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*Philip Keefer and Stuti Khemani*

*When do legislators pass on “pork”?*  
*The Role of Political Parties in*  
*Determining Legislator Effort*

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**State University - Higher School of Economics**  
**Moscow**

Centre for Advanced Studies  
Russia, Moscow  
<http://www.cas.hse.ru>  
E-mail: [cas@hse.ru](mailto:cas@hse.ru)

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# When do legislators pass on “pork”?

## The Role of Political Parties in Determining Legislator Effort

Philip Keefer and Stuti Khemani

Development Research Group

The World Bank

[pkeef@worldbank.org](mailto:pkeef@worldbank.org) and [skhemani@worldbank.org](mailto:skhemani@worldbank.org)

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**Abstract:** A central challenge in political economy is to identify the conditions under which legislators seek to “bring home the pork” to their constituents. We use data from a unique type of public spending program proliferating in developing countries, the constituency development fund (CDF), to conduct the first systematic analysis of one determinant of constituency service, voter attachment to political parties, holding constant all other electoral and political institutions. The CDF in India, called the Member of Parliament Local Area Development Scheme (MPLADS), offers information on legislator effort on behalf of constituents that is significantly more accurate than other measures of effort common in the literature. Program design gives rise to this advantage: CDFs allocate identical funds directly to legislators to finance the delivery of public works in their constituencies. Controlling for numerous alternative explanations, we find that legislator effort (MPLADS disbursement) is significantly lower in constituencies that are party strongholds. This pattern of variation implies that legislators pass on pork when voters are more attached to political parties and has implications not only for our understanding of the political dynamics underlying public policy, but also for the dynamics of party formation and the evaluation of CDFs. .

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## 1. Introduction

The puzzle of “pork-barrel” policies, that individual politicians or legislators persistently target public spending to specific projects in their constituencies to win elections or to gain rents, often when those same resources could deliver greater welfare benefits when targeted more broadly, in the form of public goods, has long pre-occupied scholars (Ferejohn, 1974; Weingast et al, 1981; Baron and Ferejohn, 1987; Carey and Shugart, 1995; Ames 1995; Cox and McCubbins, 1993; Lizzeri and Persico, 2001; Persson and Tabellini, 2000). A related literature has analyzed legislator efforts to perform constituency services to build a “personal vote”, arguing that such effort is an important determinant of observed incumbency advantage (Cain, Ferejohn, and Fiorina, 1987; Fiorina and Rivers, 1989; King, 1991; Levitt and Snyder, 1997). In general, research on constituency service and pork barrel policies examines constituency service through the lens of institutions, investigating, for example, the influence of voting rules or the form of government on legislator incentives to provide constituent services or pork. The effect of political parties on legislator behavior is not as closely examined, except insofar as institutions affect the relationship between parties and party legislators. Our analysis is the first to show that voter attachment to political parties curbs legislator incentives to provide pork to their constituents, even in a setting where legislators operate within identical institutions.<sup>1</sup>

There are at least two significant reasons to investigate the role of voter attachment to parties on constituency service, independent of the institutional environment. First, voter

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<sup>1</sup> Cain, Ferejohn and Fiorina (1987) argue that constituency service is less pronounced in Great Britain than in the United States because parties are stronger in parliamentary than in presidential systems. Carey and Shugart (1995) and Cox and McCubbins (1993) similarly make institutional arguments that work through the channel of political parties in making predictions about constituency service, but do not analyze the influence of parties independent of the institutional setting.

attachment changes the electoral benefits to legislators of constituent service. Ashworth and Bueno de Mesquita (2006) derive this prediction directly from a model in which voters have preferences over both legislator action and the policy program of the legislator's party, and, for any given set of preferences, seek to elect candidates of high ability to deliver public goods and constituency service. Ability, however, is difficult for voters to observe, and incumbent legislators can only use constituency service to signal high ability. Where voter preferences for a particular party's platform are great, however, the evaluation of incumbent ability matters less in voters' re-election decision, and incumbent incentives to provide constituent service correspondingly fall.

Second, voter attachment reduces party leader incentives to choose candidates who prefer constituent service or candidates who, more than their challengers, can credibly promise constituency services to a large fraction of constituency voters. For example, a central problem in the growing literature on political party formation (e.g., Aldrich, 1995; Caillaud and Tirole, 2002; Snyder and Ting, 2002; Levy, 2004; and Morelli, 2004) is the ability of political parties to credibly project a policy program to voters when the policy preferences of party candidates are heterogeneous. Where voter attachment to the party is high in a constituency (e.g., when constituency voters strongly prefer a party's ideology), party leaders can choose candidates with policy preferences, including preferences over constituency service, that are further from the constituency's and closer to the party's.

Our analysis is the first systematic test of the effect of party influence on constituent service. It offers strong support for the prediction that greater voter attachment to a political party leads to lower constituency service by incumbent legislators. Our evidence is based on a constituency development fund (CDF), a specific type of public spending program that India, Kenya, the Philippines and other developing countries have adopted.

CDFs allocate budgetary resources directly to individual legislators to spend on public works in their constituencies. The data for this analysis are from the Indian CDF, the Member of Parliament Local Area Development Scheme (MPLADS). Using a measure of voter attachment based on whether constituencies are party strongholds or not, we find robust evidence that legislators substantially reduce effort to provide public works to their constituents when their constituency is a party stronghold. This is direct evidence that voter attachment to parties reduces legislator incentives to cultivate a personal vote— that in the presence of strong parties, even legislators in single member constituencies that give legislators strong incentives to attract a personal vote often “pass on pork.”

The analysis here also makes a methodological contribution to research on legislator behavior. Lacking a direct measure of legislator effort, researchers use different proxies of legislator output to capture effort. These proxies are generally unable to distinguish the beneficiaries of the output nor easily capture the degree to which output is due to effort rather than other factors. Data from legislator usage of constituency development funds avoid these disadvantages and constitute a significantly more precise measure of legislator effort on behalf of constituents than is currently available.

The next section of the paper describes the specific CDF program in India and explains why disbursements under the program should accurately represent legislator effort on behalf of their local constituency. Section 3 lists the conditions under which legislators have weak incentives to exert such effort, yielding tests for the influence of political parties. We then perform these tests using available data on spending under the CDF program. Section 4 describes the data and specifications we use to examine cross-constituency variation in spending from 1999 onwards, and sections 5 and 6 presents the main results and

a discussion of robustness. Section 7 concludes by describing the implications of the analysis for the spread of CDF schemes and directions for future research.

## **2. Measuring constituency service: The MPLADS Program**

Since legislator effort is not directly observable, scholars use various proxies to identify the effort of legislators to direct benefits to their districts. None of these measures comes as close as the MPLADS data to meeting the two conditions of the ideal proxy: that the measure be uniquely attributed to the legislator's effort, and that it be associated with benefits that flow uniquely to the legislator's constituents.

For example, Heitshusen et al (2005) analyze determinants of legislators' subjective assessments of their own priorities for constituency service; these need not be strongly correlated with actual provision of benefits to constituents or with actual effort exerted by legislators. Stratmann and Baur (2002) examine committee membership of legislators and characterize some committees as better enabling legislators to provide geographically targeted benefits. Shiller (1995) and Wawro (2002) consider the number and relevance of bills that American legislators sponsor. Padro' i Miguel and Snyder (2004) rely on subjective assessments of legislator performance by third parties (journalists, for example). Committee membership, the number of bills introduced and subjective evaluations are all useful measures of legislator activity, but unlike MPLADS they do not directly identify the beneficiaries or the benefits of legislator effort.

