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Political Economy of Infrastructure Spending in India

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Abstract

This paper examines a puzzle in the political economy of infrastructure in India—the co-existence of relatively low shares of capital spending in public budgets alongside evidence of large demand for village infrastructure from poor voters. It argues that this pattern is due to infrastructure projects being used at the margin for political rent-seeking, while spending on employment and welfare transfers are the preferred vehicles to win votes for re-election. New suggestive evidence on the variation of public spending composition across states, and within states over time is offered that is consistent with this argument. This evidence underscores a growing argument in the development literature that the level and composition of public spending *per se* may not be sufficient metrics to assess the quality of public goods policies—greater infrastructure spending in some contexts may go to political rents rather than to the actual delivery of broad public goods for growth and poverty reduction.

Political Economy of Infrastructure Spending in India

Stuti Khemani[*]

Introduction

This paper poses and examines a significant puzzle in the political economy of infrastructure in India—the co-existence of relatively low shares of capital spending in public budgets alongside evidence of large demand from poor voters. Several separate household surveys in different states provide systematic empirical support for the conventional political wisdom that *bijli, sadak,* and *pani* (electricity, road, and water) rank at the top of voter demands, and dominate electoral rhetoric. Yet, across the major states of India, public spending on capital works has barely averaged 13 percent of total spending (excluding debt servicing and interest payments), in contrast to over 21 percent on recurrent education expenses.[1] Education, however, is cited far below infrastructure on citizen rankings of priorities for public action.[2]

The argument offered here to explain this puzzle is that public infrastructure projects are particularly suited to political rent extraction, the benefits from which are traded-off against the electoral gains from delivering infrastructure as a broader public good.[3] At the same time, targeted provision of employment and welfare transfers to the poor can be more effective in ensuring their favorable vote, while the vote returns to delivering infrastructure as a public good can be more uncertain (relative to the provision of targeted benefits). Infrastructure provision,

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[1] Author's calculations using detailed data on state finances published in annual issues of the Reserve Bank of India Bulletin, for the period 1980-2005.

[2] Data collected by Besley et al (2004) through a survey of more than 5000 rural households in 3 states in the south—Andhra Pradesh, Karnataka, and Tamil Nadu—shows the overwhelming majority of respondents (more than 89 percent) citing either water works or general village infrastructure among the top problems with public services in their village; in contrast, education is mentioned by less than 6 percent of the households. Rural household surveys in the north Indian states of Uttar Pradesh by Banerjee et al (2007), and in Rajasthan and West Bengal by Chattopadhyay and Duflo (2004) similarly reveal roads and water as the top ranked priorities for public action, with education trailing behind.

[3] This chapter does not distinguish between political rent-seeking as private kick-backs for political agents from projects (corruption), versus rent-seeking through the servicing of elite economic interests (elite capture), from which political agents may either benefit directly if they overlap as the economic elite, or through kick-backs or campaign finance. Both types of rent-seeking would lead to policy choices that deviate from what a benevolent and utilitarian social planner would adopt.

even when swing voters at large demand it, may therefore be too costly a means to win votes—both because if it is provided as a broad public good to win broad electoral support, it implies giving-up large rents; and because there is uncertainty in whether swing voters at large will indeed vote for the incumbent after receiving the broad public good.

The first testable implication of this argument is that when institutions that constrain rent-seeking are weaker, the share of infrastructure in public spending should be higher. Second, when re-election requires winning votes from more voters (such as when more voters turn out at the polls, or when political competition is more vigorous), the share of infrastructure should fall, in favor of those types of public spending that deliver jobs and transfers. Some new evidence, albeit largely suggestive rather than conclusive, is offered on the variation of public spending composition across states, and within states over time, that are consistent with this argument. The share of capital spending is estimated to be greatest in states that are reputed to have poorer quality governance compared to others, and declines within these states when they experience greater voter participation. In contrast, the share of spending on social programs, including education as its largest component, designed to provide employment and welfare transfers to the poor, is lower in weaker-governance states, and increases in all states with increases in voter turnout.[4]

The responsiveness of changes in budget composition, away from capital projects and towards recurring benefits in social programs, with increasing voter turnout is significantly higher in the states characterized as having weaker governance. This greater interaction effect with voter turnout is argued to be due to the greater room at the margin in weaker governance

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[4] Education spending reportedly consists largely of salaries to teachers on the public payroll, and teacher recruitment by states has been argued to serve electoral purposes (Kingdon and Muzammil, 2001; Beteille, 2009; Chhibber and Nooruddin, 2004).

environments for using public spending to seek votes instead of rents. Weaker governance states may also be more effective at targeting recurrent spending on salaries and welfare transfers to "buy" votes, that is, to enforce a *quid pro quo* between receiving a targeted benefit and voting. We find further evidence suggestive of this in that the share of spending on state administration (consisting largely of the salaries of state employees in public administration) increases with increasing turnout in states characterized as having poor governance, while the estimated correlation is in the opposite direction in other states (administrative spending falls with increasing turnout, although the correlation is not statistically significant).

In the absence of multi-year panel data on objective indicators of governance at the state-level, there are substantial limits to the extent to which this characterization can be defended. However, we experimented with a number of other state groupings to see whether similar differences in the correlation with voter turnout would emerge. We found no other grouping of states within which the correlation with voter turnout is so systematically different, other than the grouping of all or some sub-set of five states—Bihar, Madhya Pradesh, Orissa, Rajasthan, and Uttar Pradesh—characterized as relatively weaker governance states in the Indian literature. The difference in budget composition and its response to voter turnout in these states is robust to including measures of state income, population, poverty and inequality.

This evidence across the Indian states, and its interpretation offered here, is consistent with recent cross-country research which finds greater public investment spending in countries with lower ratings for governance, political checks and balances and electoral competition (Keefer and Knack, 2007). They argue that the more plausible explanation for this pattern of variation is that pubic investment projects are vehicles for rent-seeking in weak governance environments. Other recent work on public expenditure composition in the Indian states has

found correlations consistent with greater political competition reducing spending on capital projects and increasing social and education spending. Saez and Sinha (2009) find that education spending in the Indian states is greater when there are greater numbers of political parties competing for office. Teitelbaum and Thachil (2010) find the opposite effect of the number of competing political parties on economic services, consisting largely of capital spending.

