129	0.3914	0.4783	0.2862	0.6804		
0.No 1. Yes				*0.0206*	*0.0028*	*0. 0001*		*0.0013*	*3.0153*			*0.0136*	*0.0002*	*0.0001*	*0.0000*	*0.0042*	*0.0000*		
19			0.3322	0.2767	0.3632	0.4376	0.3002			-0.2495	0.2819	0.2662	0.2677			0.3777	0.3116		
1. Not transpt. 2. So so 3. Transpt.			*0.0038*	*0.0226*	*0.0000*	*0. 0001*	*0.0106*			*0. 0142*	*0.0181*	*0.0413*	*0.0067*			*0.0008*	*0.0074*		

*Association between any two nominal variables is measured by Cramer's phi; correlation between a nominal variable and a quantitative variable is measured by point biserial correlation coefficient; correlation between any two quantitative variables is measured by Pearson's product moment correlation coefficient. Only coefficients significant at 5% level are shown in this table, the p-values are provided under the coefficients.

**The election protocols we select are: (1)whether there is a villagers meeting before the election to introduce the procedure, (2)whether Party Secretary or officials from upper governments are in charge of the election committee, (3)whether the upper governments have influence on the nomination of candidates, (4)whether the final list of candidates needs to be approved by the upper government, (5)villages' evaluation of the pool of candidates, (6)whether villagers play an important role in the nomination process, (7)whether villagers fill the ballots by themselves, (8)whether absentee balloting by family members is widely used, (9)the proportion of women voters voting by themselves, (10)the proportion of absentee votes, (11)the restrictions on who can proxy, (12)whether the preference of the absentee is reflected, (13)whether the absentee balloting rules are strictly followed, (14)whether fixed or floating ballots have been used, (15)whether there is secret ballot rule and whether it's strictly carried out, (16)whether the voting is formally carried out, (17)whether the candidates give addresses and (18)make

Table 9: MCA results: first dimension

		Mass	Overall quality	%inertia	coordinates	sqcorr	contribution
1							
	No	0.031	0.12	0.005	0.094	0.038	0
	Yes	0.022	0.12	0.007	-0.133	0.038	0
2							
	PS or Above	0.044	0.402	0.003	0.103	0.093	0
	Others	0.008	0.402	0.018	-0.537	0.093	0.002
3							
	No	0.025	0.823	0.029	1.14	0.755	0.032
	yes	0.028	0.823	0.026	-1.016	0.755	0.029
4							
	No	0.034	0.747	0.008	0.521	0.739	0.009
	Yes	0.019	0.747	0.015	-0.942	0.739	0.017
5							
	No	0.018	0.783	0.026	1.156	0.632	0.024
	Partly	0.004	0.277	0.015	0.849	0.14	0.003
	Yes	0.03	0.757	0.019	-0.812	0.705	0.02
6							
	0	0.001	0.206	0.008	1.532	0.115	0.001
	1	0.015	0.855	0.045	1.936	0.815	0.054
	2	0.008	0.418	0.007	0.641	0.325	0.003
	3	0.01	0.389	0.015	-0.832	0.322	0.007
	4	0.014	0.663	0.028	-1.25	0.532	0.022
	5	0.005	0.55	0.017	-1.494	0.492	0.012
7							
	No	0.042	0.847	0.011	0.549	0.807	0.013
	Yes	0.011	0.847	0.04	-2.104	0.807	0.048
8							
	Not widely used	0.029	0.844	0.028	1.08	0.812	0.034
	Widely used	0.024	0.844	0.035	-1.329	0.812	0.042
9							
	<25%	0.008	0.519	0.011	0.872	0.372	0.006
	25%~50%	0.018	0.444	0.009	0.51	0.354	0.005
	50%~75%	0.015	0.181	0.008	-0.294	0.105	0.001
	>75%	0.012	0.643	0.013	-0.939	0.538	0.011

