PRO-POOR TARGETING AND ACCOUNTABILITY OF LOCAL GOVERNMENTS IN WEST BENGAL[1]

Pranab Bardhan[2] and Dilip Mookherjee[3]

Preliminary version: December 14, 2003

Abstract

A commonly alleged pitfall of decentralization of service delivery to local governments is that high levels of socio-economic inequality, illiteracy among the poor, and domination by a single party can cause local governments to be captured by local elites, resulting in an erosion of their accountability to the poor. This hypothesis is empirically examined using a longitudinal sample of 89 West Bengal village governments concerning pro-poor targeting of credit, agricultural kits, employment programs and fiscal policy spanning the period 1978-98. We find that intravillage allocations were targeted quite well in favor of the poor on average, with a significant adverse effect of higher land inequality and illiteracy among the poor only in the credit program. In contrast intervillage allocations exhibited a substantially stronger and significant anti-poor bias, with the single exception of the formula-bound employment program. The results suggest that accountability problems stemmed from political discretion used at higher levels concerning intervillage allocation of resources, rather than intravillage elite capture.

[1]We thank the MacArthur Foundation Inequality Network for funding the data collection. Sankar Bhaumik and Sukanta Bhattacharya of the Department of Economics, Calcutta University led the village survey teams that collected the data. Indrajit Mallick helped us obtain the election data. We are grateful to Alfredo Cuecuecha for excellent research assistance. Mookherjee thanks the John Henry Simon Guggenheim Foundation for funding a sabbatical year when much of this research was conducted.

[2]Department of Economics, University of California, Berkeley

[3]Department of Economics, Boston University

1 Introduction

Decentralization of service delivery to local governments has recently been embraced by a large number of developing countries in order to increase responsiveness and accountability to poor and vulnerable groups (see, e.g., the 2004 *World Development Report*). The principal concern with such initiatives is the danger that local governments may be subject to 'capture' by local elites, wherein targeting performance and responsiveness to the needs of the poor and minorities may deteriorate.[4] Dreze and Sen (1989) express this concern as follows:

> "The extent of economic distress experienced by different individuals is, to a great extent, a matter of common knowledge within a given rural community. An apparent solution to the selection problem would take the form of making the selection process rely on local institutions to allocate public support according to individual needs.
>
> Would this method work in practice? The leaders of a village community undoubtedly have a lot of information relevant for appropriate selection. But in addition to the informational issue, there is also the question as to whether the community leaders have strong enough motivation — or incentives — to give adequately preferential treatment to vulnerable groups. Much will undoubtedly depend on the nature and functioning of political institutions at the local level, and in particular on the power that the poor and the deprived have in the rural community. Where the poor are also powerless — as is frequently the case — the reliance on local institutions to allocate relief is problematic, and can end up being at best indiscriminate and at worst blatantly iniquitous, as numerous observers have noted in diverse countries." (Dreze and Sen (1989, p.107))

[4]See Bardhan (1996, 2002), Bardhan and Mookherjee (2000), Bird (1995), Crook and Manor (1998), Dreze and Sen (1989), Lieten (1996), Mathew and Nayak (1996), Mookherjee (2004), Prud'homme (1995), Tanzi (1996), Manor (1999) and the 2004 World Development Report.

These dangers have been emphasized particularly in rural communities characterized by high levels of inequality in land, illiteracy and domination by a single political party. Accordingly, it is widely believed that effective political competition and a reasonable level of asset equality and literacy are necessary preconditions for decentralization to achieve improved accountability.

Most of this discussion has been based, however, on anecdotal accounts and case studies. More systematic evidence based on larger samples are conspicuous by their absence, owing partly to the paucity of available data.[5] The aim of this paper is to examine how pro-poor targeting varied with local inequality, poverty or illiteracy in the context of local governments (*panchayats*) in the state of West Bengal, India. The West Bengal experience with decentralized implementation of development programs is unique insofar as it has spanned over a long enough period (25 years) to allow long run effects of changing patterns of landownership and literacy on targeting to be estimated. Our analysis is based on a longitudinal dataset we have assembled covering 89 villages over the period 1978–98, spanning four successive sets of elected local governments.

The principal responsibilities devolved to the West Bengal panchayats were the selection of beneficiaries of subsidized farm inputs and credit, implementation of land reforms, local infrastructure projects and welfare programs. We exclude an analysis of the land reform program, since this is the topic of a companion paper (Bardhan-Mookherjee (2003)). This paper examines the distribution of credit (under the Integrated Rural Development Program (IRDP)), agricultural minikits (containing seeds, fertilizers and pesticides), employment programs geared towards construction of local infrastructure, and fiscal policies pursued by local governments.

We estimate measures of pro-poor targeting of these programs, both with respect to allocation of allotted resources within villages by village governments (*gram panchayats (GPs)*), and across villages. These are related to changes over time in village demographics, land distribution, literacy and political composition of the local governments, thus controlling

[5]Notable exceptions are Galasso and Ravallion (2001) in the context of an education program in Bangladesh, and Ravallion and van de Walle (2002) for a land redistribution program in Vietnam.

for heterogeneity in unobserved village characteristics. The data does not allow us to compare the performance of the decentralized regime with the centralized distribution system that preceded it (prior to 1977) in West Bengal, or in other Indian states. The principal concern of the paper is thus to explore the evidence regarding correlations of targeting and accountability with local inequality and politics *within* a particular decentralized regime.

Section 2 describes the theoretical model of government accountability underlying the analysis. Implicit weights assigned to different landowning groups by rival political parties are related to local demographics and land distribution, drawing on models of two-party electoral competition with special interest groups or political ideology (Grossman-Helpman (1996, 2001), Bardhan and Mookherjee (2000, 2003)). We discuss problems in empirically inferring these political welfare weights from observed targeting patterns. The problem is especially acute in the context of distribution of productive assets such as farm inputs, since an inegalitarian allocation can be justified by higher productivity of non-poor households in the use of these assets, under suitable assumptions on the curvature of household utility functions. Section 2 discusses possible approaches to dealing with this problem, such as controlling for productivity differences between different landowning classes, evaluating purely distributive programs, and examining how targeting varied with demographic weights of different land classes. Interactions between intervillage and intravillage allocations are also discussed.

Section 3 describes the institutional background to the West Bengal *panchayat* system in operation since 1978, and the nature of the data we use. Section 4 examines allocation of IRDP loans. Section 5 is devoted to allocation of agricultural 'minikits' containing seeds, fertilizers and pesticides to farmers. Section 6 deals with employment schemes. Section 7 examines fiscal performance of village governments, with respect to local revenue collection and proportion of resources spent on salaries and administrative expenses. Finally, Section 8 concludes.

Our principal finding is that intravillage allocations reveal relatively little evidence of local elite capture. Shares of the poor in the allocation of credit or kits were high on average, close to their demographic shares and larger than their land shares. Excepting

the credit program and aspects of fiscal performance, there was little evidence that greater land inequality, illiteracy among the poor, or domination by the Left Front worsened intravillage targeting. On the other hand, intervillage allocations of IRDP credit, kits and fiscal grants exhibited significant antipoor biases. Increases in demographic weight from medium landowning to landless households by 2.5%, in literacy rates among the poor by 12%, or in proportion of minority castes by 5% — orders of magnitude representative of variations observed within the sample — were associated with changes in resource allocation to the village of the order of 75–120%, and intravillage targeting shares by less than 10%. The role of local elites was therefore marked in their ability to attract resources to their respective villages, rather than divert them away from the poor within the village. The weakness of decentralization in West Bengal thus seems to lie in the role of political discretion by higher level governments in allocating developmental resources across villages. That formula-bound intervillage allocations would significantly improve equity is suggested by the fact that the employment programs were subject to less intervillage bias, and also by contrast with the decentralization programs in Bolivia or South Africa.[6]

2 Conceptual Issues

We first explain the model of electoral competition which explains determinants of political welfare weights that define the accountability of local governments. Then we discuss implications for intravillage allocations, the problem of inferring welfare weights from observed allocations, and the inter-relationship of inter and intra-village allocations.

2.1 Political Competition and Government Accountability

We briefly recount the model of electoral competition with probabilistic voting that has been elaborated in more detail in our earlier work.

[6]See, for example, Faguet (2003) and Wittenberg (2003) for an account of how the use of need-based formulae for interregional allocations resulted in significant improvements in equity in the recent decentralization programs in Bolivia and South Africa respectively.

Consider a given village, in which households are partitioned into landowning classes c with demographic weights α_c, and election turnout rates τ_c. There are two parties L and R, each of whom selects a policy π from some given policy space Π. These can represent electoral platforms in advance of an elections if parties can credibly commit to implementing their platforms. Alternatively these may be policies selected by current incumbents, which affect their reelection prospects. Both parties also select election campaign levels M_L, M_R to woo voters. The policy preferences of a class c voter are given by a utility function $U_c(\pi)$, unspecified for now.

A fraction τ_c of class c voters turn out to vote in the election. Of these, a further fraction β_c of these voters are *aware*, while the rest are *impressionable*. Voter awareness β_c is an increasing function of average literacy, economic and social status (measured respectively by factor endowments, factor prices and caste) of class c. Aware voters respond to policy differences while impressionable voters respond to election campaigns. All voters also have exogenously determined loyalties to the two parties, based on their policy positions on other issues; events at the national, state or district level that affect their relative popularity; incumbency patterns or policies pursued in the past by the two parties within the village; and personal characteristics of the voter and the nominated candidates. Voter loyalties (denoted by ϵ) are dispersed enough to ensure that each party will receive a positive vote share, irrespective of their policy positions. Loyalties may be class and village-specific, and also subject to random swings. Within the village, relative voter loyalty to the party L candidate is distributed uniformly with density f_c and mean ϵ^d_{ct}. Shocks to mean voter loyalties alter the relative competitive position of the two parties.