Many studies use correlations between legislator voting behavior and own-constituency spending as evidence of legislator incentives for pork-barrel spending (e.g., Knight, 2004; Ames, 1995; Baqir, 2002). However, even in the apparently most straightforward case, omnibus pork barrel legislation with constituency-specific benefits in a country with single member electoral districts, although benefits can be precisely measured, a

wide array of unobserved factors make it difficult to attribute differences in benefits to the actions of an individual legislator. For example, apparent budget shortfalls to a constituency in one piece of legislation may have been compensated in other, unobserved legislation.

Unobserved factors also influence executive implementation of legislative priorities.

The design of the MPLADS program in India fortuitously avoids the shortcomings of other measures of legislator effort. The scheme was inaugurated in December 1993 by a dominant national party, the Congress Party. It allocated 10 million rupees annually (about \$250,000) to each single-member parliamentary constituency for use on local public works recommended by the MP. In fiscal year 1998, the Bharatiya Janata Party (BJP)-controlled national government doubled the annual entitlement of each constituency to 20 million rupees.<sup>2</sup> Unspent money accumulates over time, such that when an MP leaves office the unspent balance remains at the disposal of the successor MP. By March 2004, the end of fiscal year 2003 in India, each parliamentary constituency had thus been entitled to spend 165 million rupees on local public works over the preceding ten years.<sup>3</sup>

The MPLADS program is unique in the degree to which it can isolate the contribution of a legislator's own efforts to constituency-specific benefits. First, the amounts available to spend are independent of legislator effort and are identical across legislators – in other measures of legislator effort, the effort that legislators “could” have undertaken is generally unobserved. Second spending on public works under the program must be initiated by the legislator, acting alone, and is identified with the legislator's name through information placards located at the project site. Third, we have found no evidence either that

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<sup>2</sup> Current, purchasing power parity-adjusted income per capita in 2004 was 7.2 times higher in the United States than in India. In the U.S. context, therefore, these allocations would be equivalent to approximately \$1.4 million annually before 1998 and \$2.8 million annually after 1998.

<sup>3</sup> Again, in terms of purchasing power parity in 2004, this money per district would amount to about \$23 million in the US.



MPLADS requires more effort than other forms of constituent service, or that the effort required to deliver MPLADS relative to other types of constituency services is systematically and coincidentally higher in constituencies with high voter attachment. The CDF program is unique in allowing national legislators access to local public works for which they can take credit. Beyond the CDF program, national legislators in India have to work through their party to access large public works programs that spread benefits across constituencies.<sup>4</sup> Consequently, unobserved variation across legislators in their costs of delivering pork through other means should not affect the relationship between the effort that they exert in disbursing MPLADS allocations and the degree of voter attachment that we investigate. Fourth, however, successful initiation of such public works by legislators does require effort on their part.<sup>5</sup> Legislators must identify multiple small or mid-size projects because of size limits on any one project; they also need to negotiate implementation with local bureaucrats, who have considerable power either to reject the project on grounds of non-conformity with project guidelines or to stall its implementation.<sup>6</sup>

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<sup>4</sup> Indeed, Banerjee and Somanathan (2007) interpret evidence of convergence in public infrastructure across electoral districts in India over time as arising from the presence of a strong national political party that was successfully able to make a broad appeal across districts to deliver basic infrastructure everywhere.

<sup>5</sup> The implementation procedures are available at the following web-site:  
<http://mplads.nic.in/dpguid.htm>

<sup>6</sup> A telling anecdote on the challenges of getting projects implemented through local bureaucracies is provided in a study of MPLADS undertaken by the Planning Commission of India (2001). An MP from the state of Kerala recommended construction of additional classrooms to a rural high school on November 11, 1996. The concerned District Collector (DC) took 38 days to review and forward this proposal for estimate preparation to the relevant Block Development Officer (BDO). The BDO took 46 days to prepare the estimate and forward it to the District Rural Development Agency (DRADA) for approval. The DRDA provided its approval after 130 days. It then took the DC 250 days to formally provide administrative sanction to the work. The Block Level Beneficiary Committee which had to execute the work (because the Guidelines prohibit using professional contractors for MPLADS works) was constituted 220 days after the DC had sanctioned the work, by which time they declared the work could not be undertaken because the funds allotted were insufficient.

Two pieces of evidence further support the argument that MPLADS disbursement requires legislators to exert effort. First, the report of the MPLADS audit conducted by the Comptroller and Auditor General, covering the period 1997-2000, showed that only 40 percent of projects recommended by MPs were subsequently sanctioned by District Commissioners (the top public officials in every district, an administrative unit in India that does not necessarily correspond to electoral constituencies), taken up by implementing agencies and completed.<sup>7</sup> Actual spending under MPLADS is a close approximation of project execution, or at least MP effort in obtaining bureaucratic approval of implementation, because the money is released against the issuance of completion certificates by the implementing agents.<sup>8</sup>

Second, MP disbursements from the program were very low until a wave of publicity made voters aware of the program and MPs' own disbursement record. Between the time of the initiation of the MPLADS program in December 1993 and 1999, MPs left most of their allocation unutilized. MPLADS disbursements in the average and median districts amounted to approximately 31 million rupees, out of a total allocation of 85 million, or only 36 percent of the available funds.<sup>9</sup> The highest ranking district in utilization spent 78 percent, while the second highest ranked district spent only 57 percent. In a dramatic shift, by the end of the period 1999 – 2003, the median MP office had disbursed 85 percent of accumulated funds.

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<sup>7</sup> MPLADS expenditures were last audited in 2000, covering the period 1997-2000 and 241 out of 786 constituencies. The audit was critical and has not been repeated. See [http://cag.nic.in/html/reports/civil/2001\\_book3a/index.htm](http://cag.nic.in/html/reports/civil/2001_book3a/index.htm)

<sup>8</sup> Although the audit report points to some irregularities in this, with money being released without proper collection of completion certificates, and even with such certificates it is possible that the money was diverted to things other than the intended works, getting their allocations recorded as “spent” requires considerable effort on the part of MPs.

<sup>9</sup> The allocation up to March 2000 (end of fiscal year 1999) was Rs. 5 million in FY 1993 (through March 31, 1994); 10 million rupees each in 1994-95, 1995-96, 1996-97 and 1997-98; and 20 million rupees each in 1998-99 and 1999-2000.

All but 32 out of 543 increased their utilization of MPLADS by at least 20 percentage points; most increased it by more than 45 percentage points.

We would not expect high spending in the early years of MPLADS if it required high effort, and if the program were not known to voters. In fact, MPLADS was introduced by the Congress Party when it faced the loss of control of several state governments, a critical tier of government that the party had been using to deliver goods to voters to win their support.<sup>10</sup> MPLADS provided a vehicle for the national party to channel funds to its MPs in the growing number of states controlled by the opposition.<sup>11</sup>

MPLADS was approved almost surreptitiously, without parliamentary debate, as a supplementary demand for grants to pay for additional expenditures out of a Contingency Fund in the union budget (*The Times of India*, 30th November, 1997). Only legislators from the communist parties of the Left Front, a coalition of strong parties dominating the state of West Bengal, raised objections to the program, on the grounds that MPLADS would be used by national parties to encroach upon the policy domain of lower tier governments (*Inter Press Service Global Information Network*, February 1, 1994). There was almost no coverage of the program in the media. A search on the media database News Plus/Factiva for newspaper coverage of the MPLADS program yields only 6 articles in the four and a half year period between October 1993, just before MPLADS was introduced in the parliament, and June 1998. Only one article, written in February 1994, discussed the program itself in any

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<sup>10</sup> Khemani (2007a, 2007b) provides evidence that the national government targets significant fiscal resources to states controlled by the same political party. Other authors have also emphasized the importance to the Congress Party of control of state governments as a key vehicle for reaching voters (Saez, 2002; Chhibber, 1995).