		Mass	Overall quality	%inertia	coordinates	sqcorr	contribution
10							
	50%~75%	0.001	0.026	0.008	0.721	0.026	0
	25%~50%	0.011	0.841	0.034	1.982	0.839	0.043
	<25%	0.041	0.834	0.01	-0.535	0.833	0.012
11							
	Nobody or FM only	0.013	0.636	0.018	1.127	0.615	0.016
	Others	0.04	0.636	0.006	-0.359	0.615	0.005
12							
	No	0.033	0.616	0.01	0.482	0.519	0.008
	Yes	0.019	0.616	0.017	-0.828	0.519	0.013
13							
	Badly	0.031	0.863	0.017	0.831	0.83	0.021
	So so	0.438	0.008	-0.558	0.395	0.005	-0.633
	Strictly	0.007	0.815	0.042	-2.417	0.681	0.042
14							
	Fixed only	0.021	0.787	0.033	1.33	0.752	0.036
	Others	0.032	0.787	0.021	-0.853	0.752	0.023
15							
	No stb.	0.034	0.827	0.017	0.757	0.797	0.02
	Stb, weak imp.	0.007	0.515	0.01	-0.245	0.027	0
	Stb, strict imp.	0.011	0.859	0.041	-2.129	0.854	0.052
16							
	No	0.038	0.858	0.022	0.857	0.838	0.028
	Yes	0.015	0.858	0.055	-2.124	0.838	0.068
17							
	No	0.033	0.803	0.027	0.989	0.8	0.032
	Yes	0.02	0.803	0.044	-1.618	0.8	0.052
18							
	No	0.039	0.817	0.015	0.696	0.817	0.019
	Yes	0.014	0.817	0.043	-1.936	0.817	0.052
19							
	Not transpt.	0.012	0.816	0.03	1.675	0.766	0.034
	So so	0.012	0.136	0.009	0.3	0.082	0.001
	Transpt.	0.028	0.819	0.017	-0.841	0.811	0.02

Notes: Refer to the notes of Table 8 for description of the 19 election quality related categorical variables.

Table 10: Election protocols of villages with the highest and lowest MCA score of election quality

The Best	The Worst
Villagers meeting held before the election to give instructions on election procedure	No villagers meeting held to give instructions on election procedure
PS or officials from upper gov. in charge of election committee	PS or officials from upper gov. in charge of election committee
No influence on nomination process from upper gov.	Upper gov. influence nomination process
Candidates list doesn't need to be approved by upper gov.	Missing information on whether candidates list needs to be approved by upper gov.
Candidates are representative of villagers' preference	Candidates don't represent villagers' preference
Evaluation of villagers importance in nomination process: 4	Evaluation of villagers importance in nomination process: 1
Villagers all fill the ballots by themselves	Villagers don't fill the ballots by themselves
Filling ballots for family members is not common	Filling ballots for family members is common
50%~75% of the women voters vote by themselves	Less than 25% of the women voters vote by themselves
Less than 25% of the ballots are absentee ballots	Missing information on the proportion of absentee ballots
Absentees can't vote or only family members can vote on behalf of them	People other than family members can vote on behalf of absentees
Ask the absentees before filling their ballots	Missing information on whether asking the absentees before filling the ballots on their behalf
Rules about absentee balloting are strictly implemented	Rules about absentee balloting are not strictly implemented
Fixed ballot boxes only	Both fixed and floating ballot boxes are used
Secret ballot and the rule is strictly implemented	No secret ballot
Voting is formal	Voting is not formal
Address given	No address given
Commitment made	No commitment made
Counting process is transparent	Counting process is not transparent

Table 11: Provincial summaries of the MCA score of election quality

	Mean	Std.	Min	Max
Jiangsu	-0.23	0.72	-1.37	1.09
Sichuan	-0.33	0.73	-1.65	0.90
Shaanxi	-0.02	0.89	-1.26	1.86
Jinlin	1.11	0.65	-0.20	2.14
Hebei	-0.93	0.88	-1.80	1.67