The pattern of findings that increased pressures to seek and win votes (because of greater turnout, or greater political competition) are associated with a shift towards recurrent spending on social programs that provide jobs and welfare benefits are consistent with stories of populist pressures on public policies in India, for redistribution at the expense of managing resources for broad public goods (Acharya, 2004). This has general implications for constraints to public provision of, or public facilitation of private investments in infrastructure as a broader public good. The results presented here are also consistent with other arguments and evidence in the development literature that public spending levels or composition *per se* may not be adequate metrics to assess the quality of public goods policies, because spending may be allocated to serve purposes other than avowed; the examples suggested by the findings of this paper, that echo previous work, are that infrastructure projects may be used as vehicles for rent seeking, and education spending may be used to deliver jobs rather than learning (World Development Report, 2004; Filmer et al, 2000; Keefer and Khemani, 2004, 2005).

The following sections provide more details on the evidence summarized above. After presenting the evidence, the paper discusses its interpretation in the context of models of political rent-seeking and populist spending to win votes, at the expense of broad public goods. It then explores new ideas for how greater political participation by the poor in India may become an

opportunity to shift away from populist policies and improve political incentives for broad public goods.

Budget composition and household demands

Table 1 shows the summary statistics of the share of capital and recurrent social spending in the budgets of 14 major states over the period 1980-2005. On average, states allocate 13 percent of their total spending, excluding interest payments and debt servicing, to capital works, compared to 39 percent on recurrent spending on social programs including education health and welfare. The single largest category of spending is education, accounting for 21 percent of total spending. As a proportion of developmental spending on public services alone, excluding other kinds of administrative spending, capital spending accounts for 16 percent, recurrent spending on social programs for 49 percent, and within it, education accounts for 27 percent. These averages mask variation across states and over time, which this paper will explore in the next section.

This distance between the share of capital and social spending in state budgets is at odds with household survey evidence on reported citizen prioritization of village problems. In a large survey of over 5000 rural households in the southern Indian states of Andhra Pradesh, Karnataka, and Tamil Nadu undertaken by Besley et al (2004) between September-November 2002, the data show that 89 percent of respondents list water or infrastructure as among their top 3 priorities, while less than 6 percent list education.[5] These three states are at the sample average for the shares of spending devoted to capital versus social programs and education. Ban and Rao (2009) report that for a sub-sample of these households, for which they gathered transcripts of village assembly meetings with public officials, 38 percent rank water as their top priority, another 38 percent rank roads, 7 percent each rank electricity and housing, 5 percent rank health, 2 percent

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[5] I am grateful to Biju Rao for providing access to this data.

rank employment, and 1 percent rank education. Infrastructure outstrips education by several orders of magnitude for every sub-group of household respondents—landed versus landless, low versus high caste, Hindu versus Muslim, women versus men (Ban and Rao, 2009, Table 5).

Data on similar questions in household surveys in other states show the same pattern—an overwhelming number of respondents rank village infrastructure as priorities, versus very few responses ranking education (Banerjee et al, 2007, for Uttar Pradesh; Chattopadhyay and Duflo, 2004, for West Bengal). This consistency across several different surveys in several different states does not seem to be obviously driven by an accident of how the surveys were implemented and whether they primed households to respond in ways they thought the interviewers wanted (or otherwise). The Besley et al (2004) and Banerjee et al (2007) surveys, for example, asked the question on household opinion without any prompting with possible response options. The Banerjee et al (2007) survey was in fact focused on education, thereby possibly signaling to respondents an interviewer interest in education[6]. Indeed this survey seems to have found a somewhat higher number of respondents listing education among the top 3 priorities (at 13 percent). Yet, this is in sharp contrast to the 40 percent that prioritize roads, the 32 percent that prioritize water, and the 31 percent that prioritize electricity.

Of course, how households at large respond to a general question about what they see as priorities for the village, and what they evaluate when they make their personal decision to vote, may be quite separate. Nevertheless, if these are systematically different, that is, if households at large think village infrastructure is the top priority but vote on the basis of other types of benefits received from public spending, or on other issues altogether, this would be important to examine to assess political incentives for growth-promoting and poverty-reducing policies. Bardhan et al

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[6] The question on ranking village priorities featured early in the interview, however, with the education-specific questions coming afterwards.

(2008) included a secret ballot in their survey of rural households in West Bengal to examine the correlates of voting for the incumbent Left Front political parties. They find that an individual household's vote for the incumbent party is significantly correlated only with private and recurring benefits received, in the form of personal help in times of need or benefits from welfare schemes, and not with the availability of local infrastructure. This suggests that the vote-returns from providing infrastructure broadly as a public good can be less than the vote-returns from providing privately targeted recurring benefits. We return to discuss this issue after presenting the results on how budget composition across states varies with voter turnout in state assembly elections.

If the share of infrastructure spending is negatively correlated with voter turnout, falling when turnout increases, this would suggest that infrastructure provision may not be as effective as other types of spending at winning votes. If the share of spending on social programs that provide recurrent and private benefits like welfare transfers and salaries is positively correlated with turnout, increasing when turnout increases, these types of government programs may be more effective at winning votes.

Variation of budget composition across states over time

Political agents with decision-making power over budget composition, however, might not be motivated to satisfy voter demands and win re-election alone, but also to use the powers available to them to extract private benefits or rents for themselves. Persson and Tabellini (2000) provide a review of models of rent-seeking, some of which show that when voters are too demanding politicians might make their policy choices solely on the basis of what allows them to extract more private benefits for themselves. The cross-country analysis of Keefer and Knack

(2007) suggests that public investment spending may be particularly instrumental for rent-extraction and therefore higher in countries with weak governance.

Some states in India have a long-standing reputation of weaker institutions to limit rent-seeking compared to other states. Specifically, the socially and economically lagging states in the north of India –Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh—are described as having weaker governance than others among the 14 major states (Ahluwalia, 2000; Acharya, 2004; Subramanian, 2007).[7] Four of them—Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh—were lumped together famously by an acronym of their first letters, BIMARU, which means "prone to illness" for having the poorest demographic outcomes among all states (Ahluwalia, 2000). In an examination of growth performance across the major states before and after the economic reforms of the late 1980s and early 1990s, Ahluwalia (2000) finds that Bihar, Uttar Pradesh and Orissa exhibit striking growth decelerations after reforms. This suggests that there may be some basis to the reputation of weak governance that these states suffer from.[8]

This study will examine over longer periods, 1960-2005, whether these states on average have systematically higher shares of capital spending, and whether voter turnout within these states has differential effects on budget composition compared to turnout in other states.[9]

Table 2 reports the state fixed effects, α_i, in the following regression of the variation in budget composition with variation in voter turnout.

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[7] The 14 major states are Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal.

[8] In contrast, and contrary to their lumping with lagging states, Madhya Pradesh and Rajasthan have been performing well in recent years after economic reforms (Ahluwalia, 2000).

