Politics and Public Goods in Developing Countries: Evidence from the Assassination of Rajiv Gandhi

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Abstract: This paper employs an instrumental variables approach to identify the effect of party ideology on policy outcomes. Exogenous variation in party representation is generated by the assassination of the leader of the populist Congress Party, which occurred mid-way through the 1991 national elections, and which had the effect of dramatically increasing the probability of Congress victory for a sub-set of constituencies. Using this variation, I find that local representation by the ruling Congress party leads to a substantial increase in the provision of public goods favored by the poor, consistent with the party's expressed populist agenda. Among the salient changes are increases in the availability of drinking water and declines in infrastructure such as productive electrification and paved roads. I then compare these effects to those obtained through a regression discontinuity design, which generates exogenous variation in party identity for closely contested elections. Here I find little effect of Congress representation on public goods allocations, consistent with models emphasizing the importance of both the identity of the winning party and the margin of its victory in determining policy outcomes.

JEL codes: D71, D72, H41, O10

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1 Introduction

Democratic institutions are widespread in developing countries, amongst which are some of the largest, including Brazil, India, and Indonesia.[1] As such, political parties have become increasingly important actors in setting policy priorities and establishing the institutional and infrastructural framework for human and economic development. The role played by political parties in shaping policy outcomes, however, is uncertain. A classic model in the political economy literature predicts that where political parties care only about winning, there will be convergence in the policies proposed by competing parties to that preferred by the median voter, so that policy outcomes will be identical regardless of the identity of the winning party (Downs, 1957). Subsequent theoretical work has assumed parties to have preferences over policy outcomes in addition to electoral success, with the result that they will be willing to forego some probability of victory in exchange for a policy platform nearer their optima (Wittman, 1973; Alesina, 1988).

Empirical research has found that the characteristics of the candidates fielded by political parties can have substantial effects on policy outcomes, in line with models emphasizing the role of individual candidate tastes.[2] Chattopadhyay and Duflo (2004), for example, find that the random assignment of women to leadership positions in village-level governing institutions in rural West Bengal and Rajasthan leads to budgetary allocations more closely aligned with the expressed preferences of local women. Pande (2003) finds that political reservations for low caste and tribal groups in state legislatures in India leads to an increase of public goods targeting these groups. Empirical work on the the effects of political parties themselves, however, has tended to give ambiguous, and sometimes conflicting, results. In the US, Albouy (2009) finds

[1] Huntington (1991) describes the "second" and "third waves" of democratization, the former referring to the emergence of independent, democratic states that occurred with the liberation of erstwhile colonies in the aftermath of World War II, and the latter describing the extension of democracy to 35 countries the 1970s and 1980s, primarily in Latin America and Asia.

[2] Osborne and Slivinski (1996) and Besley and Coate (1997) present "citizen-candidate" models, in which, due to the inability to make policy commitments, candidates implement their most preferred policy upon election.

that the party identity of US Congressional representatives shapes local spending priorities;[3] in contrast, Ferreira and Gyourko (2007) find no effect of party identity on policy outcomes in US mayoral elections.[4] A similar ambiguity obtains in developing countries: Bardhan and Mookherjee (2010), for example, find little evidence for Left Front representation leading to an increase in the implementation of land reforms, an issue ostensibly important to the party and its core constituents.[5]

To better understand the role of political parties in shaping policy outcomes, I explore the effects of a random shift in party representation during India's 1991 national elections on local public goods allocations. The 1991 election was conducted over the course of two rounds of voting three weeks apart, with approximately half the constituencies voting in each round.[6] Rajiv Gandhi, the leader of the Congress party, was assassinated one day after the first round of voting, unleashing a wave of sympathy support for the Congress party, which substantially increased its vote share and probability of victory in those elections held in the second round. The instrument, therefore, is a dummy variable indicating whether a constituency held its election before or after the assassination of Rajiv Gandhi. Using this exogenous shift in the probability of Congress victory, I estimate the causal effect of Congress representation on public goods allocations.

The central finding of this paper is that where the Congress party is exogenously assigned representation of a constituency, there are substantial changes in the *composition* of public goods, and one which shows a prioritization of items favored by the poor. Drinking water (tap and handpump) coverage increase, while infrastructure availability declines – electrifica-

[3] Albouy (2009) examines the relationship between party preference, majority status, and government allocations from congressional elections in the US, finding that a state's delegation belonging to the majority party in Congress leads to increases in government expenditures. He also finds that the identity of the representative matters for the composition of government expenditures: Republican representatives are associated with increases in local military and infrastructure spending; while Democrats are associated with increases in housing and urban development, and possibly an increase in education expenditures.

[4] Ferreira and Gyourko (2007), using a regression discontinuity design on mayoral elections, find no effects of party identity on crime rates or the size and composition of government at the city level.

[5] The authors find some evidence for an inverted-U relationship between Left Front influence and land reforms, possibly indicating a "quasi-Downsian" effect, whereby a political moral hazard induces lower policy activism when parties win by larger margins.

[6] The second round of voting in fact occurred across two days, June 12th and 15th. This round of voting was not a run-off election, as would normally be implied by a multi-round format: due to the size of the population and the difficulty of accessing many areas, elections are held across multiple rounds, so that the state's limited resources may be adequately allocated to ensure the integrity of the vote.

tion (industrial and agricultural) where the politician is a non-incumbent; paved roads and telephone coverage where the representative is an incumbent. Depending on the specification used, there are also increases in government irrigation and primary education in Congress-held constituencies. These changes correspond to a 0.26-0.55 standard deviations increase in public goods classified as "pro-poor" in constituencies represented by Congress. This result is consistent with the party's configuration of support at the time, which was relatively skewed towards low-income and other marginalized groups, and also with the party's espoused populism from the 1970s onwards.

Much of the previous empirical research exploring the role of political parties in developing countries has focused on the effects of parties on the allocation a single public good, seeking to determine whether parties will preferentially target the item towards their own supporters. For example, Miguel and Zaidi (2003) look at the effect of a district's having a parliamentary representative from the ruling party on local education spending in in Ghana. Vaishnav and Sircar (2011) explore the extent to which education spending is directed to constituencies decisive for winning state power in Tamil Nadu ("swing constituencies"), or instead to constituencies strongly supportive of the party ("core constituencies"), the ostensible *raison d'être* of the party.[7] Bardhan and Mookherjee (2010) give emphasis to the ideological aspect of policy interventions, seeking to establish the influence of party ideology on policy outcomes through an analysis of the effect of Left Front party representation on the implementation of land reforms, the latter being a policy associated with the left. In this paper, I identify the policy effects of party ideology through an analysis of the relationship between Congress representation and local changes in the composition of a list of public goods varying widely in the preference accorded them by different classes of society.

[7]These empirical results are explained through an influential class of models exploring the tension between preferential patronage and electoral exigency in settings where parties have durable affiliations with particular social classes. Cox and McCubbins (1986) have parties targeting benefits towards their "core" constituencies, and levying taxes upon the constituencies of other parties. The reason for this is not party preference, but rather the party's greater contact with, and knowledge of, its core constituents; core-targeting, in this framework, is the more effective and reliable strategy for maximizing vote share, due to the uncertain returns from targeting resources to constituencies less familiar to the party. Dixit and Londregan (1996) embed the Cox and McCubbins result in a model that has core-targeting as only one of two possible outcomes: where neither party enjoys an advantage in the allocation of resources to sub-groups within the population (due, for example, to the rise of the bureaucratic state), it is "swing" voters that will be targeted with government spending, as this is the group most delicately balanced between the two parties, and therefore most amenable to persuasion by patronage.

This is one of the few papers to use an instrumental variables strategy for identifying the effects of electoral outcomes,[8] with most previous research generating random variation through a regression discontinuity design.[9] While it is widely understood that identification using an RD yields local average treatment effects only within the vicinity of the discontinuity, this qualification may be particularly important in political contexts, where the threshold employed suggests a sort of group indifference across outcomes – whether due to convergence in policy platforms across the rival political factions, or the irrelevance of the electoral outcome to the policy of interest – or where ex post behavior may be adapted based on proximity to the threshold. The use of an IV allows me to test the generalizability of estimates obtained through the RD design, and to assess the extent to which electoral pressures for policy moderation may obscure party preferences in closely contested elections. Consistent with these concerns, the results obtained with the RD are generally insignificant and always quite small, in stark contrast to those obtained using the IV. In this respect, my paper resembles the paired papers of DiNardo and Lee (2004) and Lee and Mas (2011) on the effects of unionization on firm outcomes. The first of these papers employed a regression discontinuity design to determine whether unionization led to changes in wages or the probability of firm survival, and found that the results were small and statistically insignificant. Looking instead at the relationship between the margin of loss or victory in a unionization election and the cumulative two-year stock returns to the firm, Lee and Mas (2011) found substantial negative effects of unionization on stock returns when the margin of victory was high, but with little evidence of a discontinuity at the victory threshold. This, the authors suggest, is due to a policy convergence of the union and management, leading to identical policies on either side of the threshold.

To reconcile the conflicting findings of the IV and RD designs, I argue for the importance of the margin of victory in mediating the effects of electoral outcomes. The IV and RD strategies

[8] Other examples include the fore-mentioned Bardhan and Mookherjee (2010), who use national political trends interacted with local incumbency to generate variation in local political outcomes; and Jones and Olken (2005), who use natural deaths to estimate the effects of national leadership on economic growth rates. It should be noted that Jones and Olken (2009) estimate the direct effect of assassinations on institutional and conflict outcomes; the assassination is not used as an instrument, and would not satisfy the exclusion restriction were it used as an instrument for leadership changes.

[9] It should be noted that the RD has an IV interpretation, so that the distinction is more precisely given as that between IVs which identify party effects in the vicinity of the discontinuity (the RD), and IVs identifying party effects for a broader range of election margins.

capture LATEs differing across multiple dimensions, the most of conspicuous of which being the competitiveness of the election: while the RD necessarily identifies party effects for closely contested elections, the assassination IV induces variation in electoral outcomes across a wide range of victory margins. A large literature can be cited as to why the margin of victory might be important for determining the influence of parties on policy outcomes. Closely contested constituencies, for example, may be characterized by policy convergence across rival parties due to electoral pressures for policy moderation. Alternatively, elections may have a signaling component, so that the margin of victory communicates the underlying support for the proposed policies, in response to which politicians may alter the policies for the sake of future electoral success, or due to constraints faced in their implementation. Insofar as such margin-of-victory effects obtain, the IV design used here will yield local average treatment effects more general than those found with the RD.