<sup>11</sup> The MPLADS program appears to have been modeled after a similar program initiated by various state governments to provide constituency-specific allocations to state legislative assembly members (MLAs). The MLALADS can similarly have been a political response to declining control of political parties in state elections—coalition governments of multiple political parties had become a constant feature of the state-level political landscape.

significant detail, with the others mentioning it only in passing as part of other stories. Even this single article was published in a less visible media, the Inter Press Service Global Information Network, rather than in a leading newspaper. In sum, the program was not widely politically salient for the first years after its initiation.

The scenario changed suddenly in 1999 after the Comptroller and Auditor General (CAG) of India published a pilot audit of the MPLADS program in a few states (Government of India, 1998). The CAG report revealed both lack of utilization of funds and some inconsistencies in the way funds were used. It concluded that guidelines needed to be revised for “proper implementation” and prevention of funds misuse. These findings fed a critical – and newsworthy – view of politician behavior. A search on News Plus/Factiva for the period July 1998 to December 1999 yields 60 articles: ten times as many articles were written in the 1.5 years following the CAG report than in the 4.5 years following the introduction of the program. Most of the articles were published in leading newspapers, focused on the issues raised in the CAG report, and made politician accountability the key story. In response to the CAG report and possibly to the media coverage as well, the BJP-led government in 1999 instituted more stringent program implementation guidelines, including provisions for review and scrutiny by ministry authorities if funds are severely under-utilized (Business Line, 18 November, 1999).

The publicity surrounding MPLADS, triggered by the CAG audit, significantly raised the political salience of MPLADS disbursements. The national elections of December 1999 ushered in a new cohort of MPs precisely during this period of increasing media coverage and political salience of MPLADS. Over the four years in office of this 1999-elected cohort, until the elections of June 2004, media coverage intensified, with the same News

Plus/Factiva search producing 244 articles mentioning MPLADS. The utilization (non-utilization) of allocations was a major theme of this news coverage.

### **3. When do legislators pass on pork?**

Institutional determinants of constituency service and pork barrel policies have received the most attention in the literature: voting rules and regime type fix the electoral returns to legislators of building a personal constituency. Political parties have an effect on legislator behavior in this work, but their effect derives from the institutional environment. Our focus, in contrast, is on direct influence of political parties on constituent service, even when institutions are identical across legislators.

Central to the pork barrel literature is the idea that voters can be more certain of a legislator's contribution to their welfare when it comes in the form of benefits that flow only to the legislator's constituency rather than benefits that flow to multiple constituencies and to which multiple legislators contribute. Less often articulated, but key to this rationale, is that constituency spending gives legislators an electoral advantage that challengers, for whatever reason, cannot match. In Ashworth and Bueno de Mesquita (2006), constituency service allows incumbents, but not challengers, to demonstrate their ability to voters. Voter preferences over candidates depend on the policy stance of the candidates' party, the candidate's efforts in providing constituency service and public good provision, and the candidate's ability. However, voters can only infer ability from constituency service. In the most interesting case, where voters value public good provision more than constituency service, legislators nevertheless persist in providing constituent services to demonstrate their ability. They predict that where the electorate overwhelmingly favors the policies of one political party, which are not affected by candidate ability, candidates have less incentive to dedicate effort to constituent service.

Constituency service may also reflect tradeoffs in how party leaders select candidates to maximize chances of electoral success. In the literature on political party formation (e.g., Aldrich, 1995; Caillaud and Tirole, 2002; Snyder and Ting, 2002; Levy, 2004; and Morelli, 2004), the policy platforms that parties can credibly project depend on the policy preferences of the party's candidates. In constituencies where voters are deeply attached to the party, party leaders can recruit candidates with policy preferences or other characteristics that assist the party in capturing votes in other constituencies (e.g., candidates who best represent the ideological stance of the party, candidates whom they seek to groom for a larger statewide or nationwide political career, or famous candidates – movie stars, retired generals, etc.). In particular, they can do this even when these candidates are less favorable to constituency service than constituents would prefer.

Candidate selection is also affected by the credibility of pre-electoral policy promises. For example, one implication of the analysis in Keefer and Vlaicu (forthcoming), though it is not about party-building specifically, is that in constituencies where parties cannot make credible promises to voters regarding either public goods or more narrowly targeted pork barrel policies, parties are more likely to seek out candidates who can make locally credible promises to provide pork or constituency service.<sup>12</sup> This leads to a policy bias in favor of constituency service. However, when voters in the constituency are attached to the party for ideological or other reasons, party leaders can recruit candidates who might increase the party's vote share everywhere, perhaps by raising the credibility of its broad public good promises, even if those candidates are less able to make credible promises to local constituents regarding pork.

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<sup>12</sup> Keefer and Vlaicu (forthcoming) specifically analyze the conditions under which non-credible parties will choose to appeal to voters directly, or instead to channel their appeals through local "patrons" who can make credible promises regarding targeted transfers to their "clients".

The central hypothesis of the party building literature is therefore identical to that of the candidate ability model: when voter attachment to a party is high in a constituency, constituency service will decline. The key issue in testing this hypothesis is the measurement of voter attachment.

In fact, four sources of voter attachment to parties can be found in Indian constituencies; all are consistent with the low incentives of individual legislators to build local public infrastructure identified in the foregoing discussion. One is identity: parties can credibly claim to defend the interests of a social class of voters (say, Hindus, or low-caste voters). Second, parties that can stake out credible ideological positions (e.g., to serve the interests of the poor), can also achieve dominance, independent of effort exerted on behalf of local constituents. The Communist Party in West Bengal or in Kerala has such appeal. Third, parties can also benefit from charisma: parties may have individual leaders and prominent candidates whose individual charisma attracts votes independent of the services they deliver. Finally, fourth, voters can be attached to parties because they have a machine that reliably provides individual favors for party supporters (jobs, favorable treatment by the bureaucracy, etc.), independent of the state. We cannot definitively distinguish which of these matters across party strongholds in India. However, the effects of party dominance in reducing legislator effort are particularly strong in, for example, West Bengal, where the dominance of the Communist Party can be explained by both its ideological appeal and its internal, "machine-like" organization.<sup>13</sup>

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<sup>13</sup> Parties might also be dominant precisely because they have succeeded in providing large, national infrastructure projects. However, we control for measures of the total district stock of public infrastructure, such as schools, roads, power projects, and find these are not significantly correlated with spending under the CDF program.

There are no independent measures of voter attraction to parties in India.<sup>14</sup> Our measure is therefore the degree to which parties have won repeated elections in a constituency, irrespective of which candidate they nominate to the party's ticket. The best, though not the only explanation of why the same party wins in a constituency in several successive elections, irrespective of whether they field the same candidate or switch to a new candidate, is that voters in the constituency are more strongly attached to the party compared to voters in other constituencies where the party is less successful. This is true regardless of the source of the attachment. It is also true regardless of whether voters are positively attached to the party or simply hostile to all of the parties competitors.

One alternative explanation for party strongholds, other than voter attachment to the party, is that the successful party has chosen a popular candidate to nominate to the constituency ticket. If, in turn, the candidate's popularity is built on ascriptive (e.g., religious, ethnic or caste) or other appeals that are unrelated to local public works provision, low MPLADS disbursements would be unrelated to party influence. However, we control for candidate dominance in the estimations below.