[9] The data on budget composition is compiled from annual issues of the Reserve Bank of Bulletin devoted to finances of state governments. The data on voter turnout in state assembly elections is compiled from Butler, Lahiri, and Roy (1995) and from the website of the Election Commission of India.

$$ShareSpendingY_{it} = \alpha_i + \varepsilon_{it} + \beta_1 \, LowerGovernanceStates*Turnout_{it}$$

$$+ \ \beta_2 \, (1\text{-}LowerGovernanceStates)*Turnout_{it} \qquad (1)$$

where *ShareSpendingY$_{it}$* is the share of spending on category *Y* in state *i* in year *t*, in the total spending of state governments categorized as "developmental" spending. This is spending on all programs that provide front-line services to the population, and exclude spending on the administration of government, fiscal services and interest payments.[10] *LowerGovernanceStates* is an indicator variable which equals 1 for the states of Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh, and 0 otherwise. *Turnout* is the percentage of eligible voting population that turns out to vote in the most recent past state assembly election.

The first column of Table 2 reports the results for the share of capital spending between 1960 and 2005, and the second column for the share of recurrent spending on social programs between 1972 and 2005, all the years for which data is available on these spending categories. The second pair of columns reports the results for the more recent years, 1980-2005. Compared to the excluded state of Kerala, the fixed effects for the five states—Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh—are substantially larger for capital spending and substantially smaller for social spending compared to the coefficients for other states. The correlation of budget composition with voter turnout is also significantly different among these states. Greater voter turnout in these states is correlated with a shift away from capital spending towards recurrent spending on social programs. Greater voter turnout in the other states is also correlated with a shift towards recurrent spending on social programs, but smaller in size than the correlation in the five states.

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[10] The pattern of results is identical when the shares are calculated over the sum of developmental and non-developmental spending, excluding interest payments and debt servicing.

In Table 3 we examine whether budget composition in these states continues to be systematically different even after including in the specifications available measures of state income, population, poverty and inequality. The first two columns of Table 2 include controls for state population, per capita domestic product in constant prices, and the share of agriculture in state income, variables for which data is available from 1980-2003.[11] Even after the inclusion of these state income variables, the variation in the share of capital spending across states and within states, with changes in voter turnout, remains as above.

The second two columns of Table 3 include measures of rural poverty and inequality within states, for which annual data is available from 1960 to 1992.[12] After controlling for poverty and inequality, the share of capital spending in the five states characterized as having weaker governance is higher than in the other states at the 10 percent level of significance; greater turnout within these states continues to be associated with a greater shift away from capital spending than in other states. Greater turnout is associated with a shift towards recurrent social spending in all states, but this turnout correlation is not statistically different between the two groups of states when income, poverty, and inequality are included as controls. This could be because poverty and inequality explain part of the difference between the two groups of states in the correlation between turnout and budget composition, or simply because the sample available for this estimation is smaller.[13]

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[11] The state income and population series is taken from the data available at the World Bank's Development Data Pltaform, and is reported to be compiled from the statistics provided by the Central Statistical Office in India.

[12] The rural poverty and inequality data, and the state income and population data for the period 1960-1992 is taken from the Indian states poverty database compiled by the World Bank's development research group (Ozler et al, 1996).

[13] Data on spending in the category of social programs is available from 1972 onwards, and on poverty and inequality only until 1992. Hence, for this category of spending estimates including poverty and inequality cover only the period 1972-1992.

In the absence of panel data on objective indicators of governance comparable across states, and within states over time, we are limited in the extent to which these differences across states in the results discussed above can be attributed to differences in governance. We tried something akin to falsification tests by testing whether various other groupings of states, other than the five that are historically described as having weaker governance, would yield similar differences in the correlation of voter turnout with budget composition. We found no other grouping of states where voter turnout has a systematically bigger correlation with budget composition as it does in the five states described above.[14]

We examine variation in the shares of further disaggregated categories of spending to probe what kinds of spending appear to be responding to increases in voter turnout. Two narrower categories, in particular, are interesting to examine whether the spending shifts towards providing broader public goods versus private welfare transfers—one, on education which is the single largest category of social spending and indeed of all developmental spending; and two, on the administration of state governments which largely consists of salaries of government employees.

Education spending, however, also largely consists of salaries to government employees—teachers in public schools (Kingdon and Muzammil, 2001). Greater shares of spending on education could therefore be interpreted in different ways—as increasing allocation to the broad public good of education, or to the provision of public sector jobs through teacher recruitment. Indeed, new political economy research in the education sector in India suggests that teacher jobs are protected as political patronage, and teachers' accountability, for showing-up at the job and teaching, is very poor (Kingdon and Muzammil, 2001; Beteille, 2009; Banerjee

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[14] The results are also robust to dropping one state at a time from the sample. That is, no one state is driving the pattern of reported correlations.

et al, 2010). Chhibber and Nooruddin (2004) have described recruitment of additional teachers in Uttar Pradesh as an electoral strategy to win votes through job provision.

Table 4 shows the correlation of voter turnout with share of total non-interest spending allocated to education and state administration. Voter turnout is correlated with increasing education spending in all states. However, in the case of the share of spending on state administration, the correlation is systematically different between the two groups of states. The point estimates suggest that in weaker governance states, share of spending on state administration increases with increasing voter turnout, while in other states the share of administrative spending falls with increasing voter participation. The correlation in weaker governance states of increasing spending on state administration with increasing voter turnout is consistent with weaker governance states relying more on political patronage strategies of jobs provision to win votes rather than provision of broad public goods. However, the correlation of turnout with share of administrative spending is not statistically significant when poverty and inequality are included as controls, which could be because poverty and/or inequality simultaneously explain turnout and administrative spending, or because of loss in efficiency with lower sample size.

Discussion

The interpretation of the results presented above that this paper offers is that comparatively weaker governance institutions in the socially and economically lagging states enable political agents to use public investment spending for private rent-seeking. This interpretation extends to the differential correlation of voter turnout with budget composition in the states characterized as having weaker governance. When faced with increasing electoral pressures, politicians in weaker governance states have more discretionary room to shift

resources to recurring private benefits from government programs that are more effective at winning votes. The weaker institutions may also enable them to target benefits more effectively to win or buy votes.

One alternate interpretation of the results is that poorer states have lower private savings being allocated to investment and therefore governments in these states need to allocate a higher share of public resources to investment spending to achieve growth. However, this interpretation of growth promoting or productive public investment is inconsistent with the poor or indifferent growth performance of these states for most of the years of their existence. As indicated above, even though Ahluwalia (2000) finds that two of these states—Madhya Pradesh and Rajasthan— improved their growth performance after the liberalization reforms in the 1990s, this performance improvement is recent, and quite different from the other three—Bihar, Uttar Pradesh, and Orissa—which were especially disappointing. This alternate interpretation also does not lend itself easily to explaining the negative correlation within these states of voter turnout and public investment spending.