The magnitudes of the effects uncovered with the IV are surprisingly large, and indicate a substantial role for party preference and electoral outcomes in the distribution of public goods, independent of local population characteristics. This is consistent with the observation of Banerjee et al. (2008), that the social characteristics so often invoked in the political-economy literature can explain only a small amount of the variation in observed public goods provision, and that top-down interventions – British versus French colonialism; the idiosyncrasies of local monarchs; the policies of authoritarian states; the priorities of international development organizations – have also played a large role in determining past and present distributions of public goods.

2 Background

2.1 Political Context

The 1991 Indian general election represented a watershed in the political and economic history of the nation. A balance of payments crisis had been building since the end of 1990, culminating in July's currency devaluation a mere month after the election. A raft of economic reforms would commence under the stewardship of the incoming Prime Minister, Narasimha Rao, and the Minister of Finance, Manmohan Singh, that would be widely credited for the

take-off in economic growth that began around this time. Simultaneously, the rise of a more aggressive brand of communal politics would call into question the secular character, and indeed the very viability, of the state. In this election, the right-wing Hindu-nationalist BJP party would solidify its position as the principal opposition to the once-hegemonic Congress; while caste-based parties continued an ascent that would see them become major contenders for state and national power in the coming years (Jaffrelot, 1996, 2003). The electorate during this time was becoming increasingly restive, with the advantage enjoyed by incumbent politicians in earlier elections becoming a pronounced disadvantage from the 1991 election onwards (Linden, 2004). All national governments would now be coalitional affairs, with the myriad regional, ideological, and caste-based parties organizing themselves around the rival poles of Congress and the BJP.

The election of 1991 is often described as the competition between *mandal* and *mandir*, synecdoches for two competing aspects of communal politics at this time. *Mandir*, meaning "temple," refers to the controversy over the Babri Masjid mosque in Ayodhya. It was a widely held conviction amongst many Indians, particularly those populating the ranks the Hindu nationalist movement, that the mosque had been built on the site of an important Hindu temple destroyed by Muslim invaders in the 16th century. Having aggressively agitated for the "re-building" of a Hindu temple at this site throughout the 1980s, the BJP launched a highly effective campaign in late-1990 to rally support for this cause, which was widely credited with the success of the party during the 1991 elections.[10]

Equally important to the 1991 election was the decree by the Janata Dal-led governing coalition that the recommendations of the Mandal Commission be implemented, whereby quotas would be established for low caste groups in public employment and university admissions. The constitution had, since 1950, already given such preferences to the marginalized "Scheduled Castes" (SC) and "Scheduled Tribes" (ST), reserving to them jointly 22% of political representation, public employment, and university admissions;[11] the Mandal Commission recommended

[10]The leader of the BJP traveled the country on a "pilgrimage" to the city of Ayodhya, along the way mobilizing party activists and the local population, and attracting national media attention. The campaign had important localized effects, with the party realizing a swing of 8 percentage points in its vote share in constituencies visited, and a significant number of riots occurring along its path (Blakeslee, 2012). These local effects are likely relatively small compared to the national effects widely attributed to the campaign.

[11]See Pande (2003) for an analysis of the effect of political reservations for SCs and STs.

that the preferences for employment and university admissions be extended to the "other backwards castes" (OBCs), groups located above the SCs and STs in the social hierarchy, but nonetheless suffering significant social and economic disadvantage.[12] With the announcement in late 1990, there immediately ensued large, and often violent, protests across the country, with dozens of high-caste young people immolating themselves in the streets.

2.2 Assassination of Rajiv Gandhi

In the midst of these controversies, the governing coalition was dissolved, and new elections announced for May, 1991, a mere 18 months after the previous election. Elections are run by the Election Commission of India, an independent entity established in 1950 by Article 324 of the Indian Constitution for the express purpose of conducting elections free from political interference. It is a highly regarded institution both within India and amongst international observers (Pastor, 1999). At the time of this study, the Commission was responsible for operating approximately 900,000 polling stations, requiring the employment of some 4.5 million people (Gill, 1998). Due to the logistical difficulties of conducting so vast an operation while still ensuring the integrity of the vote, the Commission divides national elections across multiple rounds of voting, allowing it to multiply the resources deployed for each voter. Figure 1 shows which constituencies voted before and after the assassination.

The first round of voting, on May 20, had gone badly Congress, with the party securing 37% of the vote and winning 26% of the constituencies contested. Campaigning in Tamil Nadu on May 21, Rajiv Gandhi was assassinated by a Tamil militant. Heir to the powerful Gandhi dynasty – grandson to India's first prime-minister and son to anther – his assassination was deeply traumatic to the nation, and had the political effect of unleashing a powerful wave of sympathy support for the Congress party, whose appeal has always been intimately bound up with that of the Gandhi family. Moreover, the separatist overtones implied in the act served to discredit much of the electioneering of Congress's opponents, whose campaigns were based on particularist appeals to the interests of caste and religion, against the more secular and

[12]It was determined that 27.5% of positions would be allocated to these groups. Though their share of the population exceeds this number, due to the constitutional requirement that no more than 50% of positions may be reserved for marginalized groups, and with 22% already reserved for SCs and STs, 27.5% was the maximum permissible share.

universalist ideology of the Congress party.

Due to the assassination, elections were postponed to June 12 and 15. The tone of the campaign shifted decisively during this time against the prevailing polarizations of caste and religion, and the Congress party's fortunes in the second round of voting improved considerably. Figure 2 shows the distribution of the change in the Congress party's vote margin between the 1989 and 1991 elections, disaggregated by whether the constituency held its elections before or after the assassination. As can be seen, the distribution for constituencies voting after the assassination shows a pronounced rightward shift relative to those voting before.

2.3 Distribution of Public Goods

After decades of dereliction – first under British colonial rule, and then continuing through the early years of independence – national authorities in the 1970s initiated a significant expansion in public goods as part of a concerted effort to bring development to India's still staggeringly impoverished villages. Increasing electoral competition from the late-1960s onwards, coupled with the political mobilization of the lower orders of the social hierarchy, resulted in a political dispensation sharply incentivizing political elites to pay more than lip-service to the demands of those it had previously neglected (Wilkinson, 2006). Banerjee and Somanathan (2007) describe the details and mechanisms of this transformation, with the close correlation between public goods and socio-economic privilege of 1971 giving way to rapid improvements from 1971 to 1991 for precisely those populations previously neglected by the political elite. Through cross-sectional analysis, the authors show that social marginalization is negatively correlated with access to public goods in 1971, with districts populated by Muslims, Scheduled Castes, and Scheduled Tribes having lower access to education services, health facilities, drinking water, electricity, and communication facilities.[13] The decades between 1971 and 1991, however, witnessed a radical reversal of these patterns, with previously backwards areas catching up rapidly to the more advanced.[14] These changes were in large part driven by the Congress party's turn

[13] Interestingly, land inequality is associated with greater availability of schools, piped water, electricity, phone connectivity, post offices, and paved roads, likely due to the greater political clout of rural elites where inequality was high.

[14] A notable feature of the changes between 1971 and 1991 is the far greater improvement witnessed in Scheduled Caste areas as compared to Scheduled Tribe areas, which the authors argue is due to the success of the Scheduled

towards populist politics in 1971, when the party campaigned on an explicitly pro-poor platform, adopting as its slogan *garibi hatao* ("abolish poverty").

The improvement in public goods availability detailed by Banerjee and Somanathan (2007) from 1971-1991 continue through the period of this study, 1991-2001, and the convergence effects detailed there continue to dominate the patterns of change. Table 1 details the levels of public goods for 1991 and 2001, as measured by the percentage of villages having access to the indicated public good.[15] Among the more notable changes in the availability of public goods are: paved roads increasing from 47% to 62%; telephones from 11% to 44%; middle schools from 25% to 33%; local health sub-centers from 9% to 19%; tap water from 21% to 41%; handpump drinking-water from 58% to 75%; tubewell from 23% to 33%; industrial electrification from 37% to 56%; and irrigated land from 38% to 46%.

2.4 Class-Based Preferences over Public Goods

The public goods enumerated above vary in their relative importance to different classes of society. Unfortunately, there is no available national survey data on the relative preferences of different economic classes for the public goods in this study; while most items will have a fairly intuitive class character, rigorous empirical measures are lacking. For the purpose of classifying the public goods in our data set, therefore, I cite the observations of Bardhan and Mookherjee (2011), authors deeply familiar with the preferences of different economic classes in rural West Bengal. In the brief sketch given there, the poor are posited as giving greater weight to inferior goods such as "housing, sanitation, drinking water or BPL [Below Poverty Line] cards," as well as public schools; while the wealthy and landed classes have a preference for "roads and irrigation" and agricultural inputs. These observations are intuitive, and likely to be relatively consistent across much of the country. Because the list of public goods in my data set is considerably longer than that described by Bardhan and Mookherjee (2011), I adopt as an alternative classification scheme the following: "pro-poor" - drinking water[16] and primary

Castes in mobilizing themselves politically, even to the extent of establishing an independent party, whereas the Schedule Tribes remained dependent on the benefactions of the Congress party.

[15]The list of public goods is larger than that used in Banerjee and Somanathan, as later rounds of the census include a finer disaggregation of the constituent elements of electrification, drinking water, and health facilities.

[16]Well water is classified as not being a pro-poor item, as it was decreasing steadily between 1971 and 2001; and would be regarded as the traditional, and less preferred, means of securing access to drinking water

education; "non pro-poor" - agricultural and industrial electrification, irrigation, telephones, paved roads, health sub-centers, and secondary education.[17] The classification of agricultural electrification, irrigation, and paved roads as "non pro-poor" follows immediately from Bardhan and Mookherejee (2011); the inclusion of industrial electrification, telephones, and secondary education in this category are intuitive extensions of this classification scheme.[18] In table 2 are itemized the public goods according to these two classification schemes: "pro-poor" indicates that an item has been designated as preferred by the poor, and "non" indicates that the good is not relatively favored by the poor. A number of items have not been classified as falling into either category, due either to their not being goods provided by the government (e.g., various types of private irrigation), or because their levels are relatively small and unchanging (e.g., hospitals and health centers).[19]

The Congress party during these years was the party most closely aligned with the interests of the rural poor and other marginalized groups.[20] Though in the early years of independence representing a broad spectrum of the population in terms of caste, class, region, and religion, with the rise of Indira Gandhi in the late-1960s the party took a significant turn towards populism (Banerjee and Somanathan, 2007; Wilkinson, 2006). The Minimum Needs Program was launched in the mid-1970s to bring public goods to neglected rural areas; while a second wave of land reforms was initiated to enforce earlier reforms that had been in many ways subverted by rural elites. The decades between 1971 and 1991 witnessed the emergence of a diverse array of

[17]There will necessarily be ambiguity with some of these goods. For example, depending on the distribution of land ownership and the functioning of agricultural labor markets, extensions of irrigation could be beneficial to markedly different economic classes. In West Bengal, where tenancy reforms have been relatively successful in extending de facto property rights to previously marginalized tenants, irrigation may in fact have a pro-poor character (Banerjee et al., 2002); whereas in Bihar, with its large class of middling farmers and impoverished agricultural laborers, it is the first of these two classes that will benefit, with the latter deriving little immediate advantage.