Disproportionate voter attachment to a single party gives rise to apparently non-competitive elections – that is, party strongholds. However, elections may be non-competitive for other reasons. It is possible, for example, that a party has enjoyed a string of favorable electoral shocks. This should not necessarily reduce political incentives to provide constituency service (since a positive shock in the current election does not affect the probability of such a shock in the next election). A string of favorable shocks is also unlikely, since the number of dominant parties is large and the favorable shocks would have

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<sup>14</sup> For example, in the party identification literature, voter attachment is identified by survey results indicating how close voters say they are to particular parties. Such surveys are generally not available in India, and certainly not at the constituency level for most of the 483 constituencies we examine.



had to occur in four successive elections. In any case, though, our results are robust to a control for electoral volatility.

Elections may also be non-competitive because dominant parties use extra-institutional means (vote-rigging, violence) to retain power. There is no evidence that party dominance is systematically associated with such “extra institutional” influences in India, however. On the contrary, party dominance is *less* common in those states in India most associated with such “extra-institutional” electoral influences, such as Bihar or Uttar Pradesh. In any case, the potential for extra-institutional influence is most heavily determined by state-level characteristics, but our results are robust to state-level fixed effects. In addition, the use of extra-institutional measures to maintain party dominance could be associated with systematically larger majorities and a splintered opposition. However, in all our specifications we control for the electoral margin of victory (the difference in vote share between the winning and runner-up parties).

The voter attachment interpretation of the party stronghold coefficient is the most plausible, given the robustness of the party stronghold effect to the inclusion of controls for a wide variety of alternative explanations for non-competitive elections in a constituency.

Our party stronghold measure also addresses an issue raised by Ashworth and Bueno de Mesquita (2006), that electoral results, such as proportion of votes won, are likely to be a noisy measure partisan attachment because they are affected by numerous factors other than voter attachment to parties. Consistent with their observation, electoral margin of victory in our analysis is always insignificant. In contrast, our measure, the persistence of party dominance over several electoral cycles is more likely to be rooted in party attachment than victory in any one election. Moreover, our controls capture factors other than party attachment that might affect dominance. For example, Ashworth and Bueno de Mesquita

single out incumbent advantage as a key confounding variable; we control for candidate dominance, however.

In the next section of the paper we test the proposition that voter attachment to parties and political affirmative action reduce MPLADS disbursements using cross-constituency data after 1999. We take advantage of the fact that, even after the dramatic rise in MPLADS disbursements following the increase in newspaper coverage, 30 percent of districts still had spent less than 75 percent of accumulated allocations by 2004, leaving at least \$500,000 of their entitlement unspent. There was also much more variation across the 543 districts after 1999: the standard deviation of utilization rates of accumulated funds across districts increased from 9 percentage points before 1999 to 16 percentage points afterwards. In the state of West Bengal, MPs left 40 percent unspent; in Tamil Nadu, only 6 percent.

#### **4 Cross-constituency variation in MPLADS spending: Data and specifications**

The MPLADS spending data is available from the relevant central ministry responsible for overseeing its implementation. The first available data point is for cumulative spending incurred in each parliamentary district since the inception of the program in 1993 until March 31<sup>st</sup>, 2000, the end of fiscal year 1999.<sup>15</sup> Three different cohorts of MPs had access to MPLADS during this period, owing to the political instability described earlier: MPs elected in 1991 who faced elections again in 1996; MPs elected in 1996 who faced elections in 1998; and MPs elected in 1998 who faced elections in 1999. It is not possible to analyze the influence of specific legislator characteristics on MPLADS spending over the period 1993-1999 because we cannot disaggregate constituency spending between the 3

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<sup>15</sup> The ministry informed us that annual data on spending during this period is not available because of lack of proper reporting procedures at that time. This was rectified in 1999 under the new implementation guidelines.

cohorts. However, the fourth cohort of MPs with access to MPLADS was elected in 1999; its term in office lasted until the next elections of April 2004, or four fiscal years. For this cohort we have constituency-level data on spending incurred by individual MPs over their term in office from 1999-2004. We therefore analyze the determinants of variation in MPLADS spending by this 1999-elected cohort of legislators across 483 electoral districts.<sup>16</sup>

We first estimate the following basic specification to test our hypotheses of the role of political parties and affirmative action policies in determining legislator effort to bring public works to their constituencies:

$$\begin{aligned}
 UtilizationMPLADS_{ds} = & \beta_1 * PartyStronghold_{ds} + \beta_2 * CandidateStronghold_{ds} \\
 & + \beta_3 * Reserved_{ds} + \beta_4 * MarginVictory_{ds} + \beta_5 * 1993 - 99Spending_{ds} \\
 & + \eta_d + \lambda_s + \varepsilon_{ds}
 \end{aligned} \tag{1}$$

The left-hand side variable, *UtilizationMPLADS*, is the actual spending incurred by the MP in constituency *d* in state *s* as a percentage of what the MP was entitled to spend on public works in his/her constituency. The entitlement includes the legacy of unspent allocations that MPs had at their disposal in 1999 and additional yearly allocations from 1999 on. As discussed in previous sections, this is our measure of the effort exerted by MPs to bring local infrastructure to their constituents.

The variable *PartyStronghold* equals one if the party won every election in constituency *d* in state *s* in the 1990s (in the 1991, 1996, 1998, and 1999 elections) and zero otherwise.

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<sup>16</sup> The total number of national electoral districts in India is 543. We drop 39 districts from our analysis because the Election Commission of India does not provide 1999 electoral data for these districts. We also omit 20 districts which held by-elections between 1999 and 2004, usually due to the death of the 1999-elected incumbent, thereby changing the identity of the politician in the middle of the term in office. One last district was dropped because of an apparent data error in which total MPLADS spending was reported as negative.

This was a period of substantial electoral volatility and emerging incumbency disadvantage, supporting our interpretation of the *PartyStronghold* indicator variable as identifying those constituencies where voters are particularly attached to political parties.

The variable *CandidateStronghold* equals 1 if the same person has been elected into office in constituency  $d$  in state  $s$  in every election between, and including, 1991 and 1999, irrespective of his/her party affiliation. We include this variable to test whether a party could have an electoral lock on a constituency for reasons other than the citizens' intrinsic preference for the party. The most important is that parties might be dominant because they have been fortunate in finding a candidate whose personal characteristics are highly valued by voters.<sup>17</sup>

Of the 483 constituencies in our analysis, 97 (20 percent) are party strongholds, and of these the party switched the nominated candidate in 61 districts, retaining the same candidate in the remaining 36 districts. We test whether the effect of party stronghold is different in constituencies where a party switched its candidate than in constituencies where there was no such switch. That is, we estimate the following specification:

$$(2)$$

$$UtilizationMPLADS_{ds} = \phi_1 * PartyStronghold * (CandidateSwitched)_{ds} + \phi_2 * PartyStronghold * (NotSwitched)_{ds} + \phi_3 * Reserved_{ds} + \phi_4 * MarginVictory_{ds} + \phi_5 * 1993 - 99Spending_{ds} + \eta_d + \lambda_s + \varepsilon_{ds}$$

The first interaction term equals 1 for those party stronghold constituencies where the party switched its candidate, and the second those constituencies where the party retained the same candidate on its ticket. We test for the equality of coefficients  $\phi_1$  and  $\phi_2$  to ensure that the effect of party strongholds is driven by voter attachment to parties rather than candidates.

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<sup>17</sup> The total number of candidate stronghold constituencies in our sample is 42, of which only 6 are candidate strongholds without being party strongholds (where the dominant candidate switched his/her party affiliation). The Indian data therefore do not suggest that candidates can maintain dominance without a dominant party.