Table 12: Regression Results

Dependant variable:	Benchmark Regressions					Incumbents Fixed Effects				SUR	
1~10: re-election outcome	1	2	3	4	5	6	7	8	9	10	11
11: investment in public projects financed by the village	OLS_No	OLS_Ref	OLS_Ref&EQ	OLS_Ref&EQ &Res	Probit_Ref &EQ&Res	Incb_Ref	Incb_Ref&E Q	Incb_Ref&E Q&Res	Incb_Ref&E Q&Res	Incb_Ref&E Q&Res	Vil.Inv_Re f&EQ&Res
Dummy 1: Most Recent * After Reform		-0.0829	-0.0873	0.4763	0.6451		-0.0571	-0.1772	-1.6183	-1.6183**	-16.3974
		[0.39]	[0.41]	[0.70]	[0.99]		[0.17]	[0.53]	[1.40]	[2.71]	[0.69]
Election Quality * Dummy 1			-0.0257	-0.004	-0.0168			-0.1751	-0.1751	-0.1751**	1.226
			[0.28]	[0.04]	[0.16]			[1.40]	[1.39]	[2.68]	[0.47]
Cultivated Land * Dummy 1				-0.0661	-0.1127				0.189	0.1890*	1.8358
				[0.77]	[1.09]				[1.31]	[2.53]	[0.62]
Contr./Col Firms * Dummy 1				-0.1444	-0.1982				-0.382	-0.3820**	11.9094*
				[0.74]	[0.87]				[1.38]	[2.66]	[2.08]
Transfers * Dummy 1				0.0048	0.0054				0.0123	0.0123*	-0.2597
				[0.90]	[0.93]				[1.07]	[2.07]	[1.09]
Dummy 2: Most Recent	-0.2529	-0.2506	-0.2573	-0.2319	-0.2876	-0.1615	-0.1303	-0.1638	-0.0758	-0.0758	-5.191
	[1.09]	[1.07]	[1.09]	[0.98]	[1.01]	[0.68]	[0.43]	[0.55]	[0.25]	[0.49]	[0.83]
Village Characteristics											
Election Quality	-0.1012*	-0.1042*	-0.094	-0.0955	-0.1202+						
	[2.22]	[2.24]	[1.60]	[1.60]	[1.79]						
Cultivated Land	0.0089	0.0088	0.0092	0.0093	0.0218	-0.0735	-0.0526	0.1524	0.158	0.158	12.7696
	[1.02]	[1.00]	[1.03]	[1.04]	[1.30]	[0.21]	[0.14]	[0.38]	[0.39]	[0.76]	[1.54]
Contr./Col Firms	0.0869	0.0895	0.0906	0.1317	0.1485	-0.3995	-0.3958	-0.2136	-0.3951	-0.3951	15.4554
	[0.91]	[0.93]	[0.94]	[1.09]	[1.13]	[0.95]	[0.92]	[0.48]	[0.79]	[1.52]	[1.49]
Transfers from upper gov.	0.0038	0.0039	0.004	0.0024	0.0037	0.006	0.0059	0.0078+	0.0041	0.0041	0.7687**
	[1.50]	[1.51]	[1.53]	[0.75]	[1.01]	[1.45]	[1.40]	[1.79]	[0.76]	[1.47]	[6.85]
Population	-0.0004+	-0.0004+	-0.0004+	-0.0003+	-0.0004+	0.0046	0.0047	0.0057+	0.0044	0.0044*	0.0968
	[1.84]	[1.82]	[1.83]	[1.67]	[1.75]	[1.43]	[1.42]	[1.71]	[1.29]	[2.49]	[1.38]
Population Squared	0.0000+	0.0000+	0.0000+	0.0000+	0.0000+	0	0	0	0	0	0
	[1.86]	[1.84]	[1.86]	[1.73]	[1.85]	[1.09]	[1.08]	[1.41]	[0.75]	[1.45]	[0.90]
Per Capita Income	0.0001	0.0001	0.0001	0.0001	0	0.0004	0.0004	0.0003	-0.0001	-0.0001	0.0420**
	[0.56]	[0.47]	[0.45]	[0.28]	[0.19]	[0.66]	[0.53]	[0.39]	[0.19]	[0.37]	[2.83]
Per Capita Income Squared	0	0	0	0	0	0	0	0	0	0	-0.0000*
	[0.57]	[0.48]	[0.48]	[0.26]	[0.16]	[0.15]	[0.07]	[0.09]	[0.78]	[1.51]	[2.22]
Additional village attributes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incumbents attributes	Yes	Yes	Yes	Yes	Yes		Fixed Effects			Dummies	
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	172	172	172	172	172	86	86	86	86	86	86
R-squared	0.24	0.24	0.24	0.25	0.23	0.41	0.41	0.45	0.52	0.73	0.8
Number of vlid						43	43	43	43		