[18]See Banerjee and Duflo (2009) for a discussion of India's government-run health centers, and the reasons why they are unlikely to be highly valued by the poor.

[19]It is important to emphasize that what matters for my purposes is the *relative* preference accorded various public goods. For example, while members of all classes will value primary education, wealthier households will be able (in fact, will prefer) to secure this service through private markets, and so will regard it as of lower priority as compared to low income households. A similar logic applies to drinking water: while wealthier households will also clearly value tap water facilities, because they will generally have hired household help, as well as access to handpumps and other private sources, the inconvenience of having to secure drinking water isn't as onerous as it is for poorer households.

[20]The states of West Bengal and Kerala are exceptions to this characterization, where the Left Front parties were the principal representatives of the lower classes.

opposition parties representing the myriad cleavages in Indian society, often forcing the Congress party to reactively adapt its electoral strategy according to the coalitions constructed by local rivals; the national character of the party nonetheless endured, with support continuing to come from a diverse cross-section of the population with an emphasis on the socially disadvantaged (Heath and Yadav, 1999).[21] The Congress party's class character becomes more conspicuous when contrasted with the two principal opposition parties of the time, the Janata Dal and BJP. The Janata Dal[22] was largely the party of the middling agrarian classes, for whom agricultural assistance, rural amenities, and government employment were highly valued. The BJP's base of support generally consisted of the higher castes, and the urban middle and upper classes, groups for whom infrastructure, amenities, and market reforms were the policies most valued. For my analysis, what matters is not the class affiliation of the Congress party in isolation, but rather the character of the party in comparison to that of its principal opponents.

2.5 Political Institutions and MP Influence

Given the centrality of state governments in many aspects of rural development, it is unclear that the identity of the central government MP[23] should have important effects on the allocation of local public goods. The 1950 Indian constitution establishes a federal system of governance. In the Seventh Schedule of the constitution are enumerated the responsibilities assigned the central and state governments, and those under joint jurisdiction. All international matters and issues of macroeconomic management are assigned to the central government, as are issues with inter-state implications. To the states are delegated issues such as public health, police and public order, agriculture, water, and land rights. Under joint authority are, among others, contracts, trade unions and labor disputes, forestry, economic and social planning, education,

[21] There existed significant state-level variation in this coalition, even to the extent of the party's being associated primarily with the upper castes and socially advantaged in states where the Left Front parties were ascendent. In addition, it should be noted that the analysis of Heath and Yadav (1999) is based on surveys from 1996 and 1998, so that the trends detailed there would have been only partially realized at the time of the 1991 election.

[22] Many important state-level parties, such as the Rashtriya Janata Dal in Bihar and the Samajwadi party in Uttar Pradesh, have splintered off from the Janata Dal, but continue to have a similar social profile.

[23] "Member of Parliament" – i.e., the constituency representative whose influence over policy I am trying to estimate.

and electricity (thought this last has been largely taken over by states).[24]

Despite this partitioning of power, the central government has long exercised influence over even those domains ostensibly the sole prerogative of the states. A succession of Five Year Plans, issue by the Planning Commission within the Central government, have established development agendas for State governments to pursue, with funds transferred to the states in pursuance of these objectives.[25] In recent years, more than half of the Central Assistance provided to state governments for rural development schemes comes in the form of Additional Central Assistance (ACA), which specifies the schemes to be financed, and often involves a measure of control by the relevant ministries within the central government (Saxena, 2007). The Centrally Sponsored anti-poverty Schemes and the Centrally Sponsored subsidy and infrastructure Schemes (CSS), initiated in the early 1970s under then prime minister Indira Gandhi, were deliberately designed to allow the central government to bypass the states in the provision of local public goods (Saxena, 2007).

In this setting, MPs are able to shape local public good allocations through their influence within the central government. For example, the fore-mentioned CSSs often explicitly mandate a role for the local MP in determining beneficiaries, which authority is widely and effectively wielded for electoral advantage (Wilkinson, 2006). An even more direct means of MP influence is through the Member of Parliament Local Area Development Scheme (MPLADS): established in 1993, with the ostensible purpose of increasing local political responsiveness, the MPLADS program allocates to each MP an annual grant of 10 million rupees ($250,000) for the purpose of pursuing local development projects (Keefer and Khemani, 2009).[26]

Politicians can also shape policy outcomes through their influence over local bureaucracies and village-level political institutions. One particularly powerful means by which politicians wield influence is through their ability to arrange for the transfer of civil servants to undesirable posts. Banik (2001) quotes a senior official as saying "large scale transfers are to place in position

[24] More recently, the 73rd and 74th amendments to the constitution, ratified in 1993, designated the village-level councils, "panchayats", as a third level of governance.

[25] Complicated political economy dynamics, based on party affiliations between center and state, and the size of state delegations in the central government, have played a significant role in shaping transfers to state governments (Rao and Singh, 2001a, 2001b).

[26] However, this could have made only a small contribution to the findings, as the sums involved were relatively small, and an average of only 36% of the available funds were spent in the first six years of the program.

those who will unquestioningly obey their political mentors;" and a civil servant explaining that "transfer is such a potent instrument that it can make or break an official." The author describes the effects of this system on policy: "officers considered to be loyal to the ruling party are expected to focus resources on programmes preferred by the ruling party in specific areas and for pre-determined sets of beneficiaries."[27] MPs and MLAs are also responsible for nominating members to the Block Development committees, administrative units below the district level that play a significant role in determining the development needs of the block (Wilkinson, 2006); and can also exercise influence through the village councils that have become increasingly influential in shaping and implementing local policy (Singh et al., 2003).

Through mechanisms such as these, elected officials play a substantial role in shaping the allocation of local pubic goods. Wilkinson (2006) estimated that MPs and MLAs played a significant role in determining the beneficiaries for projects accounting for 75% of the rural development budget in Tamil Nadu. Nayak et al. (2002) explain that the influence of the Central government and individual MPs over local expenditures was increasing during the years of this study:

> "... over the last decade, the Centre has had to bow to pressure from MPs and MLAs to extend schemes, increase budgets, change cost sharing ratios and channel resources to particular constituencies. The Centre meanwhile has expanded its own role by providing funding for sectors that used to be in the State purview such as pensions and basic minimum services."

3 Models and Mechanisms

The identification problem is likely to be considerable in estimating the effect of party identity on public goods provision. For example, if constituencies more supportive of the Congress party for

[27] Wilkinson (2004) and Bayley (1983) describe the functioning of this system in the context of the politicization of the police force, with "punishment posts" created for the purpose of the punitive transfer of officers resisting political interference. Wade (1982) details the workings of the canal irrigation bureaucracy in south India, showing how the procurement of coveted engineering posts requires payments to the Minister of Irrigation and the local MLA, with the government officials wielding power through their control over transfers within the bureaucracy.

reasons independent of policy commitments are offered less reward for their support, or feature a local leadership less active on behalf of constituents (Keefer and Khemani, 2009), then this will bias the estimated effect of Congress victory towards zero. Ideally, one would like to compare pairs of identical constituencies, randomly shifting the victory status of one member of each pair while leaving unobservables such as local platform and candidate characteristics untouched. While fixed effects methods might resolve some of the endogeneity problems, they would fail to account for time-inconstant unobservables, which will loom large in electoral settings.

Given these challenges, a popular solution in the literature has been the use of an RD identification strategy, which is particularly attractive given the sharp discontinuities in party representation generated by election margins. The RD design was first used in a political setting by Lee (2001), who estimated the advantage to incumbent candidates in US congressional elections, finding that incumbent congressional candidates are 40 ppts more likely to win the following election than non-incumbents. Subsequent research has employed RD designs for the estimation of electoral effects across a variety of outcomes: incumbency effects (Lee, 2001; Linden, 2004); drug trafficking and violence (Dell, 2012); education expenditures (Miguel and Zaidi, 2003); and the effects of unionization (DiNardo and Lee, 2004). Lee et al. (2004) use an RD not only to determine effects of party identity on roll call voting, but also to argue for a lack of policy convergence to the preferences of the median voter.

Regression discontinuity designs will necessarily identify the effects of electoral outcomes in the vicinity of the discontinuity, meaning that one must be cautious in the interpretations of the results obtained. For example, the extant literature typically models political parties as balancing the desire to promote their preferred policy outcomes against the necessity for policy moderation in pursuit of electoral success. Within this framework, closely contested elections will tend also to be those in which the parties have converged in their proposed platforms to that preferred by the median voter. Where such a dynamic obtains, RDs are likely to yield insignificant results.[28] In other models, however, the margin of victory may be less important, so that results obtained through an RD design have an interpretation generalizable away from the

[28]Ferreira and Gyourko (2007) and Lee and Mas (2011) explicitly cite such a mechanism as driving the null results they obtain using the RD design.

discontinuity. Citizen-candidate models tend to possess this character, with politicians unable to credibly commit to any policy other than that most personally preferred, so that all that matters for determining policy effects is the identity of the victorious candidate (Osborne and Slivinski, 1996; Besley and Coate, 1997).[29]

3.1 Modeling Electoral Effects

My principal interest in this paper is to identify the average treatment effect (ATE) for a change in party identity. Due to the potential for policy convergence in closely contested elections, the ability to do so through various identification strategies will be constrained according to the political model invoked. To frame the issues involved, I first present a simple model for the effects of party on policy outcomes:

$$y_i = \alpha + \beta PartyA_i + \varepsilon_i,$$

where $PartyA_i$ is a dummy variable indicating a constituency's being represented by party A rather than party B in a two-party model. In such settings, RDs can be employed to address the likely correlation of party with the error term, with flexible functions of the vote margin enabling causal identification of the local average treatment effect (LATE) of victory at the win/loss discontinuity. Where treatment effects are constant, the LATE identified by the RD will be identical to the ATE, allowing one to estimate party effects through an RD design.

Let us assume, however, that the effect of party also depends on the margin of victory:

$$y_i = \alpha + \beta_i PartyA_i + \varepsilon_i,$$

with $\beta_i = \beta(margin_i)$, so that the heterogeneity of the treatment effect is driven by its dependence on the margin of victory. The average treatment effect, β, is given by

$$\beta = \int \beta(margin) dB(margin).$$

[29] Lee et al. (2004), for example, find little evidence of policy convergence in US Congressional races: winners of narrowly contested elections are just as likely to vote along partisan lines as those winning by larger margins.