Specifications (1) and (2) are obviously susceptible to reverse causality. Incumbents who spent more of their allocation before 1999 to maintain their dominance would have relatively smaller accumulated entitlements by the time they were re-elected in 1999. It would therefore require less effort for them to disburse a given fraction of their remaining allocation than it would have for incumbents whose predecessors had left them a larger legacy of unspent MPLADS funds. However, this reverse causality argument predicts exactly the *opposite* sign (positive instead of negative) for the coefficients of *PartyStronghold* and *CandidateStronghold* than the one predicted by our argument that strong parties reduce legislator incentives to spend. We control for previous spending under MPLADS from 1993 to 1999 by including the variable *1993 – 99Spending* which measures the total MPLADS spending undertaken in constituency  $d$  since the inception of the program until the 1999 elected cohort took office. This variable also captures other constituency-specific characteristics related to administrative effectiveness or opportunities for rent-seeking using MPLADS.

To ensure that party stronghold effects are not simply reflective of non-competitive elections, we control for the closeness of electoral races in constituencies, *MarginVictory*.<sup>18</sup> This is the average margin of victory in constituency  $d$  of the winning candidate (over the

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<sup>18</sup> Candidates and parties are expected to target closely-contested districts with greater resources and effort (Dixit and Londregan, 1996; Lindbeck and Weibull, 1987; and Snyder, 1989). Consequently, all studies of legislator responsiveness take into account some measure of the electoral competitiveness of a district at the time a policy decision is made. However, the evidence that governments target spending to those districts where the vote was closest is mixed. For example, looking at Indian state governments, Cole (2001) finds evidence governments target spending to close districts, Bardhan and Mookherjee (2005), also looking at India, find that district marginality is a weak predictor of incumbent behavior (,

runner-up candidate, under a simple plurality electoral law in single-member constituencies) over the three elections of 1996, 1998, and 1999.<sup>19</sup>

India has a novel institutional arrangement to benefit disadvantaged groups, requiring that in approximately 20 percent of constituencies (108 of 483 in our sample) parties must nominate candidates from scheduled castes and tribes. The last electoral delimitation law of 1977, which was fully implemented by 1982, determined which constituencies would be reserved (Pande, 2003).<sup>20</sup> To control for the impact of this affirmative action policy on legislator incentives to distribute pork, we include an indicator variable for whether a constituency is reserved for candidates belonging to the scheduled castes and tribes: *Reserved* equals 1 if constituency  $d$  is so reserved, and 0 otherwise.

The unobserved error in our specification consists of a constituency-specific term,  $\eta_d$ , a state-specific term,  $\lambda_s$ , and noise,  $\varepsilon_{ds}$ . We are relying on the variable *1993-99Spending* to account for unobserved constituency-specific characteristics that could explain MPLADS spending and be correlated with *PartyStronghold*, the central variable in our tests. That is, we assume that the expected value of  $\eta_d$  is zero, conditional upon the inclusion of previous years' MPLADS spending in the constituency. In the results below we will show that including other constituency-specific variables, such as the constituency's stock of public infrastructure, electoral volatility, and social fragmentation, does not change our estimates of the impact of party strongholds and reservations. While we cannot definitively exclude the possibility that omitted variables drive our results, these specifications do account for the

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<sup>19</sup> We test robustness of estimates to calculating the average over different periods of elections, including just the most recent election of 1999. There is no difference in the sign or significance of any of the estimated coefficients relating to changes in how the average margin of victory is calculated.

<sup>20</sup> Reservations were introduced substantially before the initiation of the MPLADS program, and before most of the parties we consider in this study were even established. .

most obvious alternative explanations for our findings. Finally, we report estimates both with and without state fixed effects  $\lambda_s$ . The estimates of  $\lambda_s$ , which are most negative for states that are known to have strong parties, provide further independent support for the hypothesis that voter attachment to political parties reduces legislator incentives to exert effort on spending their MPLADS allocation.

## 5. Cross-constituency variation in MPLADS spending: Results

Our central focus is on the effects of voter attachment to parties, the effects of legislator experience, and the influence of seat reservations. These are reflected in the results on the party stronghold, candidate stronghold and seat reservation coefficients, which are discussed here in turn. The summary statistics of all the variables used in the basic specification are listed in Table 1. Table 2 presents the results of three estimates of specification (1) that vary the assumptions about the distribution of errors across constituencies within a state.

### ***Party strongholds and MPLADS***

All three estimates of specification (1) in Table 2 demonstrate the importance of the party stronghold variable. The coefficient estimates in columns (1) and (2) are identical (although standard errors are bigger in the second case, because of clustering at the state level) and indicate that MPLADS disbursements in constituencies with a dominant party are ten percentage points less, more than one-half of a standard deviation. The size of the coefficient falls slightly when we include state fixed effects in column (3), to seven percentage points. This estimate measures the deviation of party stronghold constituencies *within* each state from the state average.

The state fixed effects themselves, listed in Table 3, also support the argument that voter attachment to a single party reduces incumbent incentives to disburse MPLADS.

States with dominant parties have significantly lower spending than other states. West Bengal, the only state where a single political party, the Communist Party of India (Marxist) has dominated state politics and leadership since 1977, stands out as a state with significantly and substantially lower MPLADS spending than other states. Average spending in constituencies in West Bengal is 18 percentage points lower than average spending in other states. In contrast, in those states where voters exhibit more even attachment to rival political parties, as in the state of Tamil Nadu in India, legislators exert significantly greater effort. When parties are neck-to-neck in electoral contests they use any additional instruments available to them to demonstrate the superiority of individual candidates they nominate.

One effect that could give rise to spurious negative associations between party strongholds and MPLADS disbursements is prior spending on MPLADS. This variable captures, first, unobserved constituency characteristics, such as opportunities for rent-seeking or administrative capacity, that affect tendencies to utilize MPLADS allocations. Second, and more simply, it captures the accounting effect that incumbents who spend more earlier have less to spend later. The control for prior disbursements is robustly significant and a positive determinant of utilization after 1999. If these characteristics influenced both voter attachment to a dominant party and MPLADS spending, party stronghold would be insignificant. Instead, party stronghold is significant in all regressions with the control for prior spending.

Party stronghold effects are also robust to the control for a constituency's average margin of victory. This variable is significant at the 10 percent level, but only in specifications without state fixed effects. Its sign is positive, suggesting that closeness of electoral competition as measured by lower margins of victory is associated with *lower* MP



effort in disbursing their entitlement. However, this correlation could well be due to reverse association—MPs that exert greater effort in spending their MPLADS allocation are able to achieve higher margins of victory. Our concern is the robustness of the party stronghold effect when we control for the margin of victory; the results here amply support the argument that the party stronghold effect is primarily driven by voter attachment to a party rather than lower electoral competition *per se*.

The systematic evidence from Table 2 is compelling that legislators provide less constituency service in high attachment areas. There is no data to test whether, consistent with the arguments presented earlier, these same legislators are also either more likely to shirk, or be of lower ability, or to exert greater effort on public good provision or party-building activities. However, some less systematic evidence is consistent with these corollary hypotheses. For example, Bardhan and Mookherjee (2005) argue that greater voter attachment to a dominant party in the Indian state of West Bengal is associated with greater shirking by village governments in implementing the party's policy of land reforms. The Marxist parties of West Bengal, which generally enjoy high voter attachment, are also known to place high demands on their candidates in terms of providing support to the party as a whole. Finally, we know that parties aim to find congenial constituencies for party luminaries (eg. veteran party leaders, or heirs of deceased party luminaries) who can influence policy-making in the legislature, even if they have no comparative advantage in disbursing MPLADS (e.g., because their patron-client ties within the constituency are few). In many parliamentary systems, such candidates are disproportionately likely to stand for election in constituencies with high voter attachment to their party, though we cannot confirm this in the case of India.