Other interpretations could focus on whether or how underlying changes in poverty, inequality, or human and social development, that are not sufficiently captured in the empirical specification, may drive both voter participation and budget composition and account for the correlations observed in this paper. The two groups of states distinguished here on the basis of reputation in governance are also distinct with regard to other socio-economic characteristics— the lower governance group has higher poverty and inequality, lower human development and social or political cohesion, on average, than the other group.[15] The lower governance group also

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[15] A recent argument by Singh (2010) focuses on social and political cohesiveness, or a stronger shared sub-national identity, as the explanation for different levels of social and human development in Kerala and Tamil Nadu, contrasted against Uttar Pradesh and Rajasthan.

has substantially lower voter turnout—over a long period of regular elections from 1960 to 2005, the mean and median turnout in this group is around 52 percent, contrasted against 66 percent for the higher governance group.

Alternate explanations focusing on underlying determinants of poverty, inequality, and social or political institutions would therefore need a theory of why these factors would be correlated with higher share of capital spending, without growth (as discussed in the previous paragraph), if not through the channel of rent-seeking as argued in this paper. That is, even if the correlation between voter participation and budget composition is viewed as the outcome of underlying socio-economic conditions that contribute simultaneously to reduced turnout and greater share of capital spending, the most plausible channel for such correlation is the use of infrastructure spending for rent-seeking by political agents rather than the actual provision of broad public goods for citizens at large.

Perhaps the most puzzling issue presented by the observed negative correlation between voter turnout and share of capital spending is its inconsistency with household survey evidence on reported prioritization of capital infrastructure—roads, water, electricity—by an overwhelming majority of respondents.[16] New experimental evidence on the nuances of voting behavior provides some answers. Finan and Schechter (2010) explore the role of social preferences such as reciprocity, the psychological pressure to return a favor received from someone, in shaping electoral strategies of vote buying. Combining experimental games that measure the strength of reciprocal feelings among individuals with survey data on vote-buying

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[16] Reverse causation, that greater relative allocation to capital spending would contribute to lower turnout, also does not seem plausible given this survey evidence—if voters care more about capital infrastructure relative to social sectors, greater government activity in their preferred sector may be expected to increase their participation. Unless, of course, they are more likely to be satisfied with government and greater satisfaction keeps them away from the polls. However, there is nothing in the literature or data to suggest that actual access to infrastructure in the low governance states is of the quality that would support such an argument.

offers made to individuals in the country of Paraguay, they find that political agents target vote buying to individuals with greater feelings of reciprocity. A large literature on get-out-the-vote campaigns in the US finds that personal or direct contact with households are the most persuasive in getting them to vote on election day, compared to other strategies that are more broadly targeted, such as distributing pamphlets (DellaVigna and Gentzkow, 2009).

This argument might logically extend to comparing the marginal vote-returns from spending on broad public goods versus privately targeted transfers—broadly provided public goods might not generate the same strength of reciprocal feelings in individual voters as do private, one-to-one transfers. Even when an incumbent government provides broad public goods, voters that are targeted with private benefits from a rival party might still vote against the incumbent. Political studies of vote-buying, largely concentrated in Latin America and in poorer constituencies in the US, have provided theoretical arguments as well as empirical evidence that low-income or poor voters are more likely to be targeted with vote-buying offers, and more likely to comply (Harding, 2008; Stokes, 2005; Brusco et al, 2004).

Others have argued for India that since the poor live at or near subsistence levels they are more likely to reward with a vote even a small welfare transfer made directly to their household rather than broad performance in the delivery of public goods (Varshney, 2000). Their private voting action may therefore be at odds with their publicly declared preferences for public goods, such as when they answer questions about priority problems for the village. The nature of voting behavior, especially among the poor, alluded to in this literature implies that jobs and welfare transfers may be a lower risk electoral strategy in terms of the expected vote returns compared to a strategy that invests in broad public goods.

Jobs and welfare transfers may also provide larger vote returns than investments in broad public goods for lower ranges of public spending. Nooruddin and Chhibber (2008) argue that Indian state governments indeed struggle with substantial restrictions on the fiscal space available to them for discretionary public spending, and that declining fiscal space within states over time is associated with increasing electoral volatility. Providing infrastructure as a broad public good to sufficiently large numbers of voters is costly in budget terms, especially if recourse to user charges for financing is politically difficult. If prior committed government spending (such as on unionized public sector jobs accumulated over past years) reduces the amount of public resources over which new incumbents have discretion, and raising taxes is costly, populist spending on private transfers may be the dominant electoral strategy compared to the low levels of public goods that can be provided with limited fiscal resources.

Khemani and Wane (2008) provide a model of costly taxation (limitations to fiscal space) and rent-seeking political parties which predicts that when poor swing voters become too demanding, parties can give-up re-election altogether and follow predatory fiscal policies, or come together in coalition governments to continue to serve the vested interests of organized groups at the expense of benefits to (unorganized) voters at large. The section below adapts this Khemani-Wane model to the choice of spending on public goods versus private transfers to swing voters, to provide some theoretical notation for the intuition of this discussion.

The effort here is to find an explanation for the observed correlation between voter turnout and budget composition that does not hinge upon assuming different preferences for the median voter, as in the work of Ghate (2008) and Dasgupta and Kanbur (2007), for example. This is because explanations based on median voter preferences would be hard-pressed to address the challenge of the reported household survey evidence that citizens across caste and

income lines uniformly prioritize physical infrastructure over social services such as education in their demands from government. The theoretical framework below attempts to derive greater allocation to social spending with increasing voter turnout as the preferred electoral strategy of political agents whose objective is to maximize their or their group's self-interest subject to a re-election constraint.

A theoretical framework for populist fiscal policy

Consider a population with 3 groups indexed by *j*. The welfare of group *j*'s member is given by:

$$W^j(c,g) = c^j + H(g)$$

W( ) is an increasing and concave function, c^j is private consumption, and g is a general public good such as village-wide infrastructure provision. Two of these groups are economic elites, controlling different economic resources, paying taxes, and organized into political interest groups (political parties) to gain private rents from office and public spending. The third group is poor, with income normalized to zero (and hence does not pay taxes), is not organized into a political group and therefore votes solely on the basis of individual benefits received from government spending. Let the 2 elite groups organized into political parties be designated P_1, and P_2, and the third group of unorganized voters be designated as the swing voters S.[17] The size of each group is denoted by μ^j, for $j = P_1, P_2, S$.