The use of an RD identification strategy will now yield

$$\beta_{RD} = y^{+} - y^{-} = \lim_{margin \downarrow 0} \beta(margin) + \varepsilon - \lim_{margin \uparrow 0} + \varepsilon = \beta(0) \lesseqgtr \beta,$$

assuming ε continuous at the discontinuity (Hahn et al., 2001; Imbens, Lemieux, 2008). In this setting, the RD will yield results of uncertain applicability to the universe of election outcomes. For example, if one invokes a model in which the implementation of the party's preferred policy is constrained by the need to appeal to the median voter, and if this constraint is characterized by a functional form having as a condition that $\lim_{marg \downarrow 0} \beta(margin) = 0$, then the regression discontinuity design will yield a null result even where party effects are substantial for larger vote margins.

Given these potential problems with estimation of treatment effects at the 0 margin, identification of a broader range of party effects would be assisted by a source of exogenous variation in electoral outcomes accompanied by greater variation in election margins. In other words, I would like an instrument, z_i, satisfying the normal conditions that $Cov(PartyA_i, z_i) \neq 0$ and $E(z_i \varepsilon_i) = 0$, without the restriction that $margin_i \approx 0$. I will subsequently show that the assassination instrument employed in this paper satisfies these requirements, allowing us to capture party effects even for elections that are not closely contested.

3.2 Policy Convergence and Signaling Models

In the previous discussion, I have extensively invoked models of electoral competition featuring a trade-off between optimal policy and electoral success. This class of models traces its genesis to the seminal work of Downs (1957),[30] in which political parties are driven inexorably towards median-voter convergence due to their concern only with winning, also known as the "Median Voter Theorem."[31] Subsequent models relax the assumption of politicians' caring only about victory, with the result of their making more realistic predictions of incomplete policy

[30] In fact, Hotelling (1929), who introduced the spatial model of competition, alluded to political competition as a possible application.

[31] The intuition for this result is that where politicians care only about winning, the competitive pressures of capturing the largest vote share will lead ineluctably to convergence on the preferred policy of the median voter, with any other strategy being subject to exploitation by a rival's locating his policy platform between the deviating policy and that preferred by the median voter.

convergence (Wittman, 1973; Alesina, 1988; Besley and Case, 1997). Within this framework, closely contested elections may be taken as evidence for some degree of policy convergence, and elections determined by a larger margin as evidence for the lack of such convergence.

A somewhat distinct literature, however, can also be invoked to understand the relationship between electoral margins and policy outcomes – namely, the literature on signaling function of elections.[32] Piketty (2000) models elections as including a signaling component, whereby voters communicate their preferences to one another in order to better coordinate optimal policy in future elections (with the extensions that such signaling can also influence future party policies). Meirowitz and Tucker (2005) present a model in which voters use relatively less important elections to send messages to candidates in subsequent, more important elections, forcing candidates in the latter to invest in "valence accumulation" through costly campaigning activities.[33] Razin (2003) presents a model in which the voters receive a signal about the state of the world, which implies an optimal policy response, and cast their vote in part to reflect the information gleaned from that signal. Insofar as candidates are policy-responsive, and would like their policy to match the true state of the world, this will lead to post-election adaptation of policy in light of the signal received through the vote share. Shotts (2006) presents a two-period model, in which period-one voting behaviors affect politicians' beliefs about voter preferences, and thereby influence period-two policies and electoral outcomes. In non-democratic systems, too, elections can have an important signaling function. Egorov and Sonin (2011) have dictatorships holding elections for the purpose of signaling to the population the underlying popular support of the party, in order to forestall popular uprisings that might occur were individuals aware of others' similarly aligned preferences. In Miller (2010) "electoral authoritarian" regimes hold elections in order to better determine the general level of support for the regime, and to identify which voters must be mollified with patronage and which with more substantial policy concessions.

[32] I limit the discussion to those models directly relevant to my analysis, while noting the broad scope of the electoral signaling literature, with electoral outcomes and candidate behavior communicate a wide variety or relevant information to voters and candidates (e.g., Roumanias, 2005; Kartik and McAfee, 2007).

[33] The authors state that a similar intuition would hold for a spatial approach, with adaptation along the policy margin.

4 Data

The unit of observation in this study is the parliamentary constituency. The data for Indian elections comes from the Election Commission of India[34] and covers all national-level elections since independence. Among the variables included are candidate names and gender, party identity, turnout, and votes. A perennial challenge in studies on Indian political economy is the matching of political and administrative data: though census districts and parliamentary constituencies are of similar size, and often substantially overlap, there are enough mis-alignments as to render a one-to-one matching infeasible. Moreover, with the partitioning of administrative districts, the rate of which has increased in recent years, the mis-matches become even more problematic in the second period of the study.

To solve this dilemma, I make use a finer disaggregation of the census data than has been used in previous studies, which generally resort to the district-level aggregation. The census data is collected at the village level, of which there are more than 500,000. Though it introduces some error into the administrative-political matching, I make use of the sub-district[35] aggregation, which is necessary for two reason: First, the socio-demographic and public goods data are stored in separate files, meaning they must be matched using the codes provided. However, the village codes in the two files are sometimes unreliable, and generate a large number of mis-matched observations. The sub-district coding, in contrast, is far more reliable, and allows for highly precise matching. Second, my research design requires the matching of the 1991 and 2001 census data. For this, I use the names of the sub-districts, which are relatively consistent across the two years. Matching the village-level data using this procedure, however, would have been impractical due to inconsistencies in the recording of names.

The matching of the administrative and political data is achieved through the use of ArcGIS. Shapefiles[36] for parliamentary constituencies are provided by the Electoral Commission of India; and the 2001 census data includes shapefiles at the village, sub-district, and district levels. The

[34] I am grateful to Leigh Linden for allowing me to use his digitized election data.

[35] These are the "taluks" and "tehsils," which are located between the district and village in the administrative apparatus.

[36] Shapefiles store locational vector coordinates for geographic features, as well as associated tables containing the attributes of those features.

sub-district boundaries, however, are imperfectly nested within the parliamentary constituencies. To match the two, I identify the geographic center (centroid) of each sub-district, and assign the sub-district to the parliamentary constituency within the boundaries of which its centroid falls. Figure 3 demonstrates how this is accomplished: each point is the centroid of a sub-district, and the boundaries give the delineation of a political constituency.

For a few variables – in particular, those on the ethnic composition of constituencies, and geographic and institutional details – data is reported only at the district level.[37] For these, I employ a slightly different matching strategy. Again using ArcGIS, I now impute to each constituency the mean value of the relevant variable of all districts falling across its boundaries, weighted by the percentage of the constituency composed of each district.

5 Results

5.1 Assassination Instrument

Formally, I model the victory of the Congress party as a linear function of whether the constituency holds its elections before or after the assassination:

$$\begin{aligned} Cong_i &= \alpha + \beta Assn_i \\ &\quad + \vartheta \mathbf{X}_i + \pi \mathbf{E}_i + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i, \end{aligned} \tag{1}$$

where $Cong_i$ is a dummy taking a value of 1 where a member of the Congress party represents constituency i, and $Assn_i$ is a dummy taking a value of 1 where the constituency holds its elections after the assassination. $\mathbf{X_i}$ is a vector of constituency characteristics, which includes the urbanization rate, the average population per village, and the number of villages; and $\mathbf{E}_i$ a vector of electoral characteristics, including dummies for constituencies in which there were seat-sharing arrangements between opposition parties, SC/ST-reserved constituencies, and the party's incumbency status. I also allow for a flexible function of the prior election margin, $f(Marg_{1989,i})$, specified as a cubic in the Congress party's 1989 vote margin. State fixed effects

[37] Because of the political sensitivities surrounding caste and religion, the census gives only limited information on these matters. The 1931 Census was the last that included a detailed information on caste. While information on the numbers of Muslims has continued to be released, the numbers given are only at the district level.

are included, σ_i, and the error terms, ε_i, are iid.

As an alternative, I also specify the first stage as including an interaction of the assassination with the party's absolute margin of victory in the 1989 election:

$$\begin{aligned} Cong_i &= \alpha + \beta_1 Assn_i + \beta_2(Assn_i \times AbsMarg_i) + \beta_3 AbsMarg_i \\ &\quad + \vartheta \mathbf{X}_i + \pi \mathbf{E}_i + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i. \end{aligned} \tag{2}$$

The latter specification is justified by the likely dependence of the effect of the assassination on the prior competitiveness of the constituency. If one models the direct effect of the assassination to have been a constant increase in vote share for all constituencies, and assuming some level of vote stability across elections, then failing to account for the party's prior level of support will reduce the first-stage precision, as is subsequently shown.

Because there will certainly be heterogeneity in potential outcomes, it will be necessary not only that the instrument satisfy the two conditions that $Cov(Cong_i, Assn_i) \neq 0$ and $E(Assn_i \varepsilon_i) = 0$ (the latter conflating the exclusion restriction and the independence assumption), but also that there be *monotonicity* in the effect of the instrument on the explanatory variable (Angrist and Pischke, 2008). In this case, the requirement means that, with random coefficients in model (1), $\beta_i \geq 0$ for all i. This assumption is justified by accounts at the time, which describe the assassination as having had either a positive or null effect on the election (Kumer, 1991). In results not shown, I find that the effect of the assassination is positive or null across the most relevant aspects of political and socio-economic heterogeneity.

5.2 Treatment Balance

The most significant challenge to the identification strategy is that the assassination instrument may be correlated with the second stage error term, whether due to a failure of the exclusion restriction or a correlation of the instrument with potential outcomes (Angrist and Imbens, 1994). As argued below, the exclusion restriction will be satisfied; nevertheless, for the instrument to be valid, it will still need to satisfy the independence assumption – i.e., that it be "as good as randomly assigned" (Angrist and Pischke, 2008) – meaning that instrument cannot

be correlated with unobservable constituency characteristics in the second stage error term.[38]

Of the 449 constituencies in my sample, 206 voted before the assassination, and 243 after. Table 3 compares the constituencies across a variety of economic and social characteristics. Column (3) compares the means excluding all controls, column (4) includes state fixed effects, and (5) adds a control for the urbanization rate. When state fixed effects are not included, there are substantial differences across the samples, which is unsurprising given that 10 of the 15 states voted entirely before or after the assassination.[39] The inclusion of state fixed effects, however, largely removes these differences. In column (4), we see that there is essentially no difference in the professional distribution of the labor force, save for a 1.8 ppts larger share of the population being cultivators, and a 0.4 ppts smaller share being involved in construction. Support for Congress is indistinguishable across the samples. The only remaining differences are that constituencies voting after the assassination have a 1.2 ppts smaller share of the population being brahmins (significant at the 1% level), an ethnic fractionalization rate 3.1 ppts higher (significant at the 10% level), a slightly less steep topography (0.1), and a 9.6 ppts larger share of land having had the landlord-based tenurial system (*zamindar*) under British rule (Banerjee and Iyer, 2005). The inclusion of an urbanization control removes the significance of the difference in construction employment, and reduces the magnitude and significance of the difference in cultivators; the differences according to ethnic fractionalization, brahmins, steepness, and landlord-tenure, however, remain. Given the smallness of these differences, however, and the small magnitude of the correlations of these variables with public goods reported in Banerjee and Somanathan (2007), they are unlikely to have had any sizable effect on the results. In alternative specifications, these variables are included as controls, and are not found to significantly alter the results.