### ***Candidate strongholds and MPLADS***

In contrast to the significant results for the party stronghold variable, candidate dominance (*CandidateStronghold*) exhibits no significant correlation with MPLADS spending. Moreover, column (4) in Table 2 indicates no statistical difference in spending between party stronghold constituencies that switched their nominated candidate and those in which they did not (in which the candidate was dominant as well). This is an important robustness check for the party stronghold results, demonstrating that lower spending in party stronghold constituencies is driven by voter attachment to parties rather than to individual candidates.

The *CandidateStronghold* results are also notable because of their implications for the effects of legislator experience. In the adverse selection model of Ashworth (2005) and Ashworth and Bueno de Mesquita (2006), constituency service is greater when there is greater uncertainty about legislators' underlying ability to deliver goods, leading to the prediction that legislators with less political experience would be more likely to exert effort on constituency service to build their reputation with voters as high ability candidates. We, however, do not find robust or significant evidence that dominant and experienced candidates, as in candidate strongholds, spend less of their MPLADS allocation. This is also the case if we substitute a different measure of experience – the total number of terms a legislator has served, regardless of whether they are consecutive.<sup>21</sup>

Research on the effects of legislator experience in the US finds that seniority is *positively* correlated with legislative activity (Shiller, 1995; Wawro, 2002; Padro' i Miguel and Snyder, 2004). The difference in results could be due to country context, but we believe that

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<sup>21</sup> On the other hand, since the MPLADS program was of fairly recent vintage and novel in the authority it gave to MPs to deliver benefits to their constituencies, its introduction may have given legislators incentives to perform in ways that they had not done before, so that both experienced and new legislators felt the need to demonstrate their ability to perform this new role.

the more likely reason is our focus on a narrow, precise measure of effort dedicated to constituency service. Shiller and Wawro employ a measure of bills introduced; Padro' i Miguel and Snyder use subjective assessments of legislator performance by third parties (journalists, for example). All of these bundle together effort or effectiveness across all legislative tasks, among which are constituency service. . The fact that, in the aggregate, legislative activity, effort or effectiveness increase with seniority is not inconsistent with the possibility that constituency service, by itself, is unaffected by seniority (as we find), or actually falls, as Ashworth and Bueno de Mesquita argue.

### ***Seat reservations and MPLADS***

The Table 2 results also indicate that MPs in reserved constituencies, on average, exert no more effort on constituency service than do MPs in unreserved constituencies: there is little difference in MPLADS spending across the two types of constituencies. The point estimates of the coefficient on the indicator variable *Reserved* are negative, but are small and imprecisely estimated. The strongest result, in column (3) of Table 2, indicates that reserved constituencies within states tend to reduce MPLADS utilization by three percentage points compared to the average spending in the state. Instead, the largest and most robust effect of reserved constituencies appears when a reserved seat is a candidate stronghold. A dominant candidate (one who has repeatedly won elections) in a reserved constituency uses 9 percentage points less of his/her MPLADS allocations than dominant candidates in other districts. In contrast, the behavior of reserved candidates is not robustly different across party strongholds and non-strongholds (results not reported).

## **6. Robustness of estimates to alternate measures and omitted variables**

In several cases, theoretical considerations led us to construct dichotomous variables even though more continuous information is available. Our results are insensitive to the use

of alternative variables, however. For example, dichotomous measures are arguably the best way to identify constituencies as strongholds, but one could also employ a more continuous measure, one that sums the number of elections, 1991 – 1998 (maximum equaling three) that the 2000 incumbent party or legislator had won. Substituting these variables for the candidate and party stronghold indicator variables, we find a significant negative association between the number of elections won and MPLADS utilization, consistent with the results we report.

The party stronghold results are also robust to including alternative measures of electoral competitiveness. For example, using the incumbent vote share in the 1999 elections in place of the margin of victory has no effect on the results; the coefficient on incumbent vote share is also small and insignificant. We also replace the candidate stronghold indicator variable as a measure of legislator experience with the number of years prior to 1999 that the 1999 incumbent had served in the legislature. This has no effect on results: the variable is insignificant and party strongholds continue to have a strong negative impact on MPLADS implementation.<sup>22</sup>

A number of omitted effects could affect the estimated coefficients on party stronghold in Table 2 if they are correlated with constituency-specific characteristics that also affect MPLADS spending,  $\eta_d$ . We consider several candidates for such omitted variables and find that our estimated effects for party and candidate dominance are robust to these alternate explanations. We report these results in Tables 4 and 5 where the basic

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<sup>22</sup> These results are available upon request. We don't include them here in the interests of brevity.

specification (1) with state fixed effects is augmented with each of the potential omitted variables.<sup>23</sup>

### ***Political fragmentation***

Banerjee and Somanathan (2007) argue that political fragmentation may reflect greater electoral competitiveness in a district and therefore be correlated both with a lower likelihood of a constituency being a party stronghold and a higher likelihood of legislator effort towards MPLADS. Column 1 of Table 4 includes a variable measuring political fragmentation of a constituency in terms of distribution of votes across the major political parties that compete in national and state elections. The fragmentation variable for each constituency  $d$  in any given election year is defined as in Banerjee and Somanathan (2007) as:

$$PoliticalFragmentation_d = 1 - \sum_{i=1}^n \mu_{id}^2 \text{ where } \mu_i \text{ is the vote share of the } i^{\text{th}} \text{ political party}$$

contesting elections from the constituency. The specification in column (1) of Table 4 controls for the average of this measure of political fragmentation across the four elections of 1991, 1996, 1998, and 1999 in our specification. The variable has no effect on the size and significance of, *PartyStronghold* and is itself not associated with MPLADS spending.

### ***Social fragmentation***

Research (e.g., Banerjee and Somanathan 2007) has shown that social fragmentation reduces the provision and changes the composition of local public goods in electoral constituencies. If it were the case that social fragmentation increased political incentives to utilize MPLADS and at the same time reduced the likelihood that a constituency was a party stronghold, its omission would bias the political stronghold coefficient in a negative

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<sup>23</sup> The results of estimation without state fixed effects for *PartyStronghold*, *Reserved*, and *Reserved\*CandidateStronghold* are identical to those reported in Tables 5 and 6 with state fixed effects.

direction, potentially accounting for the results we report. However, we test the effects of social fragmentation directly by including a variable received from Banerjee and Somanathan (2008), which measures caste and religion-based fragmentation using population data from the Census of 1991. Column (2) of Table 4 reports these results. As they predict, social fragmentation has a negative effect on MPLADS spending, though it is not precisely estimated. More importantly, the coefficient on *PartyStronghold* remains significant and large, though with slightly reduced magnitudes.

### ***Electoral volatility***

Where voter behavior is subject to greater shocks or for some other reason is expected to have a larger random component, any given effort by politicians to satisfy constituent interests has a lower payoff. Political incentives to satisfy constituent interests, for example through full utilization of MPLADS, are therefore reduced. Greater volatility is also likely to be negatively correlated with being a party stronghold, so it may be that the estimated negative correlation between party strongholds and MPLADS spending is driven by the exclusion of electoral volatility from our previous specifications. To address this possibility, the specification in column 3 of Table 4 includes a variable measuring volatility of elections in a constituency. The measure comes from Chhibber and Nooruddin (2008):

$$Volatility_d = \frac{1}{2} \sum_{i=1}^n |\mu_{i,t} - \mu_{i,t-1}|$$

where volatility in constituency  $d$  between two consecutive

elections at times  $t$  and  $t-1$  is measured as the sum of change in vote shares of  $n$  political parties.<sup>24</sup> We average this measure of volatility across the elections of 1991, 1996, 1998, and 1999. The results in column (3) of Table 4 show that including electoral volatility has little

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<sup>24</sup> This sum is divided by 2 to avoid double counting those vote shares that shifted from one party to another. This is explained in Chhibber and Nooruddin (2008).

effect on the magnitude and no effect on the significance of *PartyStronghold*. Electoral volatility is itself insignificantly correlated with MPLADS spending.