Additional village attributes: proportion of illiterate population, proportion of emmigrant labor
Incumbents attributes: age in the election year, education, party membership, whether related to large families in the village, relative income before becoming village leader, how become village leader
+ significant at 10%; * significant at 5%; ** significant at 1%

Appendix: Effects of the fiscal reform and its interaction with election quality and local non-tax resources on the observed attributes of the winners and losers in the elections

Dependant variable	Age		Education		Mili. Serv.		Emp. BF		Fami. Busi		Fami. Name	
	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser
Dummy 1: Most Recent * After Reform	10.217	14.53	-5.808	-1.988	-0.053	0.812	0.749	-0.489	-0.283	0.337	0.83	1.685
	-1.14	-1.48	-1.83	-0.59	-0.11	-1.65	-1.5	-1	-0.48	-0.63	-1.32	(2.73)**
Dummy 2: Most Recent	3.33	2.159	-0.271	-0.438	-0.076	-0.014	-0.01	0.05	-0.157	0.111	-0.034	-0.176
	(2.03)*	-1.21	-0.46	-0.69	-0.9	-0.16	-0.11	-0.56	-1.45	-1.13	-0.29	-1.56
Election Quality * Dummy 1	0.377	0.609	0.243	-0.165	-0.128	-0.012	-0.175	-0.129	-0.058	0.008	-0.046	0.128
	-0.33	-0.49	-0.59	-0.38	(2.20)*	-0.2	(2.80)**	(2.10)*	-0.78	-0.11	-0.58	-1.65
Cultivated Land * Dummy 1	-1.332	-2.29	0.758	0.302	0.001	-0.082	-0.069	0.053	0.054	-0.031	-0.093	-0.186
	-1.15	-1.82	-1.86	-0.69	-0.02	-1.29	-1.07	-0.85	-0.71	-0.45	-1.15	(2.35)*
Contr./Col Firms * Dummy 1	-1.794	-1.99	-0.133	1.013	0.132	-0.357	-0.081	0.1	0.111	-0.085	-0.202	0.117
	-0.7	-0.71	-0.14	-1.01	-0.98	(2.53)*	-0.56	-0.71	-0.65	-0.55	-1.11	-0.66
Election Quality	-0.385	-0.599	0.285	0.415	0.04	-0.019	0.059	0.022	-0.012	0.043	0.037	-0.087
	-0.52	-0.74	-1.07	-1.46	-1.05	-0.49	-1.45	-0.55	-0.24	-0.98	-0.73	-1.72
Cultivated Land	0.005	0.12	0.031	-0.012	0.005	0.002	0.004	0.002	0.005	0.005	-0.013	-0.008
	-0.05	-0.94	-0.74	-0.28	-0.75	-0.38	-0.61	-0.36	-0.69	-0.64	-1.62	-1
Contr./Col Firms	2.068	-1.612	0.143	0.771	0.026	0.134	0.074	0.132	-0.176	0.041	0.049	-0.141
	-1.28	-0.91	-0.25	-1.24	-0.31	-1.51	-0.82	-1.5	-1.65	-0.42	-0.43	-1.26
Population	-0.002	0.002	0.002	0.002	0	0	0	0	0	0	0	0
	-0.57	-0.67	-1.95	-1.71	-0.86	-0.07	-1.39	(2.91)**	(2.08)*	-1.03	-1.86	-0.17
Population Squared	0	0	0	0	0	0	0	0	0	0	0	0
	-0.56	-0.72	(2.00)*	-0.8	-0.85	-0.15	-1.39	(2.77)**	(2.54)*	-0.78	-1.89	-0.2
Per Capita Income	0.005	0.005	0	0	0	0	0	0	0	0	0	0
	(2.29)*	(2.00)*	0	-0.07	-0.56	-1.64	-0.74	-0.8	-0.2	-0.07	-0.8	-0.13
Per Capita Income Squared	0	0	0	0	0	0	0	0	0	0	0	0
	(2.00)*	-1.28	-0.62	-0.17	-0.3	-1.73	-0.98	-0.38	-0.56	-0.02	-0.56	-0.12
Prop. of Emmigrant Labor	-0.566	8.388	1.119	0.923	0.118	0.172	0.458	0.209	0.373	-0.004	0.322	0.09
	-0.22	(2.99)**	-1.22	-0.94	-0.88	-1.22	(3.20)**	-1.49	(2.19)*	-0.03	-1.78	-0.51
Prop. of Illiterate Pop.	-1.287	-3.583	-1.554	0.503	-0.051	-0.098	-0.081	-0.062	0.075	-0.026	0.251	-0.106
	-0.72	-1.85	(2.47)*	-0.75	-0.56	-1.01	-0.83	-0.64	-0.64	-0.25	(2.02)*	-0.87
Constant	38.296	35.102	7.477	6.486	-0.024	-0.052	0.117	0.296	0.498	0.249	0.539	0.452
	(13.27)**	(11.17)**	(7.00)**	(5.67)**	-0.16	-0.34	-0.75	-1.94	(2.69)**	-1.48	(2.74)**	(2.34)*
Observations	164	164	164	164	168	168	168	168	168	168	168	168