An aware voter in class c with loyalty ϵ votes for the L party candidate if $U_c(\pi_L) + \epsilon > U_c(\pi_R)$. An impressionable voter votes for L if $h[M_L - M_R] + \epsilon > 0$. These determine the vote share of L as a function of their policy platforms and campaign levels:

$$V_L = \frac{1}{2} + \frac{1}{\sum_c \alpha_c \tau_c}[\sum_c \frac{\tau_c}{f_c}\epsilon^d_{ct} + \sum_c \alpha_c \frac{\tau_c \beta_c}{f_c}\{U_c(\pi_L) - U_c(\pi_R)\} + \chi(M_L - M_R)] \qquad (1)$$

where $\chi \equiv h \sum_{c'} \alpha_{c'} \tau_{c'} \frac{(1-\beta_{c'})}{f_{c'}}$ denotes the effectiveness of campaigns in attracting impressionable voters, proportional to the fraction of impressionable voters. The probability of L winning is $\phi(V_L)$, an increasing function of its vote share.

It remains to specify how campaigns are financed and what the objectives of political parties are. The Grossman-Helpman (1996) model assumes that parties are purely opportunistic and seek to maximize the probability of winning. Election campaigns are financed by contributions from interest groups that represent some particular group of citizens, conditional on policies pursued by the parties. Under suitable assumptions (e.g., a single interest group g, which makes contributions only to influence party policies, rather than affect electoral outcomes), this model predicts equilibrium policies that correspond to a implicit welfare weight assigned by party i to class c:

$$\omega_{ic}^{e} = \omega_{gc}\frac{\chi\phi_i^*}{\theta_g} + \omega_c^d \tag{2}$$

where ω_{gc} denotes the welfare weight of the interest group assigned to group c, θ_g is the cost to the interest group of making campaign contributions, $\omega_c^d \equiv \frac{\tau_c\beta_c}{f_c}$ is the implicit welfare weight associated with the Downsian equilibrium, and ϕ_i^* is the probability of party i winning.

A similar characterization emerges in the case where each party pursues a mixture of ideological and opportunistic objectives, and finance their own campaigns, as in our earlier paper on the land reform (Bardhan-Mookherjee (2003)). We replace the interest group welfare weight ω_{gc} by the ideological welfare weight of party i, and the campaign cost of the interest group by that of the party itself.

To understand the implications of these characterizations, consider first the case where interest group or party ideologies are unimportant (set $\omega_{gc} \equiv 0$). Then equilibrium policies are Downsian, with both parties converging to the same policy platform involving the welfare weight ω_c^d for class c. This is an increasing function of voter awareness in class c, in turn an increasing function of their literacy and socio-economic status. The welfare weight of the poor relative to non-poor classes will thus increase in their relative literacy, land shares, and the wage rate (since a large proportion of the poor derive their livelihood from labor services). As we shall show in Section 6, the wage rate in turn depends on the respective demographic weights of the poor and non-poor, besides land shares, literacy levels, and a host of village demographic characteristics (such as population density, access to nonagricultural occupations). Accordingly, relative welfare weights of the poor will depend on their

relative demographic weight, literacy, and land shares. Note in particular that the effect of a higher demographic weight is to lower the welfare weight of a representative poor voter, in contrast to the effect of higher literacy or land share which raises their welfare weight. Insofar as low caste households tend to belong to the poorest groups and have lower levels of literacy, political awareness or electoral turnout than others, a greater proportion of low caste households in the village would also tend to depress the welfare weight on the poor.

These effects are intensified in the presence of additional distortions created by election campaigns, when they are financed by interest groups or constituencies assigning a lower welfare weight to the poor compared to the Downsian equilibrium ($\omega_{gc} < \omega_c^d$ for poor classes c). The need to accommodate the interests of these constituencies cause both parties to lower their responsiveness to the poor. The extent to which this is so depends on χ, the proportion of unaware voters in the population that forms the target audience for campaign rhetoric and mobilization, and θ_g the cost of campaign finance and organization among the concerned interest group. Under plausible assumptions, higher levels of poverty and inequality tend to be associated with higher values of χ and lower values of θ_g, accentuating the extent of interest group 'capture'.[7]

Campaign distortions also imply a possible role of political composition of the government, since they cause distinct parties to pursue distinct policies. Suppose there is an exogenous swing in voter loyalty in favor of party i, leading to a rise in its equilibrium probability ϕ_i^* of winning. This will allow party i to indulge the ideological preference of the interest group at the expense of voter support, with an opposing effect on its rival. The result will be that party i will pursue a more anti-poor policy, and its opponent a more pro-poor policy. At the same time party i will win a larger fraction of seats in the government, increasing its control over government policy. The resulting relationship between the share of seats of party i and pro-poor bias will tend to be nonlinear, often resembling an inverted-U. Initially if ϕ_i^* is low and party i is in a minority, it could pursue a more pro-poor policy than its rival, so that small increases in its share of government seats increases overall accountability to the poor. But as party i becomes dominant, the policy positions could

[7]These assumptions are that voter awareness β_c is a rising, concave function of landownership, and the interest group is comprised of landed elites. See Bardhan and Mookherjee (1999,2000) for further elaboration.

get reversed, and further increases in ϕ_i^* could lower the overall weight on the poor.

In summary, relative welfare weights on different classes will depend on socio-economic inequality and the nature of political competition. Let $\tilde{\beta}, \tilde{\lambda}, \tilde{\eta}$ denote the vector of demographic weights, land shares and literacy rates of different classes. Let $\tilde{\kappa}$ denote the composition of the local government across different political parties. Then the political weights can be expressed as

$$\omega_c = W_c(\tilde{\beta}, \tilde{\lambda}, \tilde{\eta}, \tilde{\kappa}), c = 1, \ldots, C. \tag{3}$$

2.2 Implications for Intra-Village Targeting

Consider the implications of a given set of welfare weights on allocation of a subsidized farm input by the village government among local farmers. Suppose that different classes correspond to different land sizes owned, and allocation of input f_c to a representative farmer enables that farmer to produce an output y_c given by the production function

$$y_c = \theta A_c f_c^{\mu} \tag{4}$$

where θ denotes village-specific productivity, A_c class-specific productivity, and μ is the elasticity with respect to the concerned input which lies between 0 and 1. The class-specific productivity A_c is increasing in the extent of land, education and other assets owned by class c farmers.

Next assume all households share a common homothetic, concave utility function defined over its output:

$$u_c = \frac{y_c^{1-\rho}}{1-\rho} \tag{5}$$

with $\rho > 0, \neq 1$. With a constraint on the aggregate supply available to the village denoted by $\bar{f}$, the allocation chosen by the government maximizes

$$\sum_c \beta_c \omega_c \frac{[\theta A_c f_c^{\mu}]^{1-\rho}}{1-\rho} \tag{6}$$

subject to

$$\sum_c \beta_c f_c = \bar{f}. \tag{7}$$

This generates the following expression for relative per capita deliveries of the input to different classes c, d:

$$\frac{f_c}{f_d} = \left(\frac{\omega_c}{\omega_d}\right)^{\frac{1}{1-\mu(1-\rho)}} \left(\frac{A_c}{A_d}\right)^{\frac{1-\rho}{1-\mu(1-\rho)}} \tag{8}$$

Let the poor correspond to a specific class p with less assets and hence productivity compared to all other classes, i.e., $A_p < A_c, c \neq p$. Suppose that we observe that the poor receive a smaller per capita allocation than the rest of the village, i.e., the left-hand side of (8) is substantially less than unity. This would correspond to a low targeting performance. But what does this tell us about the pattern of welfare weights ω_c?

The answer depends on ρ, the elasticity of the utility function. If ρ lies between 0 and 1, then efficiency considerations dominate equity for a hypothetically utilitarian government who assigns equal welfare weight to all classes ($\omega_c \equiv 1$, all c). Even in the absence of any class-bias, such a government would optimally award higher per capita allocations to the non-poor because of their higher productivity in the use of the input. In that case a targeting failure need not indicate a lack of political accountability to the poor. Only if ρ exceeds unity would 'equity' or 'need' considerations dominate instead, motivating a utilitarian government to allocate more to the poor. In such cases targeting failures do correspond to a lack of accountability to the poor. Hence inferences regarding accountability from observed targeting depend on ρ, a parameter of the utility function of households in the village.

A similar problem arises with regard to identifying the effects of changing patterns of inequality of land or literacy on accountability. Note that the productivity of class c farmers is an increasing function of their literacy and the land they own:

$$A_c = a(\lambda_c, \eta_c). \tag{9}$$

Inserting (3) and (9) in (8), the latter equation expresses the distribution of per capita allocations to different classes as a function of the distribution of land, literacy, and government seats, which can be estimated from the data. However our real interest is in equation (3) instead, i.e., how accountability varies with land inequality, illiteracy patterns and local politics. Identification of the effect of land inequality and illiteracy on accountability is difficult

because land shares and literacy patterns influence allocations both through productivity and local politics, while we are primarily interested in the latter.

Faced with this problem the following approaches can be explored.

(a) Control for Productivity Differences. The regression can control for productivity differences between poor and non-poor households, using data concerning relative productivity of different size classes (e.g., from farm management data) and include them in the targeting regression. Our intravillage targeting regressions will include versions which control for farm yield differences between small farms and other farms in the village.[8]

(b) Poverty Alleviation Programs and Fiscal Policy We can examine targeting of anti-poverty programs earmarked exclusively for the poor, where productivity considerations cannot legitimize leakages to the non-poor. We can also identify accountability effects from variations in measures of fiscal efficiency, such as local revenue raising effort (principally in the form of land taxes levied on medium and big landowners) and the ratio of administrative expenses and salaries to total expenditures (which presumably reflect the benefits enjoyed by elected officials at the expense of program expenditures that benefit citizens).

(c) Effect of Changing Demographic Patterns. The identification problem is less serious with regard to demographic weights, under the assumption implicit in (9) that changing demographic patterns do not significantly alter the relative productivity of different size classes.[9] Since welfare weights depend on the demographic weights, variations in targeting performance with respect to the latter can reveal reveal something about underlying welfare weights in some circumstances.

Returning to the example with homothetic utility and production functions, one can

[8]This is a less than ideal solution, since relative productivities can themselves be dependent on targeting patterns for farm inputs.