***Political affiliation with state government***

A party's control of the state government allows it considerable leverage over broader spending instruments under the state and perhaps even over district bureaucrats who play a key role in implementing the MP's proposed works. A constituency in which the 1999-elected legislator belongs to the same party as the state chief minister may therefore exhibit higher MPLADS spending either because it is easier for the legislator to push through his proposed public works, or because the party is more likely to see MPLADS as "fungible" and use the program to supplement state budgets towards the general provision of infrastructure. Although there is no reason to expect that party or candidate stronghold constituencies are correlated with their legislator's affiliation with the state government, the necessary condition for this affiliation to give rise to a spurious negative correlation between party strongholds and MPLADS spending, we include an indicator for political affiliation to examine its influence.

The specification in column (4) of Table 4 includes an indicator variable which equals 1 when the constituency's incumbent legislator belongs to the same political party as the state chief minister and zero otherwise. For only this specification we report results without state fixed effects, but with standard errors clustered by state, because several states experienced state elections in the middle of the 1999-elected MP's term in office. This resulted in all MPs in these states being affiliated with the state government for at least some years of their term in office. Indeed, the four states with large positive fixed effects on MPLADS spending—Madhya Pradesh, Rajasthan, Tamil Nadu, and Uttar Pradesh—were the only large states that both experienced elections in the middle of the 1999-elected MP's

term in office, and experienced a turnover in state political leadership, resulting in all MPs within these states being affiliated for some period with the state leadership.

The constituency-level results reported in column (4), Table 4, indicate that legislators who are affiliated with the state chief minister spend four percentage points more from their MPLADS allocation than legislators who belong to rival political parties. This is consistent with the argument that affiliation reduces the effort associated with MPLADS disbursements. However, the size and sign of the coefficient on party strongholds remain largely unaffected by the inclusion of the affiliation variable.

### ***Party-specific effects***

It is possible that unobserved constituency characteristics lead voters both to prefer one party overwhelmingly relative to the others, giving rise to party strongholds, *and* to prefer that incumbents exert effort on policies other than MPLADS. The omission of these characteristics in our specifications would then bias the *party stronghold* coefficient downwards, again potentially accounting for our results. We directly examine whether partisan differences in policy preferences drive the *party stronghold* effects by controlling for the party identity of individual legislators. We add indicator variables for legislators belonging to the Congress or BJP, to one of the Communist parties, or to one of the major state-based regional parties (where a “major” party is defined as one that has formed a state government, with Chief Ministers belonging to the party, and “state-based” defined as a party that has not contributed a Prime Minister at the helm of the national government). These results are reported in column 1 of Table 5. In column 2 we include average vote shares accruing to these parties in successive elections in the 1990s. The party identity of legislators and party vote shares have no independent effect and do not alter the estimated impact of *party stronghold*.



***Party access to other infrastructure projects***

Party stronghold districts might have a greater stock of public infrastructure because of a party's efforts to cultivate strongholds through targeted provision of national infrastructure projects to their favored districts. This would reduce the marginal benefit to district residents of additional public infrastructure, and so reduce the attractiveness of using MPLADS as an instrument of constituent service. We address this possibility by including measures of a constituency's stock of public infrastructure, particularly those provided through national projects that parties controlled.

Banerjee and Somanathan (2007) have matched electoral constituencies to the administrative districts for which the Census of India provides data on availability of public infrastructure. They have further identified some key public infrastructure that proliferated across all national electoral districts between 1971 and 1991, when a strong national party committed itself to universal coverage. Using their dataset, we control for five commune infrastructure variables, the proportion of villages in an electoral constituency that had a middle school, tap water, electricity, post and telegraph facilities, and paved roads, as measured by the 1991 Census. We also include population density as measured by the Census, as yet another district characteristic that might contribute to omitted variable bias. These results are reported in the final three columns of Table 5.

In the third and fourth specifications reported in Table 5, the size and significance of the coefficient on *PartyStronghold* remain unchanged. In the third specification with state fixed effects, the size of the coefficients falls slightly, suggesting that there is some correlation between a district being a party stronghold and its available public infrastructure from past public investments by state and national governments.

***Other unobserved constituency characteristics***

Two other unobserved constituency characteristics that might be important are opportunities for MP rent-seeking; and the extent to which constituency voters are informed about MP actions. The scope for these to bias our results is limited, though, by controls for state fixed effects and the inclusion of MPLADS spending prior to 1999. In addition, the most plausible arguments suggest that these omitted characteristics would exert no bias or a bias in favor of rejecting our hypothesis that party strongholds exhibit lower MPLADS spending. With regard to rent-seeking, the most plausible argument is that, insulated from competitive pressures by party dominance and only weakly supervised by party leaders, incumbent MPs have greater scope for channeling MPLADS disbursements to related contractors. However, this would imply *higher* MPLADS disbursements in party strongholds, not lower, as we find.

It could also be the case that MPLADS allocations are higher in some constituencies because of greater unobserved citizen information about MPLADS disbursements and MP performance. Our own evidence underlines the role that information played in triggering a large upsurge in MPLADS disbursements. Citizen information may be, in turn, inversely related to party dominance: in party strongholds, the media are more likely to be controlled by a single party, which suppresses information about MP shirking. This argument is implausible, however, since media (newspapers, radios) are organized at the state level, or at least supra-constituency level; state fixed effects therefore capture unobserved media influence on MPLADS disbursements. In addition, the argument is essentially one of electoral competitiveness: when elections are non-competitive, citizens are more poorly informed and MP shirking is greater. Other measures of electoral competitiveness

(candidate dominance or electoral margin of victory) are generally not significant in our estimations, though.

## 7. Conclusion

Most explanations of large inter-jurisdictional variations in policy outcomes in democracies are institutional (e.g., the electoral rules of the game); informational (what citizens know about the effects of politician actions on their welfare); and societal (e.g., the extent of social polarization). Our evidence underlines the importance of a generally neglected factor: variations in voter attachment to political parties. These results have implications for several lines of research, and for policy.

First, the results are direct evidence of the significant policy effects of voter attachment to candidates and parties; these effects merit more investigation. For example, while our data have allowed us to show what legislators do *not* do in constituencies that exhibit voter attachment, we have little evidence on whether they reallocate their effort to non-legislative endeavors (shirking), to effort on the provision of public goods, or to party-building. Similarly, our mixed evidence on incumbent experience and constituency service argues for greater empirical and theoretical examination of the role of legislator experience in constituency service.

Second, the policy importance of voter attachment underlines the need to understand it better. How and under what conditions, for example, do voters develop an ideological or social affinity for parties and candidates, independent of their policies? What is the contribution that candidate selection makes to attachment?

Third, a growing body of influential research points to the large impact that citizen information has on government policy performance. The qualitative evidence that we present on the evolution of MPLADS reinforces the catalytic role of information: MP

disbursements of their MPLADS allocations surged with a dramatic increase in media focus on those disbursements. However, the evidence suggests that a complementary factor was critical for media influence to have this impact: the production of a report by a non-media organization (the Auditor General). This suggests that the *information-gathering* and *information-dissemination* roles of media need to be separately analyzed.