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[17] The characterization of this group as swing voters is consistent with several different characterizations in the literature of what it means to be "swing". First, swing voters in this model are indifferent between voting for or against an incumbent government, based upon comparing the benefits of economic policy against a reservation utility (as in Persson et al; 2006). Second, swing voters in this model are not ideologically attached to political parties, and vote only the basis of evaluating general public policies of incumbent governments (as in Lindbeck and Weibull, 1987; Dixit and Londregan, 1995, 1996; and much of the political science literature). Third, some models

For $j \notin S$, $c^j = y^j - \tau + r^j$. That is, the consumption of members of political parties consists of their disposable income, the difference between initial income y^j and the income tax τ, plus a private rent r^j targeted towards group members from public resources. For $j \in S$, $y^S \equiv 0$, and $W^s = f^s + H(g)$. That is, members of the unorganized swing group do not have any income, cannot be taxed, and receive welfare only from government spending on public goods and any welfare transfers f^s targeted to their group.

Raising taxes is costly for the government. It may need to allocate resources for enforcing the payment of taxes and prevent tax evasion for instance. We assume that when the government imposes an amount τ in taxes it only collects $\theta(\tau)*\tau$ i.e. the cost associated with this level of taxation is $(1-\theta(\tau))*\tau$. The inefficiency of the tax system is captured by $\theta(\tau)$ which has the following usual properties for an inverted-U Laffer curve for tax revenues: $0 \le \theta(\tau) \le 1$, $\theta'(\tau) < 0$, and $\theta''(\tau) < 0$ for $0 \le \tau \le y^j, \forall j$. The tax rate at which revenues are maximized is given by $\tau = \tau^{\max}$. Correspondingly, the maximum amount of public good that can be provided in this economy is given by $g^{\max} = \tau^{\max}$.

The general public good g, the rents to political party members, r^j, and the private transfers to swing voters, f^s, are financed one-to-one with tax revenues, and satisfy non-negativity constraints $g \ge 0$ and $f^j \ge 0 \ \forall \ j$. The government budget constraint is therefore given by:

$$\sum_{j \notin S} \mu^j \cdot r^j + \mu^s \cdot f^s + g \leq R(\tau)$$

where $R(\tau) = \tau \cdot \theta(\tau) \cdot \sum_{j \notin S} \mu^j$ is the government's tax revenue when the tax rate is τ.

The politics. The two political parties P_1, and P_2 compete during elections to win a majority of votes, and choose the policy vector $p = [\tau, g, f^j]$. Any member of the political parties, μ^j for $j = P_1, P_2$ can be a candidate. The political party that wins office chooses policies to maximize the welfare of its members (core constituents) subject to a re-election constraint (to be derived below), in addition to the budget constraint specified in equation (2) above. The objective function of party j in government is given by:

$$\max_{\{\tau, g, f^j\}} \mu^j[y^j - \tau + r^j + H(g)] + B$$

B represents the rents or benefits (outside of fiscal policy) from holding office, which are shared equally among all members of the party. Note that swing voters and opposition party supporters do not enter the government's objective function. Any transfers to them would be determined by their role in the re-election constraint to be derived below. Political parties in this model are therefore both partisan and opportunistic. They cater to the interests of their core constituents once in office, but also choose policies to try to win elections and gain office. The core-supporters μ^j of political party j, always vote for the party to which they are attached, consistent with the party's objective of maximizing the welfare of its supporters subject to re-election and budget constraints.

The unorganized or swing voters cast their ballot for the incumbent government if their welfare under government policy, $H(g) + f^s$ is higher than or equal to a reservation utility parameter ω; otherwise they vote for the opposition. The swing voters' reservation utility parameter ω is distributed on the support $[\underline{\omega}, \overline{\omega}]$, with density f and cumulative F which are common knowledge.[18]

When the incumbent implements the policy $p = [\tau, g, f^j]$ it can expect to receive $\mu^S F(H(g) + f^s)$ of swing voters' ballots. The remaining swing voters $\mu^S(1 - F(H(g) + f^s))$ will punish the incumbent and vote for the opposition. The incumbent government party $j \in G$ therefore receives $\mu^G + \mu^S F(H(g) + f^s)$ of the votes. The reelection constraint is given by:

$$F(H(g) + f^s) > \frac{\mu^S - \Delta\mu^G}{2\mu^S} = \lambda \qquad \text{or} \qquad H(g) + f^s \geq F^{-1}(\lambda)$$

Where $\Delta\mu^G = (\mu^G - \mu^{-G})$ is the difference in size of the core constituents of the two political parties. λ is the *minimum swing votes* the incumbent government needs to win re-election.

The political distortion. In the absence of political considerations, a utilitarian social planner would solve only the public goods and taxation problem, setting all targeted transfers to zero. The public good optimization problem is therefore:

$$\max_{\{\tau, g, f^j\}_{j \in G}} H(g) + \sum_{j \notin S} \mu^j \cdot [y^j - \tau]$$

---

[18] We assume that $\underline{\omega} \geq 0$ i.e. the swing voters expect to be at least as well off as under laissez-faire with no taxation and no public goods or spending targeted to them.

subject to

$$g \leq R(\tau) = \tau \cdot \theta(\tau) \cdot \sum_{j \notin S} \mu^j , \ g \geq 0 , \text{ and } 0 \leq \tau \leq y .$$

The solution is familiar, given by: $H'(g^*) = \left(\partial[\theta(\tau) \cdot \tau]/\partial \tau\right)^{-1} = 1, \ R(\tau^*) = g^*$ The level of public goods supplied in the utilitarian optimum equates marginal social benefit of the public good to its marginal social cost of production. The utilitarian government raises just enough taxes to finance the production of the public good, spending nothing on targeted transfers to organized interest groups or individual swing voters.[19]

When political considerations are taken into account, the incumbent political party will deviate from this optimum and aim to provide targeted transfers to its core constituents, and perhaps also to some swing voters to win elections. The extent to which it is able to capture public benefits for its core supporters depends upon its prospects for gaining public office which in turn depends upon how demanding swing voters are, or the function $F(\omega)$ chosen by nature.[20]

We now derive the *preferred* levels of the tax, the public good, and targeted rents of an incumbent political party, denoted by τ^{*G}, g^{*G}, r^{*G} respectively, or the policy package incumbents would implement if their re-election constraint were ignored or not binding. A government's optimization of the welfare of its core constituents consists of a two-step

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[19] If the objective of the social planner is redistribution, to equalize welfare or to guarantee a minimum level of welfare for the poorest group, then private transfers to the poorest may emerge in equilibrium depending on the gains to welfare from public goods versus private transfers.