[9]Exceptions could arise in the presence of pecuniary externalities (e.g., through induced effect on wage rates) or scale economies specific to each class (through learning effects that are restricted to social networks demarcated across land class lines). The former problem could be limited by simultaneously controlling for wage rates.

obtain an explicit expression for the targeting ratio for the poor (class p):

$$T_p \equiv \frac{\beta_p f_p}{\bar{f}} = [1 + \sum_{d \neq p} \left(\frac{\beta_d \omega_d}{\beta_p \omega_p} \right)^{\frac{1}{1-\mu(1-\rho)}} \left(\frac{A_d}{A_p} \right)^{\frac{1-\rho}{1-\mu(1-\rho)}}]^{-1} \tag{10}$$

Given the assumption that relative productivities are independent of demographic weights, a sufficient condition for the targeting ratio to increase (resp. decrease) in β_p the demographic weight of the poor, is that the overall weight of a representative poor person relative to a person from any other class $d \neq p$:

$$\frac{\beta_p \omega_p}{\beta_d \omega_d} \tag{11}$$

is increasing (resp. decreasing) in β_p. In other words, the targeting share is increasing in the proportion of poor households as long as their political weight does not fall too fast (i.e., has an elasticity with respect to their political weight which exceeds -1).

In the more general nonhomothetic case, a sufficient condition for the targeting share to improve with a higher poverty headcount (in the case of two classes, poor and non-poor) is that the poor get less than the nonpoor to start with, and their welfare weight is nondecreasing in their demographic weight. In this case the per capita allocation to the poor increases (relative to the non-poor), so the targeting ratio increases more than proportionately than the poverty rate (Galasso and Ravallion (2001)).

Conversely, if the targeting ratio declines when there are more poor households, it must be the case that their political weight declines sufficiently (relative to some other non-poor class). In such cases we can infer that accountability problems are significant and are rendered worse when the proportion of poor households increases.

We turn now to other issues in our empirical specification of the intravillage targeting regression.

2.3 Political Concentration

Expression (3) for the political weights incorporate their dependence on the political parties in power. However, the extent of political concentration may be endogenous, and correlated with unobserved components of voter preferences for redistribution. Our companion paper

on the West Bengal land reform found that fluctuations in the Left share in local government were not significantly related to fluctuations in any of the observed components that affect voter preferences for redistribution, such as distribution of land, literacy or caste, or extent of land reforms carried out in the past. The only two significant determinants were voter loyalty at the district level (measured by relative votes shares in contiguous state legislature elections), and incumbency within the village (measured by lagged Left share). This suggests that temporal fluctuations in the Left share were largely determined by factors exogenous to current voter preferences for redistribution within the village. Under such an assumption, one can include the Left share of local government seats in the intravillage regression. A superior solution would entail using instruments for the Left share, which will be attempted in future versions of this paper. In this version, we report targeting regressions both with and without the Left seat share.

2.4 Scale Effects and Intervillage Targeting

The homothetic model predicts targeting ratios to be independent of the scale of the program — i.e., (10) expresses the targeting ratio which is independent of $\bar{f}$, the amount of the resource available to the local government to distribute. More generally, targeting ratios can be scale dependent. This is an issue of independent interest, since it concerns the implication of scale cutbacks in service programs for the poor (an issue addressed for instance by Ravallion (1999), Galasso and Ravallion (2001), Lanjouw and Ravallion (1999) among others). Accordingly one can add the scale of the program for the village as an additional determinant of the targeting ratios.

The problem with estimating scale effects is the possibility of endogeneity bias. The amount available to the local government is the outcome of a higher level allocation decision, i.e., concerning intervillage allocations at the block or district level. The amount allocated to any given village then depends on the characteristics of the village relative to other villages, and the political objectives of relevant officials at higher levels of government. Our approach will be to model the intervillage allocation as a function of village and district characteristics, and of the scale of the program at the district or state level. The latter

can then be used as an instrument for scale at the village level. The scale of most of the concerned programs at the state level was subject to considerable fluctuation over the sample period, for 'macro' reasons unlikely to be correlated with village specific error terms.

The intervillage allocation is of independent interest, insofar as the overall targeting performance of these programs depends on both inter- and intra-village targeting patterns. Moreover it illustrates targeting and accountability of higher tiers of the *panchayat* system. The overall targeting performance of the system would be higher (resp. lower) if the intervillage allocation favored villages with high (resp. low) poverty rates.

However, drawing inferences about political priorities or accountability at higher levels of government from intervillage targeting patterns is even more complicated than at the intravillage level. To illustrate this, consider the problem of district government officials allocating a given resource stock of S across villages $v = 1, \ldots, V$ where village v has a total population N_v: maximize

$$\frac{1}{1-\rho} \sum_v N_v \sum_c \beta_{cv} \omega_{cv}^d [\theta_v A_{cv} (T_{cv} \bar{f}_v)^\mu]^{1-\rho} \tag{12}$$

subject to the constraint $\sum_v N_v \bar{f}_v = S$. Here subscript v denotes village v, T_{cv} the proportion of the resource that the district government expects the local government to subsequently allocate to class c residents, and ω_{cv}^d denotes the political weights assigned to different classes and villages by the district officials.

If the district officials know and take the intravillage targeting ratios T_{cv} as given, the relative per capita allocations assigned to villages v and w will satisfy

$$\frac{\bar{f}_v}{\bar{f}_w} = [\frac{\gamma_v}{\gamma_w}]^{\frac{1}{1-\mu(1-\rho)}} \tag{13}$$

where the relative 'eligibility' of village v is defined by

$$\gamma_v \equiv (\theta_v)^{1-\rho} \sum_c \beta_{cv} \omega_{cv}^d [A_{cv} T_{cv}^\mu]^{1-\rho} \tag{14}$$

This implies that the per capita allocation received by a village depends on the distribution of land, literacy and productivity within the village, the intravillage targeting ratio, and the scale of the program at the district (or state level).

The eligibility parameter for a village depends on its intravillage targeting ratio, and can be interpreted as a covariance between the ultimate income implications for different classes of the program, and welfare weights assigned to them by district officials. In particular, a village with a high poverty rate may be assigned a low allocation even if the district officials assign a high welfare weight to the poor, if the village government allocated relatively little of what it receives to its poor residents. This complicates inferences of accountability of the district governments from observed intervillage allocations.

One way of dealing with this complication is to control for observed intravillage targeting performance in the analysis of intervillage allocations. We will therefore report intervillage allocation regressions which control for intravillage targeting ratios. One might be able to infer something in such a regression from how allocations assigned to the village vary with targeting within the village: it seems intuitive that a positive correlation of the village allocation with its intravillage targeting performance *vis-a-vis* the poor indicates that district level officials assign relatively high weight to the poor. But examination of (14) indicates that this intuition is correct only if ρ lies between 0 and 1. In the opposite case where ρ exceeds one, district officials that are concerned about the poor should allocate more to villages that target less well to the poor, in order to compensate for the deficiencies in the intravillage allocation. Therefore inference concerning political priorities of district officials must rely on inferences concerning ρ. The latter is possible from observing how intravillage allocations vary with relative productivity of small and big landowners. If intravillage targeting increases with the relative productivity of small landowners then this would indicate a ρ between 0 and 1. In that case, a positive correlation between intervillage allocation and intravillage targeting would indicate that district officials were trying to target resources to the poor.

In the nonhomothetic case there is an interdependence between intravillage and intervillage allocations. Intravillage targeting ratios depend on the scale of resources allocated to the village (owing to the nonhomotheticity), whilst as we have seen above the the resource allocated to the village depends on the intravillage targeting. In this case an equilibrium will entail each level of government playing a best response to the other. Moreover, the scale of the program received by the village will be correlated with unobserved redistributive pref-

erences of its voters that affect its intravillage targeting performance. Then OLS estimates of scale on intravillage targeting will be biased. To avoid this, we need an instrument for the scale of the program allocated to the village. We shall use the scale of the program at the level of the district or the entire state as an instrument, under the assumption that these reflect 'macro' shocks uncorrelated with unobserved village specific preferences for redistribution.

3 Background, and Description of Data

Article 40 of the original Indian Constitution states that "the State should take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government". However this article was in the nature of a directive principle for state policy, responsibility for the implementation of which was devolved to state governments. In 1957 the Balwantarai Mehta Committee of the government set out a detailed set of suggestions for establishment of a three tier system. Following this West Bengal passed a Panchayat Act in 1957 and a subsequent Zilla Parishad Act in 1963. However these panchayats were devolved few responsibilities, financial support was lacking, elections were not held regularly, and involved little or no popular participation.

In 1977 the Left Front alliance came to power at the state government, displacing the previous Congress (I) government. Since then the Left Front has been re-elected with an absolute majority in five successive elections to the state legislature. Upon assuming power at the state, the two top priorities of the Left Front government were land reforms and village democracy. With regard to the latter they created a three tier system of local governments (*panchayats*), along the lines of the earlier recommendations of the Balwantarai Mehta Committee. The three tiers were at the district (*zilla parishads (ZP)*), block (*panchayat samiti (PS)*) and village (*gram panchayat (GP)* levels. On average a GP covered 8–10 villages and a population of around 12000. A system of mandatory elections once every five years to these governments was started from 1978, with direct elections for seats in all three levels. Each government is comprised of a number of seats (between five and twenty five),

and operates as a council that makes decisions collectively. At the district and block levels, the councils include representatives from lower level governments, and corresponding officers of the state bureaucracy (e.g., the District Magistrate in the ZP). Each GP corresponds to between eight and ten constituencies on average electing two members each.

Reforms to the system were created in 1985 and 1993 to shift responsibilities to the village governments away from bureaucratic officials in concerned ministries of the state governments, and to create a bottom-up budgeting system. The principal responsibilities entrusted to the *panchayats* included implementation of land reforms, of the two principal poverty alleviation schemes (the IRDP credit program, and employment programs such as Food for Work (FFW), National Rural Employment Program (NREP), Rural Labour Employment Guarantee Program (RLEGP) in the 1980s which were merged into the *Jawahar Rozgar Yojana (JRY)* from 1989 onwards), distribution of subsidized agricultural inputs (in the form of minikits containing seeds, fertilizers and pesticides), local infrastructure projects (including roads and irrigation), and miscellaneous welfare schemes (old-age assistance, disaster relief, housing programs for the poor etc.). The capacity of these local government to raise local revenues was extremely limited, with local taxes and fees collected amounting to only 3.7% of total GP revenues in our sample. The bulk of the funds were devolved to the GPs under various schemes sponsored by the central and state government, amounting to 78% in our sample. The role played by the GPs therefore consisted mainly in selection of beneficiaries of various development programs handed down from the central or state government. Moreover they hardly played any role in the delivery of education or health services to residents, with operation of primary or secondary schools and medical clinics still under the control of state government officials.