*Age and education are continuous variables; Mili. Serve. Is a dummy variable indicating whether the the winner/loser has ever served in the army; Emp. BF is a dummy indicating whether the the winner/loser has ever been employed; Fami. Busi. Is a dummy indicating whether the the winner/loser has ever run any family business; Fami. Name is a dummy indicating whether the the winner/loser is related with larger families in the village.

Dependant variable:	Source of Income BF											
Dummies indicating whether the column item is the main source of the winner's/loser's income before the election	Cadre Salary		Agr. Inc.		Fami. Member		Fami. Busi.		Emp. Wage		Other	
	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser
Dummy 1: Most Recent * After Reform	-0.139	0.152	-0.566	-0.342	0.043	-0.135	-0.161	-0.039	0.54	0.193	0.282	-0.034
	-0.64	-0.72	-0.91	-0.61	-0.14	-0.43	-0.31	-0.1	-1.76	-0.61	-1.09	-0.34
Dummy 2: Most Recent	-0.01	0.1	0.074	-0.131	0.015	0.141	-0.096	0.007	0.02	-0.033	-0.003	-0.003
	-0.26	(2.59)**	-0.64	-1.28	-0.28	(2.45)*	-1	-0.1	-0.36	-0.57	-0.06	-0.17
Election Quality * Dummy 1	-0.047	0.02	-0.013	0.012	0.025	-0.015	-0.025	0.045	0.018	-0.001	0.042	-0.002
	-1.71	-0.76	-0.16	-0.17	-0.65	-0.38	-0.38	-0.89	-0.47	-0.01	-1.29	-0.17
Cultivated Land * Dummy 1	0.017	-0.031	0.065	0.051	-0.01	-0.004	0.034	0.017	-0.068	-0.026	-0.038	0.008
	-0.63	-1.13	-0.8	-0.7	-0.25	-0.1	-0.51	-0.32	-1.73	-0.64	-1.15	-0.65
Contr./Col Firms * Dummy 1	0.172	0.041	-0.106	-0.138	-0.102	-0.005	0.056	-0.057	-0.037	0.163	0.016	-0.012
	(2.75)**	-0.67	-0.59	-0.85	-1.18	-0.06	-0.37	-0.49	-0.42	-1.77	-0.22	-0.41
Election Quality	0.015	0.008	0.025	-0.009	-0.014	-0.006	-0.01	0.017	0.022	-0.04	-0.039	-0.004
	-0.84	-0.44	-0.5	-0.2	-0.57	-0.23	-0.23	-0.5	-0.88	-1.54	-1.83	-0.43
Cultivated Land	0.002	0.002	0.008	-0.004	-0.001	0.001	-0.011	0.002	0.002	0	0	0
	-0.64	-0.66	-0.92	-0.59	-0.32	-0.19	-1.55	-0.38	-0.55	-0.03	-0.09	-0.04
Contr./Col Firms	-0.034	0.02	0.066	-0.148	0.042	0.019	-0.087	0.083	-0.009	0.009	0.022	-0.003
	-0.86	-0.53	-0.58	-1.46	-0.76	-0.33	-0.92	-1.13	-0.15	-0.15	-0.47	-0.18
Population	0	0	0	0	0	0	0	0	0	0	0	0
	-0.23	-1.35	-1.82	-0.01	(2.27)*	-1.3	(2.18)*	-0.42	-0.54	(2.28)*	-1.81	-1.51
Population Squared	0	0	0	0	0	0	0	0	0	0	0	0
	-0.18	(1.99)*	(2.15)*	-0.08	-1.51	-1.76	(2.75)**	-0.19	-0.29	(2.28)*	-1.62	-1.29
Per Capita Income	0	0	0	0	0	0	0	0	0	0	0	0
	-1.76	(2.46)*	-0.05	-0.19	-0.53	-0.98	-1.09	-0.26	-0.65	-0.16	-0.78	-1.86
Per Capita Income Squared	0	0	0	0	0	0	0	0	0	0	0	0
	(2.01)*	(2.57)*	-0.49	-0.26	-0.1	-0.43	-1.63	-0.35	-0.61	-0.7	-0.43	-1.32
Prop. of Emmigrant Labor	-0.022	-0.139	-0.178	0.117	0.136	-0.034	0.099	0.2	0.073	0.007	-0.107	-0.025
	-0.35	(2.28)*	-0.99	-0.73	-1.57	-0.38	-0.66	-1.72	-0.82	-0.08	-1.45	-0.86
Prop. of Illiterate Pop.	-0.014	0.022	0.187	0.005	-0.023	-0.019	-0.064	-0.006	-0.031	0.024	-0.054	-0.016
	-0.33	-0.53	-1.51	-0.05	-0.39	-0.3	-0.62	-0.07	-0.51	-0.39	-1.06	-0.8
Constant	-0.065	-0.069	0.361	0.933	0.184	0.006	0.58	0.112	-0.079	-0.113	0.02	0.02
	-0.96	-1.04	-1.84	(5.31)**	-1.96	-0.06	(3.54)**	-0.88	-0.83	-1.13	-0.25	-0.64
Observations	168	168	168	168	168	168	168	168	168	168	168	168