[20] In our model, if voters could cooperate and choose the distribution of reservation utilities (as in Persson et al. , 2000) they will set it in a way to extract the maximum amount of public good from whatever government is in place. This assumption is, however, unrealistic since it requires a high level of information. It is also inconsistent with our modeling of swing voters as unorganized, and therefore unable to coordinate. We instead consider atomistic voters who cannot communicate or cooperate. Each swing voter will then independently set her reservation utility or will be assigned one by nature.

procedure. First, it chooses the tax rate that maximizes the disposable income of its constituents to whom all tax proceeds are redistributed:[21]

$$\max_{\{\tau\}_{j\in G}} y^j - \tau + \alpha \cdot \theta(\tau)\tau \text{, where } \alpha^G = \sum_{j\notin S} \mu^j \bigg/ \mu^G \text{ .}$$

The first order condition for the above maximization, where τ^{*G} denotes the preferred tax rate, satisfies $\alpha^G \cdot [\theta'(\tau^{*G}) \cdot \tau^{*G} + \theta(\tau^{*G})] = 1$ or $R'(\tau^{*G}) = \mu^G$.

Second, the government chooses that optimal level of the public good that would be financed by its constituents alone, equating the marginal benefit and costs of the public good accruing only to its constituents, or $H'(g^{*G}) = 1/\mu^G$. Note that this level of public good is lower than the utilitarian social planner's optimum.

Finally, it redistributes the total tax revenue, net of public good spending, amongst its constituents, giving no specific transfers to the members of the opposition party or to swing voters. The government's constituents thus receive $r^{j*G} \equiv r^{*G} = [R(\tau^{*G}) - g^{*G}]/\mu^G$ as specific transfer, which gives them a consumption level of $c^{j*G} = y - \tau^{*G} + r^{*G}$, $j \in G$. The other groups not represented in the government do not receive any rents i.e. $r^{*j\notin G} \equiv 0$, and have a final consumption of $c^{*j\notin G} = y - \tau^{*G}$.[22]

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[21] The simultaneous use of inefficient transfers to and taxes on the same group was a puzzling feature of African fiscal policies highlighted in Bates' (1981) classic study of political economy. In our model, transfers are redistributive, to lower the net tax burden on the incumbent political group. Taxes across groups are uniform, the underlying rationale being to avoid additional distortions to revenue generation from economic decision-making by the rival groups.

[22] We assume throughout the paper that $R(\tau^{*G}) > g^{*G}$ $\forall j$. This assumption means that the preferred tax rate of the government generates at least enough revenue to pay for its preferred level of public good. This assumption puts an upper bound on the inefficiency of taxation. If we do not impose it, the government's optimal tax rate does not

The incumbent government can choose its preferred policy package when its preferred level of public good is sufficient to win the minimum swing votes needed for electoral victory, or $F(H(g^{*G})) \geq \lambda$. It would also choose this when re-election is entirely out of reach, which happens when swing voters are too demanding and the minimum swing votes required for victory cannot be obtained even by spending all revenues on them at the maximum tax rate τ^{max}. That is, governments anticipate defeat in an upcoming election, and implement predatory policy (their most preferred policy).

Incumbent government's constrained choice under re-election. Suppose that the distribution of reservation utilities is such that $F(H(g^{*G})) < \lambda < F(H(g^{max}))$. The government can then either increase the level of the public good or provide targeted transfers to swing voters until it receives the minimum swing votes λ. Following the discussion of voter behavior in the previous section, we explore the implications of assuming that the reservation utility parameter for the voting decision is distributed such that some swing voters can be "bought" much more cheaply with low levels of private transfers, than the vote gain from increasing public goods for everybody. That is, at the level of public good preferred by the members of the incumbent government, reallocating some resources from their private rents towards transfers to some swing voters would lead to larger marginal gains in votes received than reallocating to the public good:

$$\frac{\partial F(H(g^{*G}) + f^s)}{\partial g} < \frac{\partial F(H(g^{*G}) + f^s)}{\partial f^s} \qquad (2)$$

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change but the amount of public good provided becomes $g^{*G} = Max\{H'^{-1}(1/\mu^G), R(\tau^{*G})\}$ which may entail some rationing.

If the incumbent party chooses to seek re-election, it would provide private transfers to swing voters just up to the point where it meets the reelection constraint. The constrained optimal amount of private transfers to swing voters for a government seeking re-election is therefore given by f^{s*} where $F(H(g^{*G}) + f^{s*})) = \lambda$.

The government would attempt to finance the provision of these transfers, by diverting tax revenues collected through its preferred rate τ^{*G} from rents for its constituents. If τ^{*G} generates enough revenue to finance the vote-buying transfers then it is the rate the government would choose. However, if τ^{*G} falls short of the revenue needed to finance the vote-buying transfers necessary for reelection, the re-election constrained tax rate would have to be increased to $\hat{\tau}^{G}$ which is just necessary to finance the transfers i.e. $R(\hat{\tau}^{G}) = g^{*G} + f^{*s}$. The optimal tax rate for a government seeking re-election is thus given by: $\hat{\tau}^{*G} = Max\{\tau^{*G}, \hat{\tau}^{G}\}$.

In any event, the share of government spending towards programs that provide private transfers would increase, relative to spending on goods like infrastructure which, in the model and interpretation adopted here, either function as broad public goods, g, or vehicles for rents, r^{j}, to the organized interests that political parties serve. In this theoretical framework, the political distortion to public spending policy is "populist" in the sense that it skews resource allocation to private transfers to win votes from the least demanding of voters (with low threshold values of welfare to determine their vote), at the lowest cost to political rent extraction, and, at the expense of broad public goods that would benefit larger numbers. This characterization of populism seems consistent with what is described more informally in writings on economic prospects in India (Acharya, 2004).

Indeed, the critical assumption required to derive the result of populist policy is that voting behavior is skewed towards rewarding private transfers instead of broad public goods, the condition (2) above. Lizzeri and Persico (2004) use completely opposite assumptions, of the increasing value of the public good to pivotal voters, to explain the extension of suffrage by English elites in the mid-late 1800s. They argue and provide some evidence that in England, the increase in the value of urban public goods following the industrial revolution (public health infrastructure such as sewerage, waterworks and paved roads), led to a majority of the franchised elite pushing for reforms to extend the suffrage so that political parties would have stronger incentives to deliver these public goods. They show that following suffrage reforms, spending by municipal corporations on public health and sanitation infrastructure increased substantially. That is, a diametrically different conclusion than that provided here of shifting spending to private transfers.