Our sample includes 89 villages drawn from fifteen different districts of the state, as depicted in Table 3.1.[10] The villages do not represent a random sample, and were chosen on the basis of our ability to locate farm production records from cost of cultivation surveys

[10]Calcutta and Darjeeling were excluded owing to the paucity of agriculture in those districts: Calcutta is primarily urban while Darjeeling is a mountainous region dominated by tea plantations. District boundaries within Dinajpur have changed within the period being studied so we aggregate all the data for Dinajpur villages. We therefore end up with data for 15 districts.

carried out by the state's agriculture department.[11] Table 3.1 also provides the average share of seats of the Left in the GPs and ZPs in these districts. In the vast majority (almost three quarters) of GP administrations, the Left Front had an absolute majority, with a mean share of 66%. Their control of the ZPs was even higher, with a mean share of 86%. Yet, there were wide variations in their control across districts: they formed a minority in Malda GPs, and shared control evenly with the Congress in Dinajpur, Murshidabad and 24 Parganas GPs. Table 3.2 showed that their control also fluctuated over time, decreasing substantially during the 1983–88 period, then recovering somewhat in the 1990s. This was correlated with their general popularity among voters, as indicated by vote shares at the district level in contiguous state assembly elections.[12] Our companion paper showed that the outcomes of GP elections principally reflected these district-specific patterns in voter loyalties, apart from a positive incumbent bias within the village.[13] There was no systematic correlation with any dimension of the land distribution, past records with respect to land reforms implemented in the village, patterns of illiteracy or caste. Hence elections to local governments appear to have been decided mainly on the basis of voter loyalties based on historical or wider district or state level issues.

Efforts to use government land records to construct the landownership distribution within each village did not succeed, owing to the difficulty of consolidating land titles by households. We therefore conducted an 'indirect survey' whereby three or four village elders provided details of each household on each voter list concerning land owned, leased or cultivated (area, irrigation status, mode of acquisition for owned land, *barga* registration status for tenants), caste, occupation and literacy status. This provided a complete description of landownership, occupation and literacy distributions for 1998 and either 1978 or 1983. The information provided was cross-checked across different elders. This was the only practical method of constructing the landownership distribution by households within the village and its change over the past two decades, within the timeframe and budget of the surveys. The alternative of asking each household concerning their landholdings would

[11] However, the cost of cultivation surveys themselves were based on a stratified random sampling scheme.

[12] The measure selected weighted distance in years between assembly and *panchayat* elections.

[13] See Table 18 in Bardhan-Mookherjee (2003).

have been more expensive, time consuming and subject to the reluctance of households in remote villages from disclosing their principal assets to outsiders. Our method exploits the fact that landholdings of different households is well known within the village and especially to village residents of long standing. Moroever, our investigators did not perceive any reluctance by elders to disclose ownership patterns in the village.

Table 3.3 describes averages of key economic and demographic characteristics of the villages in the sample at the beginning and end of the period, based largely on the indirect household survey, and supplemented by data from the farm level cost of cultivation surveys on wages and farm yields. There was a substantial growth in the number of households, owing to a combination of population growth, household division and immigration (for villages near the Bangladesh border). This was accompanied by an increase in proportion of landless households, and a decline in medium and big landowners. The size categories used are small (0-5 acres of cultivable land), medium (5–12.5 acres) and big (12.5 acres and above). There was a decline in share of cultivable area accounted by the medium and big landowners, and a corresponding increase in small land, to the tune of 12.5% — substantially in excess of the extent of land distributed by the land reform program (3.5%). Hence there was an increase in the proportion of households that were poor as defined by landownership below 5 acres, associated primarily with growth of landless households. At the same time there was an increase in the relative landholdings of small landowners. The proportion of population classified as low caste (belonging to scheduled castes or tribes) remained stationary, amounting to about one third.

Wages for farm labour increased in nominal terms, and so did farm yields measured as value added in rupees per acre. But both of these were outstripped by increases in the cost of living. There was an increase in the proportion of household heads engaged in non-agricultural occupations, and an expansion in the commercial bank system which caused the number of banks to grow faster than the population.

4 Credit: Allocation of IRDP loans

The IRDP program was started in 1978. From 1980 onwards it covered all blocks in the country. It replaced a a number of different programs with a single integrated package of technology, services and assets aimed at improving the earning capacity of the rural poor. The most important component was a loan offered to the recipient, a certain fraction of which was a subsidy which did not have to be repaid. The target groups were scheduled castes and tribes, agricultural workers, artisans, marginal and small farmers not owning more than 5 acres of land. The subsidy rate was highest (50%) for scheduled castes and tribes, and lower (ranging from 25 to 33%) for others depending on how much land they owned. A certain fraction was earmarked for women and scheduled castes and tribes. The loans were usually given to enable recipients to invest in assets required in service professions (such as artisan tools, retail shops or rickshaws), livestock and agricultural implements. The loans were channelled through 'lead' commercial banks located in the vicinity of the villages. The panchayats usually selected a number of loan applicants from within each village and forwarded their applications to the local lead bank, with the ultimate loan decision made in consultation between officers of the bank, block officials, and officers of the District Rural Development Agency (DRDA), a nodal agency of the state government.

The scheme was slow to get going in the beginning, owing partly to problems in disbursement and utilization of loans which took almost the first ten years to iron out (Lieten (1992, Table 7.2)). This is evident in our sample from Table 4.1 which shows increasing participation rates from the 1980s to the 1990s. Our data consists of details of loans advanced in some sample years usually spaced apart across successive panchayat administrations in individual villages. In the 1990s, virtually every village in our sample received IRDP loans. Within participating villages the total volume of credit in any given year was Rs 6700 (in 1980 prices), amounting to about Rs 29 per household. The average size of an individual loan was Rs 826, with eight households (out of a population of about three hundred) on average receiving a loan. It is apparent therefore that participation within the village was highly selective.

We obtained details of individual IRDP loans disbursed to residents of the sample vil-

lages since 1979 by the local lead bank. The names of the beneficiaries were matched with the indirect survey, enabling us to identify their landholding status. We were successful in identifying the recipients of approximately 92% of the total loan amounts disbursed, and correspondingly restrict our targeting analysis to the loans that were identified. Other loan details included the amount, duration and purpose of the loan, the interest rate, and the subsidy component. We computed the following measure of financial subsidy f for each loan:

$$f = l[s + (1 - s)\nu] \tag{15}$$

where l denotes the loan amount, s the proportion of it that was the subsidy, and ν the difference between the interest rate on the loan and market interest rates. Data on the market rate was unavailable, so we constructed f on the basis of different assumptions regarding the value of ν. The results with different values of ν were qualitatively similar, so we report the results corresponding to $\nu = 50\%$. For our targeting analysis we compute the aggregate volume of this measure of credit subsidy accruing to villages, and its allocation across the landless, farmers owning upto 5 acres of land (small farmers), medium farmers owning between 5 and 12.5 acres, and big farmers owning more than 12.5 acres respectively.

The share of credit subsidy of the target population comprised of the landless and small landowners was .96, averaging across all villages and years. The corresponding average share of the landless was approximately half of this, amounting to .46. As Table 4.1 indicates, these exceeded their respective demographic weights and land shares. The program thus appears to be successfully targeted to the intended beneficiaries, with only a small portion leaking to medium or large farmers. Table 4.1 also indicates that relative to demographic weight, targeting performance improved after the first panchayat administration (1979–83), and did not deteriorate thereafter (in the case of the 'upto small' category which includes all households owning less than 5 acres of cultivable land).

Table 4.1 shows that there was substantial variability in targeting shares around these high means, particularly for the landless. Table 4.2 reports the results of the intervillage regression predicting the total credit allocated to a village in any given year. The regressors include the demographic weights of different land size classes, illiteracy rate among the 'upto small' category, referred to as 'poor' in the table), proportion of low caste households, land

shares of small and big landowners, the average scale of the program for that year across all villages in the sample ('state average credit'), intravillage targeting to the 'upto small' category, and the proportion of seats in the local GP and district ZP secured by the Left.

Table 4.2 shows a significant positive effect of the demographic weight of middle landowners, and negative effect of low caste households (one of the principal stated beneficiaries of the program). A one standard deviation (4%) increase in the fraction of middle landowning households raises the village's per household credit allotment by Rs 60, about twice the mean level. By contrast an increase in the fraction of the intended target population (landless or small landowners) did not result in larger volumes of credit. Nor did superior intravillage targeting result in higher allocations to the village. These results suggest a disproportionate extent of power exercised by medium landowners in attracting credit to the village.

The presence of political distortions is suggested additionally by an inverse-U pattern with respect to the Left's control over the district ZP (the level where the intervillage allocation decisions tend to be made). The turning point in this relationship is around 80% (somewhat below the mean Left share at the ZP level). Hence increases in Left control beyond the mean were associated with allocation of less credit to the village.

Table 4.3 presents corresponding regressions predicting intravillage shares of allocated credit for different landowning groups. The level of credit allocated to the village is predicted from the intervillage regression, with the average scale of the program in the state as a whole serving as an instrument for the scale for any given village. The reported standard errors of the predicted credit per household for the village understate the true standard errors, by not allowing for the prediction error.

We see a tendency for targeting to deteriorate when scale expanded, suggesting that local governments first directed credit to the poor at small scales and diverted subsequent allotments to the nonpoor when the scale expanded. Besides scale the regression additionally controls for the relative yield of small farms.[14] The productivity difference variable had a

[14]Farm yields for each size class are calculated from the cost of cultivation surveys in the village as value added per acre, suitably extrapolated or interpolated to the year in question in case there were no surveys

negligible effect on targeting. Modulo possible meaasurement errors in productivity, there is no firm evidence to suggest that ρ significantly exceeded unity.