Fourth, these results are important for understanding the interaction of political and economic development, and in particular the role of political parties in supporting economic development. Keefer (2006) finds substantial evidence that countries governed by programmatic parties (e.g., parties in which policy labels are informative to voters) prefer more public and fewer private goods. Kitschelt and Wilkinson (2007) argue that clientelist policies emerge when voters are personally attached to politicians. Our results further this line of research. While we cannot characterize parties as programmatic or clientelist, we do show for the first time that voter attachment to parties significantly suppresses incumbent legislators' efforts to provide pork and services to their constituents.

Finally, the evidence here indicates that evaluations of constituency development funds in nascent democracies of Africa and East Asia should take into account their effect on the development of programmatic political parties. On the one hand, the results here suggest that they will have less of an impact when voters are attached to political parties. On the other hand, they raise the possibility – though one that requires much more investigation – that CDFs could slow the emergence of programmatic political parties.

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<b>Table 1: Summary statistics for 483 constituencies</b>					
<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>Std Dev.</b>
MPLADS cumulative disbursements/entitlements, 1999-2004 (minimum = .19, maximum = 1.06).	.82	.85	.19	1.06	.15
Party stronghold (winning party in 1999 also won elections of 1991, 1996, 1998)	.20	0	0	1	.40
Candidate stronghold (winning candidate in 1999 also won elections of 1991, 1996, 1998)	.09	0	0	1	.28
Reserved	.22	0	0	1	.42
Margin of victory (avg. over 1996, 1998, and 1999 elections of vote share of winning candidate – runner up vote share)	.11	.09	.01	.53	.07
MPLADS cumulative disbursements, 1993-end 1999 (rupees, millions)	31.1	31	8.6	48.5	7.3

<b>Table 2: Effect of Party Dominance and Reservations on Legislator Effort</b>				
Dependent variable: MPLADS cumulative disbursements/ allocations, 1999- 2004	(1) OLS, robust standard errors	(2) OLS, state- clustered robust standard errors	(3) State-fixed effects, robust standard errors	(4) Distinguishing between party strongholds that switched and retained candidates
Party stronghold (1-0)	-.10*** (.02)	-.10* (.06)	-.07*** (.02)	
Candidate stronghold (1-0)	-.01 (.03)	-.01 (.03)	.02 (.03)	
MPLADS cumulative disbursements, 1993- end 1999	.001*** (.0001)	.001*** (.0001)	.0003*** (.0001)	.001*** (.0001)
Margin of victory (avg)	.19* (.10)	.19* (.11)	.11 (.12)	.19* (.11)
Reserved seat (1-0)	-.02 (.02)	-.02 (.02)	-.03* (.02)	-.02 (.02)
N, R <sup>2</sup>	483, .15	483, .15	483, .36	483, .15
Party stronghold constituencies where candidate was switched	F-test for equality of coefficients: F(1, 26) = 1.01 Prob>F = 0.33			-0.09* (0.05)
Party stronghold constituencies that are also an incumbent stronghold				-0.12*** (0.05)
N.B. Robust standard errors in parentheses. In columns 2 and 4, these are clustered by state (27 states or clusters). Column 3 includes state fixed effects. All regressions include a constant (not reported). * indicated a p-value of .10, ** a p-value of .05, and *** a p-value of .01.				

**Table 3: State fixed effects ( $\lambda_s$ )**

<i>State</i>	<i>Estimated effect</i>	<i>t-statistic</i>
Andaman and Nicobar Islands	.13	5.81
Arunachal Pradesh	.11	2.03
Bihar	-.03	-1.20
Chandigarh	.05	2.27
Dadra and Nagar Haveli	.11	2.71
Delhi	-.13	-2.99
Goa	-.04	-0.86
Gujarat	.02	0.56
Haryana	.09	2.75
Himachal	.10	2.53
Karnataka	.05	1.32
Kerala	-.05	-1.48
Lakshadweep	-.22	-6.04
Maharashtra	-.03	-1.00
Madhya Pradesh	.07	2.28
Manipur	.06	0.61
Meghalaya	.18	5.05
Nagaland	.03	0.64
Orissa	-.08	-2.02
Pondicherry	-.08	-3.50
Rajasthan	.11	3.97
Sikkim	.15	6.67
Tamil Nadu	.12	3.76
Tripura	.03	1.02
Uttar Pradesh	.07	2.70
West Bengal	-.18	-4.61

*N.B.* State dummies, with the exception of Andhra Pradesh, were added to the specification in Table 2, column 1. The resulting coefficient estimates are reproduced in Table 4. *t*-statistics are in parentheses.

<b>Table 4: Including Omitted Variables</b>				
Dependent variable: MPLADS cumulative disbursements/ allocations, 1999-2003	(1) Political Fragmentation	(2) Caste and Religion Fragmentation	(3) Electoral Volatility	(4) Political Affiliation (without state-fixed effects)
Omitted Variable	-.05 (.11)	-.11 (.11)	.12 (.09)	.04*** (.01)
Party stronghold (1-0)	-.07*** (.02)	-.05*** (.02)	-.06*** (.02)	-.11*** (.06)
Candidate stronghold (1-0)	.06* (.03)	.03 (.03)	.06* (.03)	.04 (.03)
Reserved seat (1-0)	-.01 (.02)	-.01 (.02)	-.01 (.02)	-.01 (.02)
CandidateStronghold*Reserved	-.14*** (.06)	-.12** (.05)	-.14*** (.06)	-.13*** (.05)
MPLADS cumulative disbursements, 1993-end 1999	.0003*** (.0001)	.0003*** (.0001)	.0003*** (.0001)	.001*** (.0001)
Margin of victory (avg)	.09 (.12)	.13 (.11)	.08 (.12)	.19* (.11)
<i>N</i> , <i>R</i> <sup>2</sup>	483, .38	441, .40	483, .38	483, .18

*N.B.* Specifications and estimation strategy are the same as in Table 2, column 3, including state fixed effects. Robust standard errors in parentheses. \* indicated a p-value of .10, \*\* a p-value of .05, and \*\*\* a p-value of .01.

<b>Table 5: Constituency party preferences and district public good endowments</b>					
Dependent variable: MPLADS cumulative disbursements/allocations, 1999-2003	(1)	(2)	(3)	(4)	(5)
	Controlling for party affiliation of 1999-elected MPs (Congress, BJP, CPI-CPM, State regional party)	Controlling for average vote shares received by Congress, BJP, CPI, CPM, State regional party in the district over 1991, 1996, 1998, 1999 elections	Controlling for constituency population density and proportion of villages with various public goods		
			Robust standard errors	State-clustered standard errors	State fixed effects
Party stronghold (1-0)	-.06*** (.002)	-.06*** (.002)	-.087*** (.00)	-.09 (.10)	-.05*** (.01)
Candidate stronghold (1-0)	.05 (.09)	.06 (.05)	.04 (.24)	.04* (.37)	.03 (.29)
Reserved seat (1-0)	-.01 (.42)	-.01 (.51)	-.007 (.70)	-.007 (.74)	-.01 (.45)
CandidateStronghold*Reserved	-.14*** (.01)	-.15*** (.01)	-.15*** (.02)	-.15*** (.02)	-.11*** (.03)
MPLADS cumulative disbursements, 1993-end 1999	.00025*** (.01)	.00027*** (.01)	.0006*** (.000)	.0006*** (.000)	.0003*** (.01)
Margin of victory (avg)	.07 (.55)	.10 (.44)	.06 (.58)	.06 (.67)	.13* (.23)
<i>N</i> , <i>R</i> <sup>2</sup>	483, .38	483, .38	441, .24	441, .24	441, .40

*N.B.* Column headings indicate additional controls; these coefficients are not reported. \* indicated a p-value of .10, \*\* a p-value of .05, and \*\*\* a p-value of .01.

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