Persson and Tabellini (2000) show more generally that in models of rent-seeking by politicians if voters can coordinate their voting decision through their value of a broad, indivisible public good, then they can discipline the incumbent and reduce political rents. In contrast, in his seminal contribution to this literature, Ferejohn (1986) shows that in the absence of public goods, and with distributional conflict for private transfers among voters, political effort for constituents' welfare ends up being minimal, and rent extraction large.

In states with weaker governance institutions, greater poverty and social inequality, the lack of voter coordination on broad public goods may be exacerbated, and the effectiveness of small private transfers to win votes may be enhanced. This may explain the greater and differential correlation of budget composition and voter turnout in the poorest states in India, which are also characterized as having weaker governance compared to others. As voter

participation increases, spending becomes more populist (small private transfers to win votes from the poorest) rather than focused on the delivery of broad public goods.

The risks of greater political participation for public spending policies examined in the previous section may extend to other kinds of public policies for infrastructure provision, such as the management of public utilities and state owned enterprises, and the facilitation of private investments in infrastructure. Public utilities may serve both rent-extraction and populism, providing subsidized services to win votes, at the expense of investments needed for reliable functioning of the utility. Partnership with private investors may be hampered by non-transparent land lease policies, and lack of credible commitment by the government to allow levy of user charges to recover returns from investment.

Populist pressure on public policy—opportunity for reform?

Yet, greater political participation, particularly in recent years, may also provide opportunities to shift the equilibrium of electoral competition away from populist distribution of private transfers towards greater voter coordination on broad public goods. Large scale political mobilization and empowerment of poor and traditionally disadvantaged social groups over the 1990s documented through voter surveys may yet become an opportunity for reform.

According to a national survey of voting behavior conducted in 1996, 75 percent of the sample respondents were not guided by anyone in their voting decision, and of the 25 percent who sought advice only 7 percent sought it from caste and community leaders (Oldenburg, 1999). Based on detailed interviews of village residents in a sample of north Indian villages, Krishna (2003) concludes that political parties can no longer rely on big landlords and caste leaders to mobilize the votes. Studies of electoral performance show that state and national elections are characterized by volatility, that is, large party-vote swings between elections; party

fragmentation, that is, significantly more than two effective number of competing parties; and incumbency disadvantage, that is, incumbents face a lower probability of getting elected than do comparable competitors (Yadav 2000, 2004; Chhibber and Nooruddin, 2008; Linden, 2004).

This political trend could improve the alignment of political interests with development interests if voters could better coordinate their evaluation of governments on the basis of the quality of public goods, and indeed reward well-performing incumbents. New political leadership may be persuaded to overcome incumbency disadvantage and electoral volatility by undertaking institutional reforms that enable voter coordination and higher electoral returns from public goods platforms.

One area of institutional reform with the potential to achieve voter coordination is to decentralize urban infrastructure and its financing (powers to levy user charges and property taxes) to urban local governments. Directly elected and fiscally empowered urban local governments might be able to tap the willingness to pay for services among better-off residents, and develop political reputation for delivering better quality services. Urban residents might be better able to solve the voter coordination problem because of their concentrated need for better public services, and the large cost of pursuing private alternatives. It is probably not an accident that voter coordination on a public goods platform in post industrial revolution 19th century England described by Lizzeri and Persico (2004) happened around municipal infrastructure. Successful performance in running urban local government might enable political parties to develop more credible rural public goods platforms on which rural residents can coordinate.

India is unique among urbanized and growing economies in its low levels of revenue decentralization to municipalities, as most local revenue powers are retained by state governments. The model of populist fiscal policy explored here may also explain why state

governments instead pursue grants-financed decentralization to rural bodies, primarily for beneficiary selection of poverty alleviation programs. Khemani (2010) uses this model to argue that states pursue grants-based rural decentralization to retain control rights over urban revenues to enable discretionary spending on vote-buying programs from rural constituencies. The rapidly changing pattern of voter demographics in rural areas, and migration to urban areas, may however change these political incentives and create an enabling environment for urban decentralization.

Deliberate governance interventions by civic society organizations in evaluating performance of political agents and disseminating information about it might also enable voters to solve their coordination problem (Jenkins and Goetz, 1999; Goetz and Jenkins, 2001; Paul, 2002; Khemani, 2007; Banerjee et al, 2010). While much of the existing work on information for accountability focuses on changes in the behavior of frontline service providers in small jurisdictions, the recent experience of the Member of Parliament Local Area Development Scheme (MPLADS) suggests that dramatic changes in the behavior of political agents can be effected if specific information about their performance is compiled and broadly disseminated in mass media. Keefer and Khemani (2009) document that the first three cohorts of MPs entitled to the MPLADS fund hardly used these resources to provide infrastructure to their constituents, with the mean and median constituency using only 36 percent of the total allotted funds. However, after extensive media coverage of the lack of effort by MPs to use their funds, the fourth cohort of MPs increased utilization to 85 percent at the median.

The country of Brazil provides some particularly encouraging examples of how information dissemination and decentralization to municipal governments can be combined to improve political incentives for public goods. One celebrated example comes from the state of

Ceara, where a reform-minded governor flooded radio airwaves in the early 1990s with messages about how infant and child mortality could be drastically reduced through particular public programs of municipal governments. Tendler (1997) describes how this brought political pressure to bear upon the mayors to actually deliver basic health services. The state also created a new class of public health workers through a publicized recruitment effort that conveyed information to communities about the valuable role the workers could play in improving public health through community-wide effort. Such information campaigns have been credited with bringing a remarkable turnaround to the politics of the state—from being "clientelist" and patronage-based, to becoming service-oriented.

More recently, Brazil has been the source of another innovative experiment in reducing local political rent-seeking by generating and providing credible information to citizens. In May 2003 the national government of Brazil launched an anti-corruption program based on the random auditing of municipal government expenditures by an independent public agency, and then publicly releasing audit findings on the internet and to media sources.[23] New evidence from more than 600 municipalities covered by the audit suggests that the disclosure of information significantly and substantially reduced the re-election rates of mayors that were found to be corrupt (Ferraz and Finan, 2008). Furthermore, this impact was significantly more pronounced in municipalities with greater access to radio stations, presumably because of greater revelation of information.

Conclusion

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[23] In Portuguese, this program is called *Programa de Fiscaliza¸c˜ao a partir de Sorteios P´ublicos*, details of which is available from the following website: www.presidencia.gov.be/cgu.

To summarize in concluding, this paper has examined a puzzle in the political economy of infrastructure in India—the co-existence of relatively low shares of capital spending in public budgets alongside evidence of large demand for village infrastructure from poor voters. It has argued that this pattern is due to infrastructure projects being used at the margin for political rent-seeking, while spending on employment and welfare transfers are the preferred vehicles to win votes for re-election. New suggestive evidence on the variation of public spending composition across states, and within states over time is offered that is consistent with this argument. The share of capital spending is estimated to be higher in states that are reputed to have poorer quality governance, where rent-seeking may be easier, and declines within these states when they experience greater voter participation. In contrast, share of spending on social programs that provide employment and welfare transfers to the poor are lower in weaker-governance states, and increase in all states with increases in voter turnout.