The intravillage regression indicates statistically significant effects of demographic composition between different landowning classes, pointing to the political weight of medium landowners. The first column indicates that a 2.5% shift out of the middle landowner category into the eligible category (corresponding to the average shift occurring over the entire time period) was associated with a modest 6 percentage point decline in the proportion of credit reaching the target population (against an average targeting ratio of 96%). The share of the medium landowners increased concomitantly, suggesting that the diversions benefited them rather than big landowners. Similar effects were observed with respect to increased proportion of low caste households: a 5% increase was associated with a statistically significant 2% drop in the share of the eligible population.

These effects on intravillage targeting however pale in comparison with the corresponding change in the credit allocation received by the village as a whole. For instance, a 2.5% shift in demographic composition from medium landowners to the landless was associated with a decline in per capita credit allocation to the village by Rs 37, more than 100% of the mean. This overwhelms the effect of the decrease in intravillage share of the poor from 96% to 90%. Similarly a 5% increase in proportion of low caste households was associated with a 75% decline in credit allocated to the village, and a 2% drop in the share of eligible households within the village.

The effects of land distribution and illiteracy are less significant, though their signs are consistent with their hypothesized effect on political welfare weights. These effects could conceivably be rationalized by the corresponding productivity effects, but the regressions control for farm yields of small landowners relative to the rest of the village.

Finally, there was little evidence of any association of intravillage targeting with Left control of the *gram panchayats*. The only statistically significant effect was a U-shaped pattern of the share of medium landowners and Left control of *Zilla Parishads*. The results suggest that when the Left consolidated its control beyond a three fourths majority it

carried out in the village that year.

allowed medium landowners to get a higher share at the expense of the poor.

5 Agricultural Minikits

An important component of agricultural policy comprised the distribution of minikits containing seeds of high yielding rice varieties, potatoes, mustard, sesame, vegetables, fruits and lentils, besides fertilizers and pesticides. These were distributed by the block offices of the state's Agriculture department, in consultation with panchayat officials. In the sample villages the bulk of these were accounted by rice, potato and oilseeds. Table 5.1 provides some of the relevant descriptive statistics for all kits, ricekits and kits containing potato and oilseeds. The spread of kits of any single category was subject to considerable censoring, so we focus principally on the allocation of all kits. Since use of these seeds is linked to the availability of cultivable land, we examine the targeting share of the 'upto small' category rather than landless households.

Similar to the allocation of IRDP credit, the target share of small and marginal landowners was high on average, amounting to approximately 87%. The same average prevailed within the category of kits containing rice seeds and potato/oilseeds as well. These shares were slightly below their demographic weights, and significantly above their land shares.

Table 5.2 indicates that just as in the case of credit, the intervillage allocation was significantly decreasing in the demographic weight of the poor. Owing to the larger extent of censoring in the kit distribution (wherein approximately 10% of villages did not receive any kits at all), we present tobits with district fixed effects in the first, second, fourth and sixth regressions. The remaining regressions ignore the censoring and incorporate village fixed effects. The biases against villages with more landless and small landowners become sharper while controlling for village fixed effects. The village allocation also decreased when the proportion of low caste households rose. The magnitude of these effects are large: a 2.5% shift in demographic weight from medium to landless households decreased the village allocation by about 75% of the mean, while a 5% rise in low caste households decreased the village allocation by 40% of the mean. x Changing land shares on the other hand did not

have a significant effect.

In other respects, however, the intervillage patterns are different from the credit program: medium landowners were less instrumental in attracting kits to the village. Rising literacy among the poor by 12 percentage points raised the village allocation by almost 50% of the mean. The effect of Left control is also different. Their control at the district level was not significant, while at the GP level was significant. With respect to the latter, we find a U-shaped relationship, with a turning point around 50%. Hence over a significant range in the sample, an increase in the Left share lowered the village allocation.

Table 5.3 presents the intravillage targeting regression for minikits. There is a negative effect of increasing demographic weight of landless and small landowners, but this was statistically significant only at the 20% level. None of the other village characteristics were significant even at the 20% level, suggesting that intravillage targeting was fairly uniform across the sample. There were also no significant effects of varying the Left's control over the local governments at any level. In summary, there is little evidence of an adverse impact of higher land inequality, illiteracy, or political concentration on targeting of kits within villages. The more important anti-poor political distortions were in evidence in the intervillage allocation.

6 Employment Programs

Employment generation for the rural landless is a major instrument of policy for alleviating poverty in India. In 1980 the Food for Work program was replaced by the NREP and RLEGP whose objectives were to generate employment for the landless, with a preference for scheduled castes and women. The stated objective of the RLEGP was to provide at least one member of every rural landless labour household with upto a hundred days of employment in a year. The projects would involve construction of local infrastructure, especially roads and irrigation. In 1989 these various employment programs were merged into the JRY, a single comprehensive program. All these programs are sponsored by the central government, with matching contributions from the state government. In West Bengal significant responsibility

for implementing these projects were devolved to the panchayats, in contrast to other states. The programs were coordinated by the ZPs, while detailed selection of project, organization and supervision were delegated to the GPs. About 20% of the funds were retained by the ZP for funding district wide infrastructure projects, with the rest distributed across villages in a uniform fashion. Numerous restrictions concerning utilization of the funds were imposed on the GPs, especially with respect to the proportion of labor and material costs, and sometimes also with respect to the kinds of projects that could be selected. Additional problems included shortages and delays in receipt of funds, resulting in underutilization of officially sanctioned amounts. The problem originated often in shortages and delays in receipt of Central government funds by the state government, with further compounding in disbursements to lower level governments. Hence actual funds received and utilized frequently fell short of the allocations that the panchayats were entitled to.

The scale and range of the employment program was far more significant than the IRDP. From the budgetary records of the GPs for selected years between 1979 and 1998 (where one year from each GP administration was selected), we computed the total grant received and utilized under the various employment programs. There was relatively little censoring: only 5 out of 236 village years in the sample were censored. For those villages that received the grants, the amount received was approximately Rs 60,000 per year at 1980 prices, or about Rs 350 per household. This was approximately ten times the scale of the IRDP.

Table 6.1 provides OLS regressions for intervillage allocation of employment grants with village fixed effects. In contrast to the allocation of credit, there were no significant correlations with the land distribution, village demographics or political strength of the Left at either GP or ZP levels. The only statistically significant effects are a positive correlation with average farm yields and with the scale of the program at the district (measured by the average disbursement per household to all other villages in the same district for that year). This suggests that the intervillage allocations were indeed uniform to a large degree.

It is interesting to examine whether the allocations were sensitive to labour market shocks in the village. In bad times when employment is scarce for the landless one would expect the rural wage to fall, so we can measure sensitivity of employment grants to the

local farm wage rate. However the size of the employment grants received may affect the wage rate, so we need to instrument the wage rate. Table 6.2 presents a wage regression with village and time fixed effects. This shows that the rural wage fell significantly when the proportion of landless or small landowners rose, small landowners had a lower land share in the village, there were fewer nonagricultural employment opportunities, and population density was higher. Surprisingly, higher illiteracy among the poor had a significant positive correlation with the wage. Also, rainfall shocks had statistically insignificant impact on the wage, even after interacting rainfall with a dummy for North Bengal districts. The effect of rainfall was negative, suggesting that deviations from the norm usually involved excessive levels of rain.

The estimated wage equation was used to predict the wage in the employment grant equation in Table 6.1, with population density serving as the instrument. The underlying assumption is that the operational land area in the village should have no impact on the employment grant allocated to a village, after controlling for its effect on the level of poverty (i.e., the wage rate, the proportion of landless or low caste households). We find that the coefficient of the predicted wage is negative and insignificant. Since the reported standard error does not incorporate the prediction error in the wage, it understates the true standard error. It therefore appears that the employment grants were not sensitive to local labour market shocks.

Given absence of data concerning the identity of those employed in these programs, it is difficult to calculate intravillage targeting ratios for the employment program. Instead one can gauge whether local officials acted in a pro-poor fashion by measuring the actual employment generated by the panchayats out of these programs, per rupee of grant money received. Foster and Rosenzweig (2000) argue that this can be measured by the allocation of funds to roads rather than irrigation projects, on the grounds that road projects are more employment intensive. Consistent with this we find that the mandays generated in road programs per rupee spent was about four times that in irrigation programs. But the associated standard deviations of this ratio in the two programs were also quite high, implying that the hypothesis of equality could not be rejected at conventional levels of significance. It seems preferable to directly use the number of mandays of employment created per rupee of

grant money received, to measure the extent to which the panchayat officials implemented the employment progams in the interests of generating maximal employment opportunities for the poor.

Table 6.3 reports tobits with district fixed effects for the ratio of mandays generated to grants received. We find no significant correlations with respect to the land distribution, demographics or illiteracy among the poor. There are statistically significant nonlinear patterns with respect to Left control of the panchayats: an inverted-U with respect to the Left share of GP seats with a turning point of approximately two-thirds, and a direct-U with respect to the Left share of ZP seats with a turning point of around 90%. These results are difficult to interpret.

To provide possible understanding of this finding, Table 6.4 report regressions for fraction of program expenditures allocated to roads and irrigation respectively. There are no discernible patterns with regard to the allocation to irrigation, while in the case of roads we find no significant effect of GP shares, but a significant inverse-U with respect to the Left share of ZP seats (opposite to the pattern in Table 6.3). Hence we are unable to provide an explanation of the political effects on employment generating effort of the local governments in terms of the allocation to road programs.

With regard to the Foster-Rosenzweig finding of positive responsiveness of investment in roads to the demographic weight of the poor in villages with elected local governments, we also find the coefficient of the demographic weight of the poor is positive, but statistically insignificant. Foster and Rosenzweig's results pertain to a sample of 250 villages across all of India, whereas we are restricting attention only to West Bengal. Moreover, their dependent variable is a measure of the stock of roads available and its change over a twenty year period (with village fixed effects), while we are examining effects on variations in the yearly allocation of employment funds to road projects (with district fixed effects).