It should be emphasized that the inclusion of state fixed effects is basically sufficient for establishing sample balance. This is important, because I are arguing that the instrument is essentially randomly assigned, which would be less plausible if an elaborate set of controls

[38] As discussed in Angrist and Pischke (2008), the condition that the instrument not be correlated with the error term subsumes two different requirements: (1) that the instrument only affects the outcome of interest through the endogenous regressor; and (2) that the instrument is not correlated with potential outcomes.

[39] The 5 states holding elections both before and after the assassination accounted for approximately 50% of the entire sample.

were required for achieving sample balance. The sample being essentially balanced across the instrument with the inclusion of these minimal controls, it is likely that it will be balanced on unobservables as well.

5.3 First-Stage Regressions

Figure 4 shows the Congress party's 1991 vote margin plotted against its 1989 vote margin for constituencies voting before and after the assassination. As can be seen, there is a significant upwards shift in vote margins across the 1989 distribution. The shift in vote margins translates to a substantial change in the probability of victory, as seen in figure 5, which plots the probability of victory in 1991 against the 1989 vote share, disaggregated by the assassination status. The effect appears to be largest for constituencies in which the party had previously either lost by a margin of less than 10, or won by a margin of less than 20, consistent with the prediction motivating the use of model (2) in the first stage regression.

Table 4 shows the first stage results. Columns (1)-(6), panel A, give the uninteracted effect of the assassination on three electoral outcomes: vote share, margin of victory, and probability of victory. The control variables are as described above. The results are presented in alternating columns with and without state fixed effects. Model (1) gives the following results: The assassination yields an increase of 7.381 percentage points in Congress vote share without state fixed effects, and 6.118 ppts with the inclusion of state fixed effects, both significant at the 1% level. Congress's election margin increases by 10.148 and 8.404 ppts, with and without state fixed effects, again significant at the 1% level. Finally, the probability of victory increases by 25.6 and 23.3 ppts for the two respectively, significant at the 1% level. Panel B shows the results from model (2), where the assassination variable is interacted with the absolute margin of the election margin for the Congress party in the prior election. The Congress party received an increased vote share of 7.044 and 5.349 ppts, with and without state fixed effects, and the election margin increases by 8.162 and 7.138, with all coefficients significant at the 1% level. Consistent with the logic of the assassination's having a larger effect on the probability of Congress victory where the election had previously been closely contested, the coefficients on the uninteracted assassination variable are 35.5 and 32.6 ppts, significant at the 1% level, with the effect declining in the

absolute value of the Congress party's previous vote margin. It must be emphasized, however, that it is not just closely contested elections that are being swung by the assassination: as was seen in figure 5, the change in the probability of victory occurs across a broad range of the 1989 vote margin distribution.

The F-statistics in the first-stage regressions are reassuringly large. For model (1), the F-stat for the three electoral outcomes (vote share, vote margin, probability of victory) are 37.951, 28.622, and 26.231, respectively, when including state fixed effects. Incorporating the interaction of assassination with the absolute value of the prior vote margin, the F-stats are 17.133, 9.828, and 24.686 across the three electoral outcomes. As is readily apparent, the F-stats for the victory outcome easily satisfy the weak instruments test (Stock and Yogo, 2005).

The identifying assumption is that the assassination affected the outcome variable only through the change generated in the identity of the party representing the constituency, with the additional requirement that it was not correlated with potential outcomes. The principal effect of the assassination, I posit, was a general short-term boost in support for the Congress party across all constituencies, which necessarily shifted the likelihood of Congress victory for only that sub-set of constituencies voting after the event. We have already seen that the two samples are largely identical in their baseline characteristics, so that the independence assumption has arguably been satisfied. Figure 6 shows the probability of victory for all four elections between 1991 and 1999 plotted against the 1989 vote margin. There is no evidence for enduring effects of the assassination beyond the 1991 election. Voter sympathies, it seems, were similarly affected across constituencies; the only difference is the effect on the 1991 electoral outcome due to the sequence of voting. This evidence is far from conclusive, as it conflates popular sentiments due to the assassination with incumbency effects in places won due to the assassination, but I take it as supportive of the contention that the effect was largely ephemeral, and had no differential long-term consequences across pre- and post-assassination constituencies; and that, therefore, the exclusion restriction is satisfied.[40]

[40]In addition, I would note the absence of any intuitive reason as to why the assassination should have differentially affected pre- and post-assassination constituencies aside from its effect on the electoral outcome, as it was one of the more important events in post-independence Indian history, and widely experienced as a national tragedy.

5.4 IV Results

5.4.1 Specifications

Having established the validity of the instrument, I now turn to the central result of the paper. To identify party effects, one would need to disentangle the effects of majority status from party identity (Albouy, 2009) by estimating an equation of the form $y_i = \gamma Majority_i + \rho PartyA_i + \varepsilon_i$ in a two-party model. However, because the setting includes the results of only a single election, majority status and party identity will be entirely collinear, thereby preventing the independent identification of the two. I justify the preferred interpretation through narrative reasoning, acknowledging the possibility that the results identify a generic ruling-party effect.

During the ten year span covered in this study, there were four national elections, in 1991, 1996, 1998, and 1999. The 1996 and 1998 elections led to brief, minority governments, while the 1999 election occurred a year before the commencement of the 2001 census, and so would have presumably had little effect on the outcomes of interest. The public goods data is available for the 1991 and 2001 censuses, which are collected primarily during 1990 and 2000. Given these characteristics of the data, and given the instrument's validity for only the 1991 election, I adopt as the baseline model a cross-sectional regression of the 2001 level of public goods on political outcomes in the 1991 national election, controlling the 1991 baseline levels of public goods. Because the 1991 election determined political representation for only five of the ten years in question, the results should be taken as a lower bound on the influence of Congress representation on public goods allocations during this time.[41]

Two principal specifications are estimated in this paper. In the first, patterned after the model employed in Chattopadhyay and Duflo (2004), I estimate the regression:

$$\begin{aligned} PG2001norm_{g,i} &= \alpha + \rho Cong_i + \psi(Cong_i \times ProPoor_{g,i}) \\ &\quad + \gamma PG1991norm_{g,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + f(Marg_{1989,i}) + PG_g + \sigma_i + \varepsilon_{g,i}, \end{aligned} \tag{3}$$

where $PGyearnorm_{g,i} \equiv (PGyear_{g,i} - mean(PGyear_{g,pre}))/sd(PGyear_{g,pre})$. In words, the

[41] Due to incumbency advantages enjoyed in constituencies won due to the assassination, it is likely that the policy effects from the shock to party representation during the 1991 election will have continued through the 1996-1998 term as well, though in a weakened form.

public goods are normalized so as to allow their inclusion in a single regression: the percentage of villages in constituency i possessing public good g is demeaned by the mean for all constituencies voting before the assassination and divided by the standard deviation. The right-hand variables of interest are $Cong_i$, a dummy indicating whether the constituency was won by the Congress party in 1991; and the interaction of this variables with a dummy indicating a good's being classified as "pro-poor," $ProPoor_g$. In addition, dummies are included for each public good, PG_g, in order to capture good-specific changes over time. The other control variables are as described for the first-stage specifications; and the error terms, $\varepsilon_{g,i}$, are clustered at the constituency level. This specification allows us to capture the effect of Congress coming to power on public goods allocations according to their class characteristics. Unfortunately, there is no measure of the intensity of preference, so the results given by these specifications are necessarily coarse.

In the second specification, I run separate regressions for each public good:

$$PG2001_i = \alpha + \rho Cong_i + \gamma PG1991_{,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i. \tag{4}$$

The outcome variable is the percentage of villages possessing the specified public good in constituency i in 2001. Controls are included for the baseline level of the public good, $PG_{1991,i}$. The error terms, ε_i, are now iid. The public goods included in the regression include those detailed in table 1: education, drinking water, health facilities, electrification, post and telegraph facilities, telephone availability, paved roads, and various types of irrigation. This specification allows a finer disaggregation of the results of the Congress party's coming to power.

5.4.2 Pro-Poor Public Goods

I first estimate model (3), in which public goods are classified according to their class character. ρ gives us the effect on Congress representation on the change in non-pro-poor public good. The principal coefficient of interest will be ψ, which gives the differential effect of Congress party representation on the provision of pro-poor public goods. In table 2 are shown the two different classification schemes for public goods, the first based on the enumeration given by Bardhan and Mookherjee (2011), and the second adjusting this scheme according to intuitive reasoning

and the more extensive list of public goods provided in the census. The only differences are that the alternative list includes telephones, industrial electrification, and health sub-centers, which are all classified as "non pro-poor," and that education is disaggregated into primary, middle, and high school, with only the first classified as "pro-poor." Estimates using both classification schemes are included in the tables.

Table 5 gives the results from these regressions. Columns (1)-(3) use the BM classification, and columns (4)-(6) the alternative classification. In column (1), which gives the results from OLS regression, we see that there is a 0.144 standard deviations decline in the provision of non-pro-poor public goods in Congress-held constituencies, which is offset by 0.209 sds relative increase for public goods that are pro-poor. Turning next to the IV design, shown in columns (2) and (3) (using the first-stage models (2) and (1), respectively), we see that the results are somewhat similar, though considerably amplified. In Congress-held constituencies, there is a decline of 0.381 (0.445, in model (1)) sds in non-pro-poor goods; where the goods are pro-poor, this is offset by a 0.547 (0.550) sds increase.

Using the alternative classification scheme, which is deemed to be the more appropriate one given the expanded list of public goods available in the data set, I find generally similar results. Using OLS, Congress-held constituencies see little change in non-pro-poor public goods, and a 0.057 sds decline in pro-poor goods. Instrumenting for Congress victory, in columns (5)-(6), Congress-held constituencies show declines of 0.211 (0.256) sds for non-pro-poor goods, which is offset by a 0.260 (0.258) sds increase when the goods are pro-poor.

Though the results are sensitive to the classification scheme employed, it is clear that constituencies represented by Congress give greater priority to the provision of pro-poor public goods, with relative increases of approximately 0.260 and 0.550 standard deviations in Congress-held constituencies, in contrast to the relative decline in non-Congress constituencies. As the costs of these items are not known, nor their value to constituents, these results must be taken only as suggestive of the parties' priorities. To more closely explore the effects of Congress representation, I now turn to regression analysis employing model (4), which will give the effect of Congress representation on the full list of public goods.