Dependant variable:	Occupation BF													
Dummies indicating whether the column item is the winner's/loser's occupation before the election	Local Agr.		Unskilled Non-Agr.		Skilled Non-Agr.		Employee		Village Cadre		Fami. Busi.		County/Town Cadre	
	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser	winner	Loser
Dummy 1: Most Recent * After Reform	-0.842	0.066	-0.063	-0.225	0.159	0.229	-0.038	0.088	-0.338	0.075	0.263	0.003	0.168	-0.119
	-1.37	-0.11	-0.37	-0.87	-0.45	-0.91	-0.38	-0.28	-0.82	-0.19	-0.49	-0.01	-0.87	-0.85
Dummy 2: Most Recent	0.187	0.041	-0.007	-0.044	-0.001	-0.014	0.038	-0.07	-0.035	-0.047	-0.149	0.063	-0.031	0.031
	-1.67	-0.38	-0.23	-0.92	-0.02	-0.3	(2.09)*	-1.22	-0.46	-0.65	-1.51	-0.97	-0.87	-1.23
Election Quality * Dummy 1	-0.027	-0.005	-0.014	-0.032	0.048	-0.056	-0.002	0.006	-0.023	0.041	-0.007	0.037	-0.019	-0.004
	-0.35	-0.07	-0.66	-0.97	-1.08	-1.78	-0.13	-0.15	-0.45	-0.83	-0.1	-0.83	-0.8	-0.21
Cultivated Land * Dummy 1	0.084	-0.013	0.011	0.025	-0.019	-0.021	0.002	-0.024	0.044	0.017	-0.016	0.008	-0.019	0.006
	-1.07	-0.17	-0.48	-0.75	-0.43	-0.64	-0.17	-0.6	-0.82	-0.33	-0.23	-0.17	-0.77	-0.35
Contr./Col Firms * Dummy 1	-0.07	-0.316	0.004	0.143	-0.103	0.116	-0.046	0.173	0.11	-0.274	0.069	-0.014	0.097	0.015
	-0.39	-1.88	-0.08	-1.92	-1.01	-1.61	-1.63	-1.91	-0.92	(2.40)*	-0.44	-0.14	-1.74	-0.36
Election Quality	0.017	0.009	-0.007	-0.018	-0.017	-0.008	0.001	-0.008	0.022	0.011	0.015	0.022	-0.006	0.002
	-0.34	-0.19	-0.48	-0.87	-0.58	-0.4	-0.11	-0.3	-0.64	-0.33	-0.34	-0.74	-0.38	-0.16
Cultivated Land	0.004	-0.007	0	0	-0.01	0	-0.001	0.002	0.003	0.002	0.004	0.002	0	0.001