7 Fiscal Policies

In this section we examine measures of fiscal performance of the GPs. We focus on two main indicators: their effort in raising local revenues and in controlling the proportion of expenditures incurred in salaries and administrative costs. With regard to the former, local revenues played a very limited role in GP revenues. The average fraction of annual GP revenues raised in the form of local taxes and fees was only 3.7%. However the GPs raised revenues from other local sources, such as sale of goods and assets (e.g., sale of fish produced from tanks and ponds, auction of buildings and furniture etc.) which were far more significant, amounting to 18.8% of annual revenues. The rest (about 78%) came in the form of grants from higher levels of government, tied to specific programs with clearly stated objectives. Clearly there was limited scope for any form of fiscal autonomy for the GPs, who had to rely mainly on money handed down from above for implementing development projects.

Since local revenue effort would be likely to depend on the volume of grants they expected to receive, it is necessary to first estimate the pattern of fiscal grants across villages. Table 7.1 presents regressions of total grant money received per household at 1980 prices, with village fixed effects. In contrast to the allocation pattern for employment grants (one important component of the aggregate grants) that we saw in Section 6, we find here a significant anti-poor bias. A 2.5% increase in the proportion of landless or small landowners in the village relative to medium landowners was associated with a reduction of Rs 128 in grants per household received, amounting to about one fifth of the mean grant. No other village characteristic has a statistically significant impact (at the 10% level).

Table 7.2 presents regressions predicting local revenue raising effort. The first two columns predict local taxes and fees collected per household. These are increasing in the proportion of landless households, an effect that is significant at 20% in column 1 which does not control for the grant received by the village. This effect becomes less significant in the second column of Table 8.2 which controls for the predicted level of fiscal grant generated by the GP from the reduced form regression in Table 8.1. We find a negative effect of the predicted fiscal grant on local tax revenue raised, which becomes significant when we use the

true rather than the predicted grant. Hence there was a slight regressivity in the local tax system, partly explained by the fact that a rise in the proportion of poor households meant that the village was likely to receive a smaller fiscal grant. The GP tried to compensate for this with a higher local revenue effort.

It is notable that despite the progressivity in the land tax (where only holdings above a certain size are subject to the tax) which constituted the most significant source of local taxes, local tax reveues did not manifest a significant positive correlation with the proportion of land in big holdings. In contrast to the mandated tax rules, the actual revenue pattern manifest no progressivity at all with respect to the land distribution. Medium landowners appear to pay more taxes than either the poor or the big landowners, with the big landowners paying the least, though the differences are not statistically significant at the 10% level.

We see a similar pattern with respect to other sources of local income, which were increasing in the proportion of poor households relative to medium or big landowners. It is somewhat surprising to note the significant positive correlation with the predicted fiscal grant (which could arise if there were requirements in the grants that local governments provide matching contributions). These auxiliary income sources were also positively correlated with measures of local prosperity, such as farm yield and rural wages.

The fourth column aggregates tax and nontax revenue effort per household, while the fifth column expresses local revenues as a proportion of total GP revenues. Here there are few statistically significant coefficients, save the effect of the local farm yield. There continues to be absence of any progressivity in the system, or any significant effect of fiscal grant that the GPs would expect to receive (the negative effect on tax effort neutralizing the positive effect on non-tax revenues).

Table 7.3 presents regressions for the proportion of GP expenditures accounted by salaries and administrative costs, which averaged 36% across villages in any given year. The notable result here pertains to a significant positive coefficient of the land share of big landowners. A 10% shift in land share from medium to big landowners was associated with an increase in proportion of non-developmental costs by over 7%. Consistent with

this, growth in demographic weight of medium landowners relative to big ones resulted in a significant reduction of this proportion. It is unlikely that a shift from medium to big landowners would be associated with a significant rise in the administrative burden of the GPs. After all such a shift was not associated with a rise in land taxes collected. Nor is it likely to be accounted by a smaller volume of fiscal grant received (combined with the fixed cost character of salaries and some administrtive costs), since Table 7.1 indicates an insignificant effect of the top end of the land distribution on fiscal grants received by the village. It is thus tempting to lean in favor of the hypothesis of a cosy reciprocal relationship between GP officials and big landowners, wherein the latter would be allowed to evade land taxes by the officials and the landowners in turn would raise objections to lavish spending by the officials on their salaries and other perquisites. These relationships would be harder with a newly emerging and larger number of medium landowners, who both tended to evade less and exercise greater vigilance on spending of GP officials.

8 Conclusion

We now summarize our main results and discuss their implications.

(1) High levels of targeting within villages were achieved for credit, irrigation and minikits. Over 85% were directed to these groups; their shares were close to their demographic shares and significantly exceeded their land shares.

(2) In the case of the IRDP credit program, there were significant responses in intravillage targeting ratios to changes in the local land distribution, demographics and Left control of panchayats, indicating the role of political accountability of local governments to the poor. As the poor became more numerous their target shares fell significantly, with a concomitant rise in the share of middle landowning classes. These effects arose despite controlling for wage rates and relative productivity of small landowners, so are unlikely to be explained by general equilibrium or efficiency considerations. But these effects were not that large to lower the targeting ratios by a lot (e.g., one s.d drop in proportion of medium landowners accompanied by increase in small landowners or

landless would lower targeting share of the poor by about 10%, against an average share of 88%).

(3) Similar biases in intravillage allocations were not in evidence in the case of distribution of minikits or in employment programs.

(4) Intervillage allocations of credit and kits exhibited significant bias against villages with a high proportion of landless and small landowners. This could represent a more important source of targeting failure than occurred within villages as a result of local elite capture. Political considerations and discretion at the district level are suggested by the tendency to direct more credit towards villages located in districts where Left control of ZPs was slightly below the mean, compared to those where it was above the mean or significantly below.

(5) In contrast, employment programs were allocated across villages quite uniformly. This possibly reflected the formula-bound nature of this scheme. The flip side of being formula-bound was limited flexibility of employment grants to local labour market shock).

(6) Panchayats had limited scope for raising revenues from local sources, relying overwhelmingly on fiscal grants from higher level governments. Intervillage allocation of fiscal grants exhibited bias against villages with more landless and small landowners, unlike the allocation of centrally sponsored employment grants and more like the credit program. However there was no evidence of significant effects of Left control on intervillage grants.

(6) Local non-tax revenues were far more important than local tax revenues, suggesting the role of panchayat effort in raising local revenues. There was a tendency for big landowners to generate less revenues than other classes, despite progressivity of the land taxes, and also exercise less vigilance over spending of GP officials on salaries and administrative costs.

(7) Overall, the evidence for intravillage leakages is scant. Illiteracy or land inequality lowered targeting performance within villages to a negligible extent. Greater distortions

were manifested in intervillage allocations of credit, minikits and fiscal grants. We could not find evidence of any antipoor bias in employment programs. This suggests that decentralization in West Bengal performed reasonably well with regard to intravillage allocations. But there was significant scope for improvement in intervillage allocation of credit, minikits and fiscal grants.

TABLE 3.1: DISTRICT-WISE ALLOCATION OF SAMPLE VILLAGES AND LEFT-FRONT SHARES IN GP and ZP

District	Number of Villages in sample	Left Front % Seats in GP	Left Front % Seats in ZP
24 Parg.(N)	6	54	89
24 Parg.(S)	8	54	73
Bankura	5	80	98
Birbhum	5	60	87
Barddhaman	9	78	96
Cooch-Behar	8	84	88
Hooghly	6	71	93
Howrah	4	75	87
Jalpaiguri	5	69	78
Malda	2	38	72
Midnapur	8	75	89
Murshidabad	6	46	77
Nadia	5	72	93
Dinajpur	4	53	65
Purulia	8	61	91
West Bengal	**89**	**66**	**86**

TABLE 3.2: LEFT SHARE IN GP and ZP SEATS, STATE ASSEMBLY VOTE SHARE DIFFERENCE					
Time Block	Left Front % Seats in in GP (sample)	Left front % Seats in in ZP (sample)	Left front % vote in Assembly (all WB)	Congress % vote in Assembly (all WB)	Difference
1978-83	75	93	50	32	18
1983-88	62	76	53	41	12
1988-93	71	90	52	38	14
1993-98	68	87	50	36	14

TABLE 3.3: VILLAGE ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS IN SAMPLE VILLAGES, 1978 AND 1998

	1978	1998
Number of households	219	388
Operational land-household ratio (acre/hh)	1.75	1.07
% households landless	44.8	48.7
% households small (0–5 acres)	51.3	50.5
% households medium (5–12.5 acres)	4.9	2.4
% households big (12.5– acres)	1.1	0.4
% land small	67.3	79.9
% land medium	23.6	15.2
% land big	9.1	4.9
% households low caste	32.8	34.4
% poor (landless + small) households illiterate	50.5	38.4
% big households illiterate	2.1	1.7
% households in nonagricultural occupation	38.7	47.4
Farm yield (Rs/acre)	1995	6483 (year 1996)
Nominal hourly farm wage (Rs./hour)	2.11	4.43
Cost of living index	.80	6.50
Population-Bank ratio	41.6	22.4

Source: indirect household survey, except data on farm yield and wages based on cost of cultivation farm surveys and cost of living index (for agricultural workers) and population-bank ratio from West Bengal Economic Review, various years

TABLE 4.1: CREDIT DESCRIPTIVE STATISTICS SAMPLE VILLAGE AVERAGES					
	1979–83	1984–88	1989–93	1994–98	1979–98
Number of Village-Years in Sample	10	106	168	179	463
Number of Village Years with positive credit	10	98	165	176	439
Average Loan Size per hh in Village receiving credit (1980 Rs.)	131.68	38.43	28.74	18.55	29.15
Landless share of credit (s.d.)	.40 (.46)	.49 (.40)	.44 (.38)	.45 (.40)	.46 (.39)
Upto Small share of credit (s.d.)	.73 (.40)	.96 (.16)	.97 (.11)	.98 (.10)	.96 (.14)
Landless: Ratio of Credit Share to Demographic Weight	.81	1.59	1.42	1.23	1.37
Upto Small: Ratio of Credit Share to Demographic Weight	.82	1.05	1.03	1.01	1.02
Upto Small: Ratio of Credit Share to Land Share	1.57	1.57	1.41	1.32	1.41