5.4.3 Disaggregated Public Goods

Table 6 presents the disaggregated results. Columns (1)-(2) and (5)-(6) give the mean levels of the respective public goods in 1991 and 2001. Columns (3) and (7) give the results from an OLS regression, showing the coefficients on Congress victory. Columns (4) and (8) show the results from the IV regression, using model (2) in the first-stage, which includes the assassination/vote-margin interaction term. There is little evidence in the OLS regression for Congress victory having large effects on public goods provision.

Turning to the IV results, we immediately see a substantial difference in the estimated party coefficients. Congress victory leads to a 19.8 ppts increase in tap water availability (significant at the 5% level), a 21.7 ppts decline in well water (5% level), and a 12.8 ppts increase in handpump water (5% level). Congress victory also leads to a 14.7 ppts decline in agricultural electrification (5% level), a 13.2 ppts decline in industrial electrification (10% level), and a 14.2 ppts (10% level) decline in telephone coverage. Access to an educational facility increases by 4.1 ppts (10% level), which we will see subsequently is due primarily to an extension of primary education. The percentage of land that is uncultivated increases by 5.8 ppts (10% level), while the percentage of cultivated land which is irrigated by government canals increases by 8.8 ppts (10% level).

The magnitude of these effects is remarkable. The increase in tap water coverage, 19.8 ppts, is of the same magnitude as the overall increase in tap water availability, which during this decade increased from 19% in 1991 to 39% in 2001. The increase in handpump availability shows relative increases of a similar magnitude. The decline in well water access, 21.7 ppts, was quite a bit larger than the overall decline, which brought well water access down from 67% in 1991 to 62% in 2001, continuing a downward trend already seen between 1971-1991.[42] Apparently, the changes in water access occurring nationwide were accelerated by the victory of the Congress party. In contrast, Congress victory served to significantly slow the extension of electrification. While agricultural electrification increased from 55% to 63% during this time, the increase was 14.7 ppts smaller in constituencies won by Congress, essentially wiping out any improvement. For industrial electrification, there was a national increase from 36% to 55%, which was reduced by 13.2 ppts with Congress victory. Telephone access increased from 10% to 43% during this

[42] As described above, the dependence on well water is a marker of underdevelopment.

time, but was 14.2 ppts smaller in Congress constituencies. Finally, the percentage of cultivated land covered by government canals during this time rose from 11% to 15%, but by 8.8 ppts in Congress constituencies.

We saw in table 3 that the samples were slightly unbalanced according to the percentage of the population that were brahmins, the level of caste fragmentation, and the landlord-based tenure system. In table 7 I re-estimate the IV specifications including each of these variables separately as controls. The results are robust to the inclusion of these variables: though the coefficients become marginally insignificant for telephones and industrial electrification with the inclusion of the brahmin control, and for government canal irrigation with the inclusion of the landlord control, the magnitude of the coefficients is relatively stable.

The results obtained above come from an IV specification using model (2) as the first-stage regression. I next re-estimate the relationship between Congress victory and public goods using model (1) in the first stage, with only the assassination variable generating variation in Congress victory. Table 8 gives the results from these alternative specifications. Column (3) shows the results using the un-interacted assassination variable in the first-stage regression. The coefficient for tap water is 29.5 ppts, compared to 19.8 ppts in the original specification. The coefficient for handpumps is a statistically insignificant 4.3 ppts, as compared to 11.9 ppts in the original. The coefficient on well water is -28.4, as opposed to -21.7; and the coefficients on agricultural and industrial electrification are -17.7 and -17.8, respectively, as opposed to -14.7 and -13.2 in the original specification. For other public goods, the coefficients are not conspicuously different than in the original regressions, though there is sometimes a decline in the statistical significance. Insofar as there are differences in the results obtained across the two specifications, the explanation likely lies in the slightly different complier groups for the two instruments. Specifically, because 10 of the 15 states held all their elections either before or after the assassination, the effect of the instrument cannot be distinguished from state-level fixed effects for this sub-sample, meaning the complier group will be limited to only the 5 states with variation in the assassination variable. To test this hypothesis, I re-estimate the original regression, which includes the interaction term, but limiting the sample to these 5 states. We see that the coefficients are similar to those found in the un-interacted specifications, giving

credence to this explanation.[43]

In sum, Congress victory leads to a significant change in the patterns of public goods allocations. The presence of both positive and negative effects is indicative of not merely a general increase in patronage for Congress constituencies, but of a more subtle reallocation of public goods. Priority is shifted to items relatively favored by the poor (drinking water and education), and away from those favored by more affluent classes (agricultural and industrial electrification and telephones),[44] consistent with the earlier findings using class-based classifications of the public goods.

5.5 IV Interpretations and Incumbency Status

One of the principal concerns with this identification strategy is that the LATE being estimated is that for a switching of party identity under the condition of the victorious candidate's having only a small probability of returning to power in the next election. In this case, the estimated results may reflect the implementation of atypical policies for the purpose of increasing the likelihood of winning an otherwise unfavorable constituency; or, alternatively, as the pure expression of personal preference unconstrained by hopes of future electoral success. Against this argument, in results not shown I find that the probability of victory in 1996 for Congress incumbents in constituencies voting after the assassination is no lower than for incumbents in constituencies voting before the assassination (with the inclusion of state fixed effects). However, this does not rule out the possibility that the similarity in the probability of re-election is in fact driven by the politicians' having successfully undertaken strategic policy interventions for the purpose of holding seats otherwise unfavorable to the party.

[43]Even in model (2), the complier group is composed largely, though not exclusively, of the 5 states with elections both before and after the assassination. In results not shown, I find that the coefficients from an estimation of the first stage regression using the 10 states voting entirely before or after the assassination are quite similar to those obtained using the other 5 states, and are highly significant. However, the F-stats using the 10-state sample are much smaller, due to the collinearity of the state fixed effects with the assassination variable.

[44]The increase in handpump drinking water, though interpreted here as favoring the interests of the poor, might also be interpretable as indicative of the party's effectiveness in delivering patronage, as this is an item well known for its use in co-opting local notables (Nayak et al., 2002). Similarly, the increase in government canal irrigation also lends itself to multiple interpretations: as an allocation favorable to the agricultural elite, a means of providing rural employment, and a mechanism for securing corruption rents (Wade, 1982).

To address this concern, I next disaggregate the results according to the incumbency status of the Congress party at the time of the 1991 election: presumably, non-incumbents would be more likely to view victories due to the assassination as tenuous, and to undertake atypical policy interventions; insofar as the results found are stronger for non-incumbents, this will lend support to explanations based on the differing incentives of politicians elected because of the assassination. Again, I run regressions using both models (3) and (4), with the public goods estimated separately and aggregated into a single regression.

Table 9 shows the effects of the assassination in the first-stage regression, disaggregating the sample according to incumbency status. There are 170 constituencies in which the Congress party had incumbency status, and 279 in which it did not. The F-stat for the non-incumbent sample is 9.785 when only the non-interacted assassination variable is included, which decreases to 7.642 with the inclusion of the interaction term. For the sample of incumbents, the F-stats are 21.113 without the interaction term, and 22.773 with the interaction term. Even at this level of aggregation the instrument is highly predictive in the first stage, though the F-stat for non-incumbents indicates that this instrument will be somewhat weak for this sub-sample (Stock and Yogo, 2004).

5.5.1 Pro-Poor Public Goods

Table 10 gives the results from the model (3) specification, where public goods are normalized and classified by their class character. Panel A gives results using the sample of non-incumbents; Panel B the results for incumbents. Again, I use both the BM classification scheme and the alternative classification scheme. In columns (2) and (3), using the BM classification and instrumenting for Congress representation, non-incumbent Congress MPs are associated with a 0.532 (0.568) sds relative increase in pro-poor public goods, and incumbents with a 0.664 (0.649) sds relative increase, against the relative declines in pro-poor public goods in non-Congress constituencies. Using the alternative classification scheme, non-incumbent Congress MPs are associated with a 0.587 (0.613) sds relative increase in pro-poor public goods, and incumbents with a 0.305 (0.361) sds relative increase. In both classification schemes, incumbent and non-incumbent Congress MPs are associated with a decline in non-pro-poor goods in comparison to

non-Congress MPs. These results are consistent with what we found earlier using the full sample of constituencies; the most conspicuous difference is that non-incumbents are found to be associated with a larger relative increase in pro-poor public goods under the alternative classification scheme.

5.5.2 Disaggregated Public Goods

As before, I also estimate the model (4) specification, in which the level change between 1991 and 2001 is estimated separately for each public good. Table 11 gives the results. The findings largely confirm the earlier interpretations, in some cases even strengthening them, but adding significant nuance. The increases in tap water and government canals are seen to be quite comparable across incumbency status. However, the decline in well water is driven entirely by the election of non-incumbents, with non-incumbent Congress constituencies seeing a decline of well water of 45.2 ppts[45] and incumbent Congress constituencies an insignificant 5.1 ppts decline. The result for handpumps is seen to be driven by an expansion in incumbent constituencies of 17.7 ppts (1% level), with non-incumbent constituencies showing a statistically insignificant 5.7 ppts increase. Another interesting result is that the decline in electrification is found only in the non-incumbent constituencies. Congress-incumbent constituencies see no change in electrification, but instead a 19.8 ppts decline in telephone access, a 10.5 ppts decline in paved roads, and a 15.0 ppts decline in health sub-centers. In addition, we see that the increase in uncultivated land occurs in non-incumbent constituencies but not incumbent constituencies, consistent with the findings on agricultural electrification. The availability of a primary school increases by 5.9 ppts with incumbent Congress representatives; while middle school availability declines 8.1 ppts with non-incumbent Congress representatives.

In sum, while the results on Congress representation leading to increases in pro-poor public goods continues to hold, the trade-offs involved are somewhat distinct depending on the incumbency status of the politician elected. Where the politician is an incumbent, drinking water and primary schools increase, while telephone availability, paved roads, and health sub-centers

[45] The large magnitude of this coefficient is likely driven by the weakness of the instrument for non incumbents (Bound et al., 1995; Staiger and Stock, 1997).

decline. Where the politician is newly elected, drinking water again increases, but now it is electrification that declines. The precise composition of these changes is likely driven by the relative influence of incumbent and non-incumbent politicians with local bureaucrats and the central and state government, as well as differing relationships with the local elite.[46] The results do not support the hypothesis that the effects found through the IV are being driven by the tenuousness of the party's hold on power in constituencies won due to the assassination.[47]

5.6 Regression Discontinuity Results

In light of the preceding results, it is interesting and instructive to compare them to those obtained using a regression discontinuity identification strategy. As argued previously, efforts of rival parties to appeal to the median voter may yield RD results driven primarily by electoral pressures rather than the policy preferences, and as such may not be representative of the party's behavior when winning by larger margins. In addition, where there is a signaling component to elections, victories won by small margins may yield leaders unable or unwilling to pursue their most preferred policies. To further explore the possibility that such phenomena may yield RD LATEs that are not generalizable away from the discontinuity, I now estimate the effects of Congress victory swapping out the IV with a regression discontinuity design.