	-0.47	-0.96	-0.12	-0.01	(2.21)*	-0.05	-0.41	-0.54	-0.64	-0.35	-0.51	-0.33	-0.06	-0.69
Contr./Col Firms	0.005	0.068	-0.022	0.038	0.081	-0.016	0.05	-0.118	-0.008	0.049	-0.091	0.024	-0.027	-0.028
	-0.05	-0.64	-0.71	-0.82	-1.27	-0.36	(2.79)**	(2.08)*	-0.1	-0.69	-0.93	-0.37	-0.78	-1.11
Population	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.05	(2.45)*	-0.82	-1	-1.38	-0.56	-0.75	-0.93	-1.2	(2.00)*	-1.64	-0.18	-1.54	-0.21
Population Squared	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.13	(2.44)*	-0.14	-1.45	-1.49	-0.93	-0.63	-0.59	-1.44	(2.14)*	(2.09)*	-0.38	-1.03	-0.58
Per Capita Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.09	-0.88	-0.25	-0.69	-1.69	-0.12	-0.37	-0.09	-1.59	-1.01	-1.4	-0.97	(2.09)*	-1.64
Per Capita Income Squared	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-1.04	-1.45	-0.65	-1.46	-1.49	-0.1	-0.26	-0.1	-0.51	-1.24	-1.67	-1.23	(2.18)*	-1
Prop. of Emmigrant Labor	-0.12	0.112	0.049	0.034	-0.08	-0.082	-0.013	-0.059	-0.07	-0.105	0.358	0.177	-0.074	0.057
	-0.68	-0.67	-1	-0.46	-0.79	-1.14	-0.44	-0.65	-0.59	-0.92	(2.31)*	-1.72	-1.33	-1.42
Prop. of Illiterate Pop.	-0.004	0.166	-0.018	0.001	-0.097	0.011	-0.01	-0.081	-0.011	-0.048	0.171	-0.04	-0.027	-0.008
	-0.03	-1.44	-0.53	-0.02	-1.38	-0.23	-0.5	-1.31	-0.14	-0.61	-1.61	-0.57	-0.72	-0.3
Constant	0.552	0.944	-0.037	0.088	0.219	0.059	0.022	0.071	-0.203	-0.015	0.456	0.096	0.046	-0.056
	(2.88)**	(5.18)**	-0.7	-1.09	(1.99)*	-0.75	-0.71	-0.72	-1.57	-0.12	(2.70)**	-0.86	-0.76	-1.28
Observations	168	168	168	168	168	168	168	168	168	168	168	168	168	168