TABLE 4.2: INTERVILLAGE IRDP CREDIT ALLOCATION			
n,g,w-R^2	370,73,.17	365,72,.21	360,72,.23
% HH Landless	-77.21	76.73	74.24
	(177.01)	(186.58)	(190.35)
% HH Small	-270.25*	-102.08	-101.32
	(144.10)	(154.57)	(158.39)
% HH Medium	1483.27***	1548.88***	1550.14***
	(422.92)	(432.09)	(431.68)
Land Share Small	174.71**	121.70?	118.31?
	(78.99)	(81.35)	(82.42)
Land Share Big	-143.28	-107.36	-87.12
	(119.89)	(120.79)	(122.76)
% Illiterate among poor	88.47	128.22?	138.02?
	(81.41)	(82.70)	(84.11)
% HH Low Caste	-465.16***	-433.63***	-465.81***
	(145.57)	(146.56)	(147.69)
State Average Credit	.048**	.046**	.052**
	(.021)	(.021)	(.021)
State Average Credit sq.	-23e-6**	-22e-6**	-25e-6**
	(11e-6)	(11e-6)	(12e-6)
Intravillage Targeting Ratio			-13.37?
			(9.57)
% Left GP		44.51	45.14
		(37.72)	(37.95)
% Left GP sq.		-4.35	-5.03
		(31.59)	(31.81)
% Left ZP		383.15**	345.38*
		(173.51)	(177.78)
% Left ZP sq		-237.97**	-214.52*
		(112.40)	(115.54)
Dependent variable: credit subsidy received per household, at 1980 prices All regressions include number of households, rainfall, percent nonagricultural occupation, wage rate, farm yield, population-bank branch ratio; village, timeblock dummies, and a constant term. ***, **, *, ? denote significant at 1,5,10,20% respectively			

TABLE 4.3: INTRAVILLAGE IRDP CREDIT TARGETING

	Upto Small Share	Upto Small Share	Upto Small Share	Landless Share	Landless Share	Medium Share	Big Share
n,g,w-R^2	360,72,.09	360,72,.11	360,72,.11	360,72,.09	365,73,.07	360,72,.20	360,72,.07
% Upto Small	-2.55**						
	(.96)						
% Landless		-3.50***	-3.11**	.55	-1.66	1.15*	.30
		(1.15)	(1.24)	(1.79)	(1.88)	(.66)	(.53)
% Small		-3.25***	-3.08***	-.48	-1.71	.90*	.21
		(.93)	(1.02)	(1.57)	(1.52)	(.55)	(.43)
% Medium		-4.98*	-4.20?		-10.83**	1.44	.99
		(2.79)	(2.90)		(4.55)	(1.55)	(1.23)
% Land Small	1.25**	1.05**	1.04*	-.08	-.98	-.45?	-.02
	(.51)	(.51)	(.54)	(.84)	(.84)	(.29)	(.23)
% Land Big	-.95	-.93	-1.00	-1.03	-1.41	.87**	-.48?
	(.76)	(.77)	(.79)	(1.29)	(1.25)	(.42)	(.33)
Illiteracy rate	-.70	-.81?	-.81?	-.36	-.77	.25	.31?
among poor	(.55)	(.54)	(.55)	(.90)	(.88)	(.29)	(.23)
% Low Caste	-.35	-.56	-.51	.32	.57	.42	-.46
	(.71)	(.88)	(.90)	(1.46)	(1.44)	(.48)	(.38)
Predicted Credit	-65e-5	57e-5	38e-5	-27e-4	44e-6	15e-4?	15e-4*
per hh in vill	(180e-5)	(191e-5)	(193e-5)	(29e-4)	(6e-5)	(10e-4)	(8e-4)
Relative Yield	89e-5	15e-4	12e-4	-7e-4	6e-5	-7e-4	-4e-4
Small Farms	(175e-5)	(17e-4)	(17e-4)	(28e-4)	(3e-4)	(9e-4)	(7e-4)
% Left GP	-.14		-.15	.10		.04	.04
	(.24)		(.24)	(.40)		(.13)	(.10)
% Left GP sq.	.07		.08	-.19		-.02	5e-4
	(.20)		(.20)	(.33)		(.11)	(.09)
% Left ZP	.01		-.08	.73		-1.40**	.30
	(1.10)		(1.10)	(1.80)		(.59)	(.47)
% Left ZP sq	.02		.06	-.02		.91**	-.18
	(.72)		(.72)	(1.17)		(.38)	(.30)

All regressions include number of households, rainfall, percent nonagricultural occupation, wage rate; village and timeblock dummies, and a constant term.

***, **, *, ? denote significant at 1,5,10,20% respectively

TABLE 5.1: MINIKIT DESCRIPTIVE STATISTICS SAMPLE VILLAGE AVERAGES					
	1979–83	1984–88	1989–93	1994–98	1979–98
Number of Village-Years in Sample	73	84	94	97	358
Number of Village Years with positive kits	61	73	85	89	308
Number of Village Years with positive rice kits	24	45	29	16	114
Number of Village Years with positive potato/oilseed kits	38	36	37	57	168
Average no. kits per hh in villages receiving kits	.19	.17	.12	.12	.14
Average no. rice kits per hh in villages receiving rice kits	.15	.08	.04	.02	.08
Average no. potato/oilseed kits per hh in villages receiving potato/oilseed kits	.15	.08	.04	.02	.08
Upto Small: share of all kits	.91	.84	.87	.87	.87
Upto Small: share of rice-seed kits					.87
Upto Small: share of potato&oilseed kits					.85
Upto Small: Ratio of all kits share to Demographic Weight	.98	.91	.92	.89	.92
Upto Small: Ratio of all kits share to Land Share	1.43	1.38	1.32	1.17	1.33

TABLE 5.2: INTERVILLAGE MINIKIT ALLOCATION

	All Kits Tobit,DFE	All Kits Tobit,DFE	All Kits OLS,VFE	Rice Kits Tobit,DFE	Rice Kits OLS,VFE	POseed Kits Tobit,DFE	POseed Kits OLS,VFE
n,g,w-R^2	268,73,	262,73,	244,73,.26	262,73,	90,54,.73	262,73,	132,58,.36
% Landless	-.55?	-.70**	-2.53***	-.25	-.97	-.50**	-1.47**
	(.33)	(.34)	(.96)	(.25)	(1.89)	(.19)	(.60)
% Small	-.67*	-.88**	-1.82**	-.26	-1.02	-.69***	-1.29**
	(.35)	(.35)	(.89)	(.27)	(1.55)	(.20)	(.58)
% Medium	-.22	.40	1.17	.98	6.82*	.49?	-3.27*
	(.55)	(.65)	(1.95)	(.50)	(3.72)	(.37)	(1.72)
% Land Small	-.04	.17*	.41	.13*	.25	.20***	.07
	(.07)	(.10)	(.32)	(.08)	(.27)	(.06)	(.18)
% Land Big	-.13*	.06	.08	-.07	-.64	.11*	-.01
	(.07)	(.10)	(.22)	(.08)	(.64)	(.06)	(.10)
Illiteracy rate	-.01	.03	.49*	.06	.26	-.03	.11
among poor	(.07)	(.07)	(.27)	(.06)	(.38)	(.04)	(.14)
% Low Caste	.00	-.02	-1.06*	-.02	-1.89**	-.04**	-.12
	(.04)	(.04)	(.63)	(.03)	(.83)	(.02)	(.43)
District Kit	.10**	.08*	.064	.12**	-.16*	.05?	-.04
per hh average	(.04)	(.04)	(.05)	(.05)	(.09)	(.03)	(.04)
District Kit	-.01	-.00	-.006	-.03**	.04?	-.01	.01
average Sq.	(.01)	(.01)	(.018)	(.01)	(.02)	(.01)	(.02)
Intravillage			.01		-.10?		.002
Targeting			(.08)		(.06)		(.031)
% Left GP		-.33**	-.32?	-.18?		-.30***	-.72***
		(.14)	(.20)	(.11)		(.08)	(.14)
% Left GP sq.		.33***	.32*	.24**		.24***	.52***
		(.12)	(.17)	(.09)		(.07)	(.12)
% Left ZP		-.11	.71	-.19		.09	.62
		(.77)	(.87)	(.58)		(.46)	(.57)
% Left ZP sq		.06	-.44	.10		-.02	-.37
		(.50)	(.57)	(.37)		(.29)	(.36)

All regressions include number of households, rainfall, percent nonagricultural occupation, wage rate, average farm yield; timeblock dummies, and a constant term.

***, **, *, ? denote significant at 1,5,10,20% respectively

TABLE 5.3: INTRAVILLAGE MINIKIT ALLOCATION			
	All Kits	All Kits	Potato-Oilseed Kits
n,g,w-R^2	244, 74, .06	240, 73, .09	130,58, .27
% HH Landless	-1.22?	-.93	-1.40
	(.87)	(.90)	(2.83)
% HH Small	-.93	-.62	.39
	(.79)	(.83)	(2.77)
% HH Medium	.91	.99	.39
	(1.79)	(1.84)	(7.83)
Land Share Small	.39?	.34	-1.45*
	(.28)	(.30)	(.85)
Land Share Big	.20	.21	.06
	(.20)	(.20)	(.48)
% Illiterate among poor	-.00	.01	-.33
	(.24)	(.25)	(.71)
% HH Low Caste	.16	.19	4.16**
	(.56)	(.57)	(1.89)
Predicted Kits/hh	.09	.06	1.63
received	(.16)	(.17)	(1.82)
Relative Yield	5e-4	2e-4	5e-4
small farms	(13e-4)	(13e-4)	(28e-4)
% Left GP		.23	-.12
		(.19)	(.71)
% Left GP sq.		-.22?	.43
		(.16)	(.56)
% Left ZP		.39	3.45
		(.82)	(2.70)
% Left ZP sq		-.35	-2.39?
		(.53)	(1.71)
All regressions include number of households, rainfall, percent nonagricultural occupation, wage rate, farm yield; village, timeblock dummies, and a constant term. ***, **, *, ? denote significant at 1,5,10,20% respectively			