The models are specified as before, but now with polynomials included in the running variable, the 1991 election margin:

$$\begin{aligned} PG2001norm_{g,i} &= \alpha + \rho Congress_i + \psi(Congress_i \times ProPoor_{g,i}) \\ &\quad + g(Marg_{1991,i})Cong_i + g(Marg_{1991,i})(1 - Cong_i) \\ &\quad + ProPoor \times [g(Marg_{1991,i})Cong_i + g(Marg_{1991,i})(1 - Cong_i)] \\ &\quad + \gamma PG1991norm_{g,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E}_i + \sigma_i + \varepsilon_i \end{aligned} \tag{5}$$

[46] For example, the lack of a decline in electrification in incumbent constituencies may be interpretable as due to incumbents' having established relationships with the local elites, though a lack of competence by non-incumbents in securing services through the exercise of political influence may also be at play. Similar factors may explain the increase in uncultivated land in non-incumbent constituencies.

[47] In results not shown, I estimate the baseline regressions separately for three samples: (1) those in which the party either lost in 1991 or won by a margin of less than 10; (2) those in which it either lost or won by a margin of 10-20; and (3) those in which it either lost or won by a margin of more than 20. The observations are matched on their 1989 vote margin. These disaggregations show similar results across the samples; importantly, even candidates winning by a very large margin show results of similar magnitude and significance, despite enjoying a margin not suggestive of a tenuous hold on power.

and

$$\begin{aligned} PG2001_i &= \alpha + \beta Cong_i + g(Marg_{1991,i})Cong_i + g(Marg_{1991,i})(1 - Cong_i) \\ &\quad + \gamma PG1991_i + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + \sigma_i + \varepsilon_i. \end{aligned} \tag{6}$$

$g(.)$ is a polynomial estimated separately for either side of the discontinuity, specified as a quartic where the entire sample is included, and as a linear function where the sample is trimmed to a sub-sample around the discontinuity. When estimating model (5), separate quartics are included for pro-poor and non-pro-poor items.

For the RD design to be valid, it is necessary that relevant covariates be continuous at the electoral (win/loss) threshold, so that the only difference between the samples at the discontinuity will be the party representing the constituency. Table 12 shows the sample balance across the electoral threshold. Columns (1)-(2) give the simple means in the 1991 levels of the indicates items for constituencies within the optimal bandwidth, as determined by the method proposed by Imbens and Kalyanaraman (2009). Column (3) gives the coefficients on Congress victory using model (4) and a local linear regression within the optimal bandwidths. The only differences are that the percentage of the work force composed by miners is 2.9 ppts smaller in constituencies won by Congress, and the index of rockiness of the land is 0.1 smaller (10% level). In column (4) are given the differences using the full sample with quartics estimated separately for each side of the discontinuity. Here we see no imbalance in the samples. Having shown sample balance in constituency characteristics, a regression discontinuity design will be valid (Imbens and Lemieux, 2008).

Figure 7 gives a preview of the results, graphing the residuals from a regression of the 2001 levels of the public goods on the 1991 level and state fixed effects against the 1991 vote share. The public goods represented are tap water, well water, and agricultural and industrial electrification, public goods for which the IV specification showed large and significant results. The graphical representation of the RDs, however, show no sharp discontinuities for these public goods at the electoral discontinuity.

Table 13 shows the results of the RD regressions using model (5). No effects of Congress representation are seen on public goods using constituencies within the optimal bandwidth (columns

(1) and (3)). When using the full sample with quartic polynomials, Congress representation leads to a 0.199 and 0.148 sds increase in pro-poor public goods for the BM and alternative classifications, respectively. However, these coefficients are not statistically significant.

To more closely examine the effects of Congress representation as identified through an RD design, I next present the results from model (6), where each public good is included in a separate regression. In table 14, columns (1)-(2) and (5)-(6) give the mean level of change in the public goods on either side of the discontinuity, using optimal bandwidths. Columns (3) and (7) give the coefficients and standard errors from a local linear regression within the optimal bandwidth, while columns (4) and (8) use the full sample and include a quartic polynomial. As seen in the first two rows, there is no difference in the provision of pro-poor public goods at the discontinuity: the coefficients are small and statistically insignificant. Using the full sample and the quartic polynomial, drinking water access declines by 1.1 ppts (5% level) with Congress representation, paved roads decline by 6.4 ppts (5% level), and adult literacy centers increase by 6.9 ppts (10% level). Using only the sample of constituencies within the optimal bandwidth and a local linear regression, we see a 6.0 ppts (1% level) increase in electrification, and a 0.7 ppts (10% level) increase in health centers. Figure 8 depicts the four public goods found to be statistically significant in the RD design (excluding health centers). The discontinuities found in table 13 are somewhat evident for paved roads and adult literacy centers, but not for electrification or drinking water.

5.7 Interpreting the RD

For the purpose of comparison, Table 15 presents the RD results side-by-side with the OLS and IV. For completeness, RDs are included using the 1996, 1998, and 1999 elections as the explanatory variable. For all the RDs, the full sample is used with quartic polynomials in the party's vote margin for the respective years. The list of public goods is reduced to only those for which significant results are found in any of the specifications. The sharp contrast between the LATEs captured by the RD and IV designs is apparent. The preferred explanation for the null results found using the RD is that the effect of the party's coming to power depends upon the margin by which it has won. The functional form of this dependence is not important, so long

as it has the feature that $\lim_{marg \downarrow 0} \beta(margin) = 0$. This condition would be fulfilled, for example, by a function in which β took a fixed value above some threshold, and a value of 0 below it. Though explanations based on either median voter convergence or the signaling function of election margins are both plausible, below I give evidence as to why the latter is the likelier of the two, based on candidate characteristics in closely contested elections and incumbency effects estimated at the discontinuity.

The insignificance of the RD coefficients, I have argued, is due to their capturing a local average treatment effect in the vicinity of the discontinuity, where distinct electoral dynamics obtain. There is also the possibility, however, that the RD is not identified, due to sorting around the discontinuity. Though the balance table ostensibly ruled out this potential problem, there is one particular variant of candidate sorting that requires greater scrutiny: namely, sorting by incumbency status. This issue has been discussed by Grimmer et al. (2011), who show that US congressional candidates who either belong to the same party as that holding state-level power, or who are the incumbent candidate, are more likely to win closely contested elections. Consistent with this finding, we see in table 12 that incumbent parties are 23.1 ppts more likely to win closely contested elections than are non-incumbents using the local linear regression (10.8 ppts with the quartic), though the difference is not statistically significant. Figure 9 plots the relationship between the 1991 vote margin and incumbency status. Incumbents are more likely to win closely contested elections, though due to the smallness of the sample size the difference is statistically indistinguishable. Though the RD for this reason cannot be regarded as well identified, I will argue below that this finding in fact gives important evidence for the mechanism underlying the RD null results.

I next turn to a discussion of the incumbency advantage estimated through the IV and RD designs, which I will argue is also important for understanding the RD results. Whereas an incumbency disadvantage in Indian politics has been identified by Linden (2004) through the use of an RD design, with incumbents 14-18 ppts less likely to win re-election, the use of the assassination instrument yields an incumbency advantage. In table 17, I estimate the effect of incumbency on the probability of winning the subsequent election using OLS, IV, and RD designs. In columns (1)-(2) are estimates from the OLS using only constituencies

voting before the assassination: including state fixed effects, Congress incumbents are seen to be 21.8 ppts more likely to win than non-incumbents. In columns (3)-(4), which include the full sample of constituencies, Congress incumbents are seen to enjoy an advantage of 19.2 ppts. In columns (5)-(6) incumbency status is instrumented for using the assassination variable, yielding an incumbency advantage of a similar magnitude, 16.7 ppts, though it is insignificant due to the increase in standard errors. Finally, in columns (7)-(8) are shown the results using an RD design to estimate the incumbency advantage: as in Linden (2004), I find a *disadvantage* to incumbent parties seeking re-election (though the results are not significant due to the smallness of the sample size).

In sum, the winners of closely contested elections are both more likely to be incumbents, and less likely to win the following election, whereas no such incumbency disadvantage is found using the IV design. My preferred explanation reconciling these findings with the RD null results for public goods is as follows: because winners of closely contested elections tend to be incumbents, the narrowness in their margin of victory is a signal to other party members and local bureaucrats of their political weakness and reduced likelihood of winning future elections, which leads to the loss of influence within the party and a concomitant inability to shape policy outcomes (reflected in the null results found with the RD design). These constraints on policy-making, in turn, reinforce the candidates's weakness, leading to the incumbency disadvantage seen to characterize those winning by a narrow margin. While I regard the paired findings of sorting around the discontinuity according to incumbency status and incumbency disadvantage for winners of closely contested elections as pointing to some such political-signaling dynamic underlying the null results found with the RD design, I cannot rule out the possibility that these features are incidental, and the true mechanism driving the RD results is the more traditional policy convergence of the political economy literature.

5.7.1 RDs and Swing Constituencies

A final possibility for the interpretation of the RD results is that closely contested constituencies are considered by political actors to be swing constituencies, and are consequently allocated higher levels of public goods on both sides of the discontinuity. Swing-targeting is only one

possible prediction within the class of models from whence the concept derives; depending on the parameters of the model, core-targeting may occur instead, with the party choosing to reward its most ardent supporters.[48]

Table 17 shows the results of OLS regressions using dummy variables to capture allocations towards swing and core constituencies. Swing constituencies are defined as those in which the party won or lost the 1991 election by a margin of 5 points or less. Core constituencies are defined in two different ways: first, if the Congress party won the constituency by a margin greater than than 20 ppts in the 1991 election; and, second, if the Congress party has won the constituency in all four election between 1980 and 1991. The estimates of the first are given in columns (3) and (8); the estimates of the second in columns (5) and (10). There is little evidence of swing-targeting in either specification; core-targeting, however, does seem to occur. Where core constituencies are defined as those in which the party wins by a margin greater than 20 ppts, there is a statistically significant increase in tap water (4.2 ppts), handpump water (3.7 ppts), river water (2.3 ppts), postal services (3.1 ppts), and high schools (1.7 ppts). In addition, there seems to be increased support for electrified irrigation, with non-electrified well irrigation declining 1.1 ppts, and electrified well irrigation increasing by 3.0 ppts.