Dependant variable:	Relative income before the election							
Dummies indicating whether the winner's/loser's income is in the column category	Far Above. Avg.		Above Avg.		Avg.		Below Avg.	
	winner	Loser	winner	Loser	winner	Loser	winner	Loser
Dummy 1: Most Recent * After Reform	0.701	-0.225	-0.146	0.654	-0.248	-0.097	-0.307	0.038
	-1.57	-0.63	-0.23	-1.08	-0.41	-0.15	-1.24	-0.1
Dummy 2: Most Recent	0.039	0.105	-0.133	0.044	0.164	-0.048	-0.07	-0.094
	-0.47	-1.62	-1.13	-0.39	-1.47	-0.41	-1.55	-1.4
Election Quality * Dummy 1	-0.014	-0.077	0.03	0.142	0.044	0.001	-0.061	-0.073
	-0.25	-1.73	-0.38	-1.86	-0.58	-0.01	(1.97)*	-1.6
Cultivated Land * Dummy 1	-0.101	0.026	0.033	-0.093	0.019	0.014	0.049	0.009
	-1.77	-0.58	-0.4	-1.2	-0.24	-0.17	-1.55	-0.2
Contr./Col Firms * Dummy 1	-0.103	-0.251	0.276	0.437	-0.179	-0.155	0.005	-0.096
	-0.8	(2.45)*	-1.5	(2.50)*	-1.01	-0.83	-0.07	-0.91
Election Quality	0.03	0.075	-0.04	-0.054	0.039	0.018	-0.029	-0.014
	-0.82	(2.58)**	-0.76	-1.09	-0.78	-0.34	-1.42	-0.48
Cultivated Land	-0.007	0.005	0.005	0.007	0.002	-0.009	-0.001	-0.001
	-1.17	-0.98	-0.62	-0.85	-0.29	-1.06	-0.18	-0.24
Contr./Col Firms	0.015	0.179	0.085	-0.135	-0.057	-0.063	-0.043	0.006
	-0.19	(2.78)**	-0.73	-1.23	-0.52	-0.54	-0.95	-0.1
Population	0	0	0	0	0	0	0	0
	-0.04	-0.17	-0.89	-0.88	-1.63	-0.33	-1.79	-1.2
Population Squared	0	0	0	0	0	0	0	0
	-0.32	-0.12	-1.11	-0.86	-1.92	-0.06	-1.29	-0.71
Per Capita Income	0	0	0	0	0	0	0	0
	(2.36)*	-1.39	-0.99	-0.38	-0.58	-1.19	-0.28	-0.43
Per Capita Income Squared	0	0	0	0	0	0	0	0
	(2.47)*	-1.07	-1.1	-0.61	-0.64	-1.16	0	-0.33
Prop. of Emmigrant Labor	0.215	0.151	0.055	-0.085	-0.24	-0.012	-0.03	0.062
	-1.68	-1.47	-0.3	-0.49	-1.37	-0.06	-0.42	-0.59
Prop. of Illiterate Pop.	-0.086	0.008	0.23	0.078	-0.122	-0.082	-0.023	-0.024
	-0.97	-0.12	-1.82	-0.65	-1.01	-0.64	-0.48	-0.33
Constant	0.365	0.108	0.349	0.447	0.117	0.361	0.168	0.196
	(2.62)**	-0.97	-1.75	(2.36)*	-0.61	-1.78	(2.18)*	-1.72
Observations	168	168	168	168	168	168	168	168

*All are SUR estimates .