TABLE 6.1: INTERVILLAGE ALLOCATION OF EMPLOYMENT GRANTS		
	Village FE	Village FE
n,g, Within-R^2	236,71, .31	224,71,.32
% Landless	-2177.37	-1310.61
	(1847.66)	(2118.90)
% Small	-2317.91	-1338.52
	(1899.46)	(2200.13)
% Medium	3863.87	3260.07
	(4107.22)	(4608.73)
% Poor Illiterate	-652.65	-1025.28?
	(689.77)	(760.16)
% Land Small	1062.08	716.33
	(847.13)	(952.86)
% Land Big	-299.11	-232.94
	(540.17)	(565.38)
% Low Caste	-129.71	-115.88
	(1274.31)	(1391.46)
District Average	.11?	.12?
Grant/hh	(.07)	(.07)
District Average	-23e-6?	-27e-6*
Grant/hh Sq.	(14e-6)	(15e-6)
Predicted Wage	-7.08	-7.77
	(28.40)	(35.88)
Farm Yield	.03*	.03?
	(.01)	(.02)
% Left GP		-277.78
		(594.31)
% Left GP sq.		161.54
		(457.49)
% Left ZP		-882.30
		(2035.76)
% Left ZP sq		471.85
		(1313.56)
Dependent variable: employment grants received per household, at 1980 prices All regressions include number of households, rainfall, percent nonagricultural occupation, timeblock dummies, and a constant term. ***, **, *, ? denote significant at 1,5,10,20% respectively		

TABLE 6.2: WAGE RATE REGRESSION	
	Village FE
n,g, Within-R^2	305,76,.75
% Landless	-12.35**
	(5.85)
% Small	-16.65***
	(6.26)
% Medium	-11.78
	(13.27)
% Poor Illiterate	5.69***
	(1.67)
% Land Small	5.39**
	(2.39)
% Land Big	-5.57
	(4.64)
% Low Caste	-5.22
	(4.38)
Cost of Living Index	.63***
	(.12)
Land Household Ratio	4.76***
	(1.28)
Land Household Ratio Sq.	-.65***
	(.19)
% Nonagricultural Occupation	4.47**
	(1.96)
Rainfall	-15e-5
	(17e-5)
Rainfall Sq	2e-8
	(2e-8)
Rainfall* North Bengal dummy	55e-5
	(60e-5)
Rainfall Sq.*North Bengal dummy	-1.5e-7
	(1.6e-7)
Dependent variable: wage rate for hired male labour, average across farms in a given year All regressions include year dummies and a constant term. ***, **, *, ? denote significant at 1,5,10,20% respectively	

TABLE 6.3: EMPLOYMENT GENERATED FROM EMPLOYMENT GRANTS

	Tobit District FE	Tobit District FE
n	228	217
% Landless	-.11	-.12
	(.25)	(.19)
% Small	-.14	-.14
	(.25)	(.19)
% Medium	-.13	.06
	(.18)	(.13)
% Poor Illiterate	-.05	-.06?
	(.04)	(.03)
% Land Small	-.005	.02
	(.040)	(.03)
% Land Big	.02	.01
	(.04)	(.03)
% Low Caste	-.009	-25e-5
	(.024)	(.01)
Predicted Grant/hh	-16e-6	-33e-6
	(40e-6)	(31e-6)
Predicted Wage	13e-4	14e-4
	(23e-4)	(17e-4)
Farm Yield	-9e-7	-1.6e-6
	(2e-6)	(1.3e-6)
Rainfall	-44e-6***	-15e-6?
	(15e-6)	(11e-6)
Rainfall Sq.	6e-9***	1.7e-9
	(2e-9)	(1.7e-9)
% Left GP		.084**
		(.036)
% Left GP sq.		-.060**
		(.030)
% Left ZP		-.349**
		(.173)
% Left ZP sq		.193*
		(.113)

Dependent variable: mandays employment per rupee of employment grant received at 1980 prices
All regressions include number of households, interaction of rainfall with
North Bengal dummy, % in nonagricultural occupation, timeblock dummies, and a constant term.
***, **, *, ? denote significant at 1,5,10,20% respectively

TABLE 6.4: ALLOCATION OF PANCHAYAT EXPENDITURE TO ROADS AND IRRIGATION		
	Roads	Irrigation
	Tobit District FE	Tobit District FE
n	143	143
% Landless	3.42	-.31
	(3.07)	(2.62)
% Small	3.20	-.29
	(3.15)	(2.60)
% Medium	-2.03	-2.06?
	(1.78)	(1.39)
% Poor Illiterate	.04	.05
	(.55)	(.45)
% Land Small	-.37	-.09
	(.42)	(.33)
% Land Big	.12	-.26
	(.44)	(.34)
% Low Caste	-.50	.21
	(.024)	(.21)
Predicted Grant/hh	42e-5	5e-6
	(50e-5)	(40e-6)
Predicted Wage	.019	-76e-4
	(.019)	(145e-4)
Farm Yield	30e-6*	33e-6**
	(17e-6)	(14e-6)
Rainfall	-38e-6	16e-5
	(171e-6)	(14e-5)
Rainfall Sq.	2e-8	-3e-8?
	(2e-8)	(2e-8)
% Left GP	-.19	.29
	(.43)	(.33)
% Left GP sq.	-.02	-.14
	(.35)	(.27)
% Left ZP	5.59**	-.10
	(2.38)	(1.75)
% Left ZP sq	-3.63**	.19
	(1.52)	(1.11)
Dependent variables: proportion of GP expenditure allocated to roads and irrigation resp. All regressions include number of households, interaction of rainfall with North Bengal dummy, % in nonagricultural occupation, timeblock dummies, and a constant term.		

TABLE 7.1: INTERVILLAGE ALLOCATION OF FISCAL GRANTS		
	Village F.E.	Village F.E.
n, g, within-R^2	236, 71,.25	224,71,.29
% Landless	-7058.19**	-6320.30**
	(2758.70)	(3004.85)
% Small	-6947.50**	-6176.28**
	(2781.56)	(3061.81)
% Medium	563.77	-1224.15
	(6257.99)	(6630.59)
% Poor Illiterate	-849.22	-1268.79
	(1039.46)	(1083.56)
% Land Small	953.92	48.32
	(1286.21)	(1372.96)
% Land Big	-454.36	-481.29
	(780.18)	(767.65)
% Low Caste	728.75	-462.27
	(1934.60)	(2009.16)
Rainfall	-.03	-.02
	(.05)	(.05)
District Average	.01	.02
Grant/HH	(.06)	(.06)
Distt. Average Sq.	6e-6	2e-6
	(8e-6)	(8e-6)
% Left GP		-609.82
		(852.09)
% Left GP sq.		157.90
		(659.39)
% Left ZP		2530.02
		(2846.44)
% Left ZP sq		-2256.34
		(1853.16)
Dependent variable: fiscal grants received (at 1980 prices) per household Both regressions include a constant term, number of households, percent nonagri. occup, timeblock dummies and a constant term. ***, **, *, ? denote significant at 1,5,10,20% respectively		

TABLE 7.2: LOCAL REVENUE RAISING EFFORT					
	Local Tax per hh Vill FE	Local Tax per hh Vill FE	Other Local Income per hh Vill FE	Total Local Revenue per hh Vill FE	Total Local Revenue as % of all revenues Vill FE
n,g, w-R^2	237,71,.09	225,71,.10	224,71,.25	236,71,.16	217,71,.11
% Landless	435.21?	124.27	1786.23	1304.93	1.26
	(308.52)	(552.02)	(1356.07)	(1335.82)	(1.34)
% Small	286.73	-80.61	2351.43*	1629.11	1.28
	(311.69)	(574.66)	(1411.67)	(1386.20)	(1.35)
% Medium	877.60	1128.40	-382.74	1191.43	1.91
	(710.61)	(790.52)	(1941.93)	(1995.07)	(3.12)
% Poor Illiterate	165.17?	-26.17	444.12	580.05	.54
	(116.17)	(162.71)	(399.72)	(410.33)	(.53)
% Land Small	-1.14	76.09	-391.21	-88.36	-.09
	(144.53)	(168.52)	(413.97)	(421.76)	(.63)
% Land Big	5.62	-53.88	-365.20	-406.36?	-.66
	(88.36)	(97.64)	(239.87)	(263.94)	(.38)
Predicted Grants		-.08	.30*	.17	
per hh		(.07)	(.18)	(.18)	
Farm Yield	.001	-11e-5	.02**	.02**	2e-5*
	(.003)	(35e-4)	(.008)	(.009)	(1e-5)
Predicted Wage	-.45	-.73	20.04?	10.74	47e-4
	(4.85)	(6.14)	(15.09)	(13.77)	(.02)
% Left GP		61.73	-346.11?		
		(101.55)	(249.47)		
% Left GP sq.		-62.12	280.65?		
		(78.60)	(193.09)		
% Left ZP		18.89	491.89		
		(339.01)	(832.80)		
% Left ZP sq		-3.08	-249.38		
		(220.47)	(541.59)		

Taxes include taxes and fees; all revenues expressed in 1980 prices

All regressions include number of households, rainfall, percent nonagricultural occupation, percent low caste, timeblock dummies and a constant term.

***, **, *, ? denote significant at 1,5,10,20% respectively

TABLE 7.3: ADMINISTRATIVE COSTS AND SALARIES AS PROPORTION OF TOTAL EXPENDITURES		
	Village F.E.	Village F.E.
n, g, within-R^2	236, 71,.31	224,71,.32
% Landless	-.28	.29
	(1.28)	(1.48)
% Small	-.56	.13
	(1.33)	(1.54)
% Medium	-3.65*	-2.55
	(1.91)	(2.12)
% Poor Illiterate	.17	.39
	(.39)	(.43)
% Land Small	-.48	-.36
	(.40)	(.45)
% Land Big	.73***	.79***
	(.25)	(.26)
% Low Caste	.28	.64
	(.58)	(.62)
Rainfall	27e-6?	17e-6
	(17e-6)	(21e-6)
Predicted	.-94e-6	-22e-4
Grant/HH	(175e-6)	(165e-4)
% Left GP		-.19
		(.27)
% Left GP sq.		.11
		(.21)
% Left ZP		-.41
		(.91)
% Left ZP sq		.28
		(.59)
Both regressions include a constant term, number of households, predicted wage percent nonagri. occup, timeblock dummies and a constant term. ***, **, *, ? denote significant at 1,5,10,20% respectively		