The paper interprets this evidence in the broader context of populist pressures on public policies. It presents some preliminary ideas for how greater political participation may become an opportunity for institutional reform to improve political incentives for better infrastructure policy. These ideas would be worth exploring in future policy dialogue and policy research.

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Table 1

Average Budget Composition in major Indian States, 1980-2005

	Out of Total Spending [a]	Out of Developmental Spending [b]
Share of Capital Spending	13%	16%
Share of Recurrent Spending on all Social Programs	39%	50%
Share of Recurrent Spending on Education	21%	27%

a. *Excluding interest payments*
b. *Excluding state administrative expenses and interest payments*

Source: Annual issues on state finances published by the Reserve Bank of India Bulletin

	(1) Share of Capital Works 1960-2005	(2) Share of Social Programs 1972-2005	(3) Share of Capital Works 1980-2005	(4) Share of Social Programs 1980-2005
β_1 : Turnout*Lower Governance States	-.006287*** (.001)	.0055874*** (.001)	-.0046577*** (.001)	.0052246*** (.001)
β_2 : Turnout*Higher Governance States	-.001088 (.001)	.0009133*** (.0003)	-.0002049 (.001)	.0008704** (.0004)
F test for $\beta_1 = \beta_2$ Prob > F	0.016	0.000	0.002	0.001
Andhra Pradesh	.0508634*** (.009)	-.1093236*** (.002)	.0350249*** (.002)	-.1020997*** (.001)
Bihar	.3532005*** (.123)	-.3378677*** (.057)	.3092692*** (.072)	-.3058319*** (.065)
Gujarat	.0385882* (.024)	-.1298321*** (.006)	.0525851*** (.008)	-.1434996*** (.007)
Haryana	.0346056*** (.010)	-.1851301*** (.002)	.0268124*** (.002)	-.1615526*** (.002)
Karnataka	.0578296*** (.013)	-.1230405*** (.002)	.0502972*** (.003)	-.1189619*** (.002)
Madhya Pradesh	.3188593** (.121)	-.3833415*** (.055)	.3106019*** (.069)	-.3655694*** (.062)
Maharashtra	.0412199** (.018)	-.1083631*** (.004)	.0526371*** (.006)	-.1079113*** (.004)
Orissa	.3360527*** (.119)	-.3463793*** (.055)	.3438026*** (.071)	-.3260435*** (.064)
Punjab	-.0041389 (.0173)	-.1054206*** (.004)	.0176884** (.007)	-.0980074*** (.005)
Rajasthan	.3637228*** (.124)	-.365923*** (.057)	.3536187*** (.071)	-.3451808*** (.064)
Tamil Nadu	-.0391591*** (.010)	-.0466253*** (.002)	-.0293639*** (.004)	-.0482142*** (.003)
Uttar Pradesh	.3068779** (.120)	-.3562615*** (.051)	.2825757*** (.064)	-.3214746*** (.057)
West Bengal	-.0214842** (.008)	.0136576*** (.001)	-.0238669*** (.001)	.0185001*** (.001)
R-sq	0.34	0.56	0.36	0.56
N	627	476	364	364

Table 2
Variation in Budget Composition Across States,
and Within States with Variation in Turnout

*Excluded state is Kerala. Robust standard errors, clustered by state, in parentheses. * Significant at 10%, ** Significant at 5%; ***Significant at 1%*

	(1) Share of Capital Works 1980-2003	(2) Share of Social Programs 1980-2003	(3) Share of Capital Works 1960-1992	(4) Share of Social Programs 1972-1992
Table 3 Variation in Budget Composition Across States, Controlling for state income, population, poverty, inequality				
β_1: Turnout*Lower Governance States	-.0042131*** (.001)	.0048101*** (.002)	-.0054046*** (.001)	.0029056** (.001)
β_2: Turnout*Higher Governance States	-.0010648 (.001)	.0030061* (.002)	-.0024883*** (.001)	.0039805** (.002)
F test for $\beta_1 = \beta_2$ Prob > F	0.043	0.49	0.107	0.588
= 1 for Lower Governance States	.2222205** (.087)	-.0857687 (.160)	.1685886* (.098)	.0513811 (.111)
Per capita state domestic product (cons)	-3.38e-07 (1.89e-06)	-3.03e-06 (2.56e-06)		
Share of agriculture in SDP	.0579515 (.083)	-.2149271 (.147)		
Total Population	-4.32e-07** (1.74e-07)	1.43e-07 (2.17e-07)		
Rural Poverty Head Count Index			.0009901* (.001)	.0014053** (.001)
Rural Gini Coefficient			.0017733 (.001)	-.0015996 (.002)
R-sq	0.29	0.33	0.27	0.26
N	336	336	445	294

*Robust standard errors, clustered by state, in parentheses. * Significant at 10%, ** Significant at 5%; ***Significant at 1%*

Table 4
Variation in Administrative and Education Spending Shares Across States,
Controlling for state income, population, poverty, inequality

	(1) Share of Education 1980-2003	(2) Share of State Administration 1980-2003	(3) Share of Education 1960-1992	(4) Share of State Administration 1972-1992
β_1 : Turnout*Lower Governance States	.0028303** (.001)	.0018215** (.001)	.0031893*** (.001)	.0007111 (.001)
β_2 : Turnout*Higher Governance States	.0012448* (.001)	-.0006547 (.001)	.0033168** (.001)	-.0005694 (.001)
F test for $\beta_1 = \beta_2$ Prob > F	0.304	0.035	0.940	0.221
= 1 for Lower Governance States	-.0865509 (.091)	-.1550651** (.063)	.0314042 (.095)	-.0718648 (.060)
Per capita state domestic product (cons)	-1.88e-06 (1.76e-06)	7.44e-07 (1.23e-06)		
Share of agriculture in SDP	-.0523752 (.072)	.134467** (.052)		
Total Population	1.64e-07 (1.93e-07)	3.91e-07*** (9.12e-08)		
Rural Poverty Head Count Index			.0003436 (.0004)	.0000785 (.0004)
Rural Gini Coefficient			.0005073 (.001)	-.0013058* (.001)
R-sq	0.24	0.36	0.36	0.11
N	336	336	438	288

*Robust standard errors, clustered by state, in parentheses. * Significant at 10%, ** Significant at 5%; ***Significant at 1%*