6 Conclusion

The allocation of public goods is strongly influenced by representation by the populist Congress party: pro-poor public goods are rapidly expanded, with dramatic improvements in drinking water access (increases in tap and handpump water against a decline in well water), government irrigation canals, and education facilities, and declines in electrification, telephone coverage, and cultivated land. When disaggregated by the incumbency status of the exogenously assigned representative, one finds the same emphasis on pro-poor public goods in both samples, though the composition is somewhat different. There is a suggestive similarity in the results found here with those in Albouy (2009), where the party affiliated with the lower stratums of society is associated with increases in spending more closely aligned with the interests of the

[48] See page 4, footnote 7, for a fuller explanation of these terms and the class of models to which they belong.

latter, and declines in spending for those items given higher priority by more affluent groups.

Where the identification strategy is shifted to a regression discontinuity design, little effect is found from Congress representation. Two possible mechanisms are posited for explaining this result: pre-election policy convergence in closely contested constituencies, and post-election adaptation of policy based on the margin of victory. My preferred explanation leans towards the latter, with winners of closely contested elections facing significant constraints in their ability to influence policy, likely due to a loss of influence within the party, which is reflected in a reduced probability of winning the subsequent election. The stark contrast between the RD null results and the significant results of the IV, coupled with the evidence for sorting around the threshold and differential advantages to incumbency, makes clear the distinct electoral dynamics underlying the LATEs captured by the two identification strategies. The interpretation of RD results in electoral setting must remain cognizant of the incentives for policy moderation, and constraints on policy-implementation, that will be present in closely contested elections, and which may serve to obscure party effects that would obtain were the margin of victory greater.

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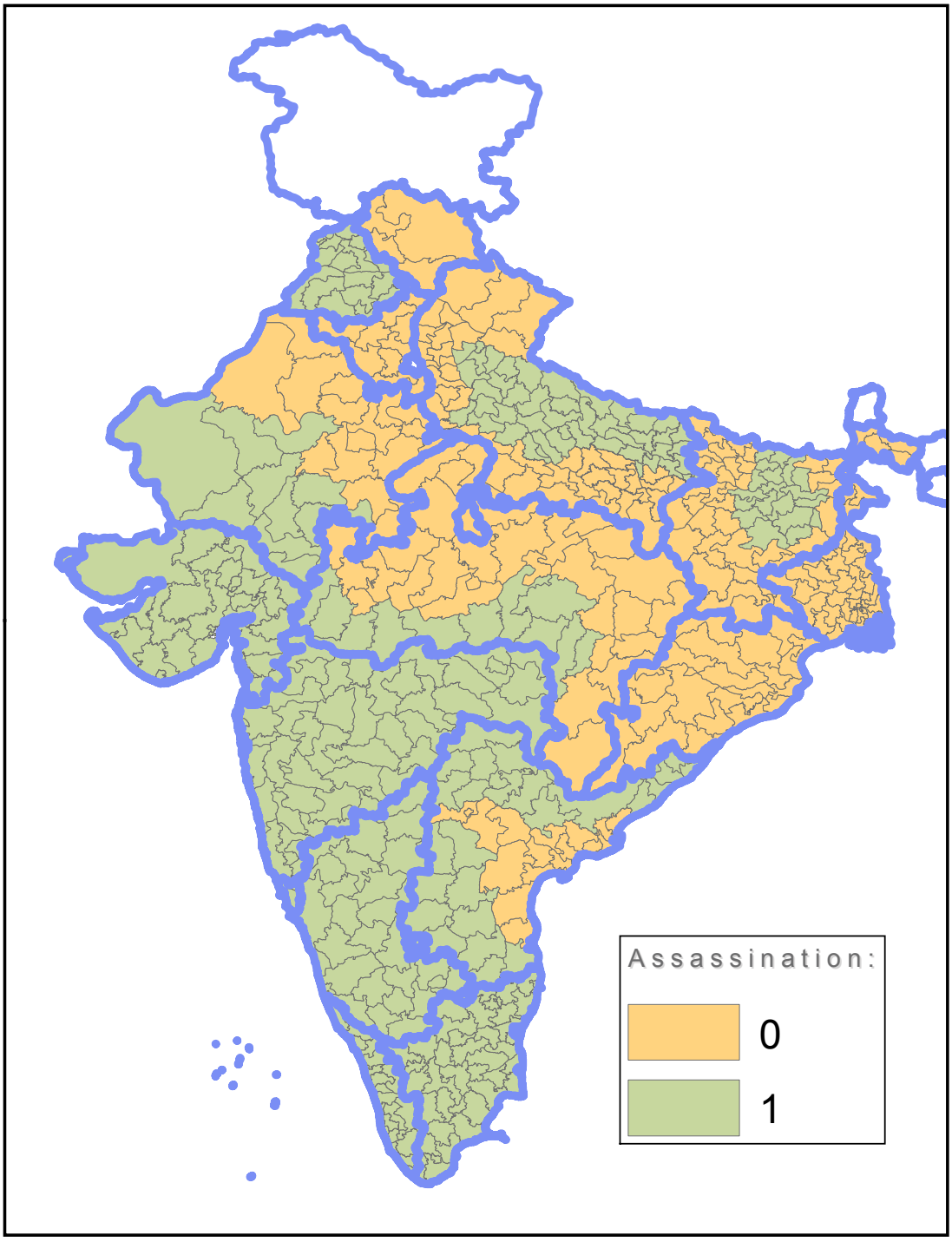
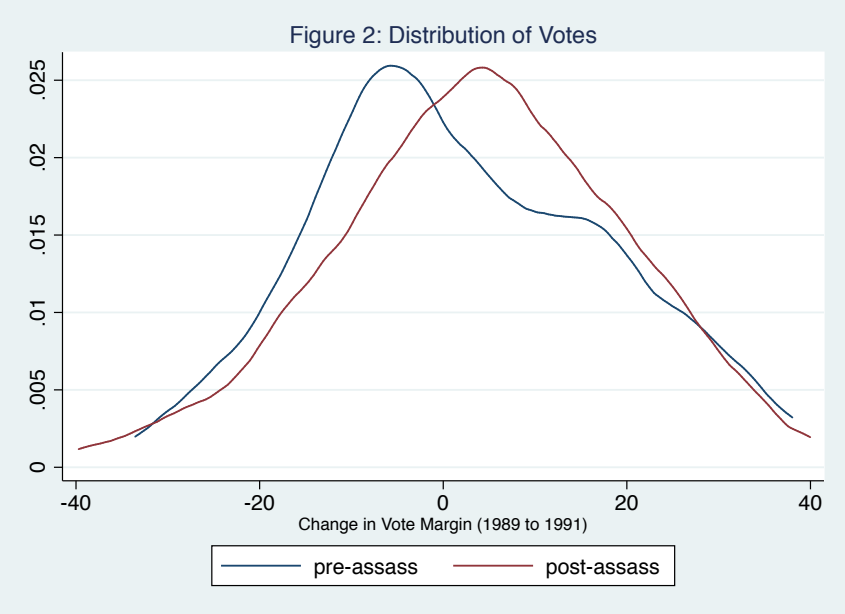
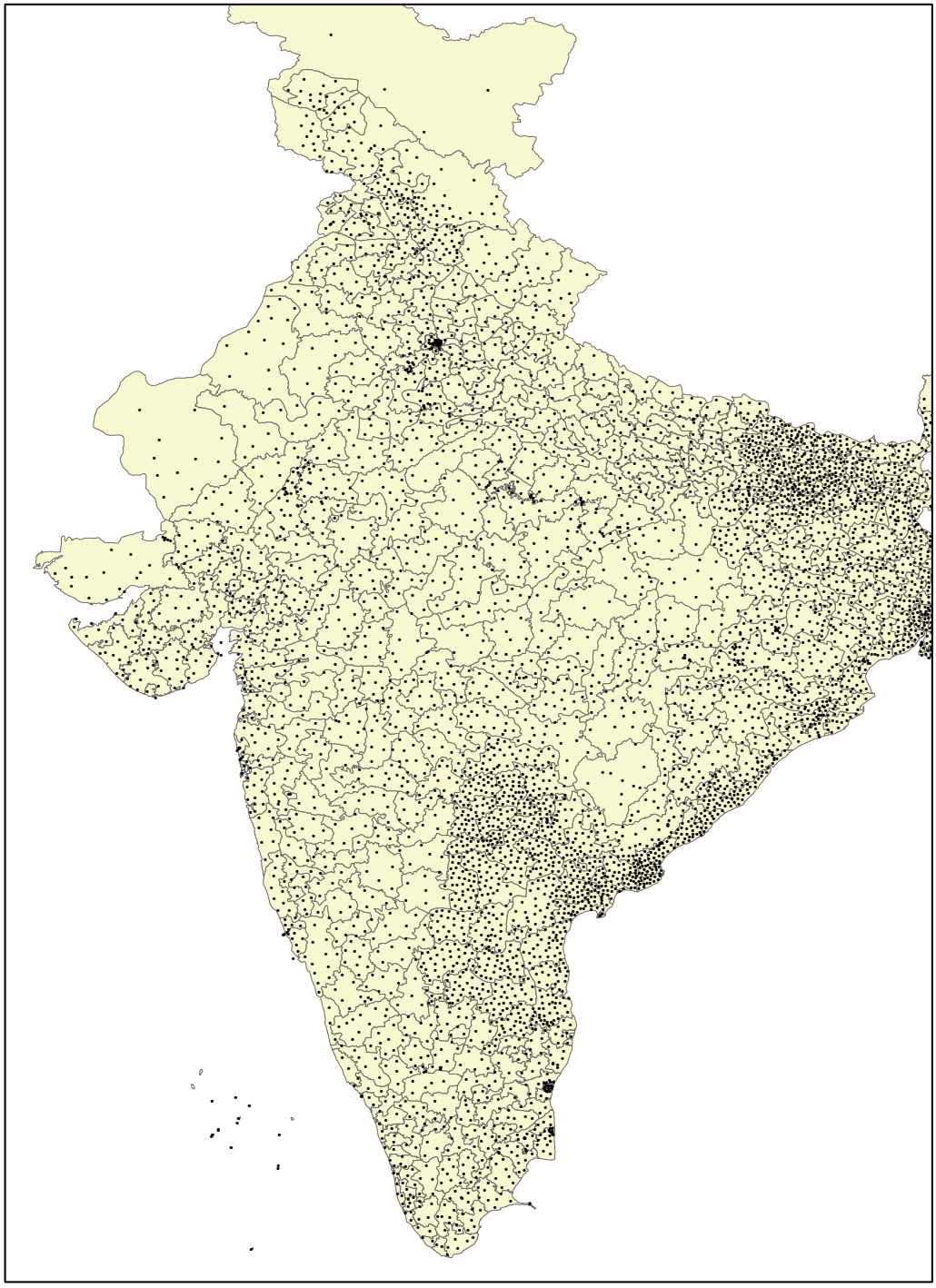
Figure 1: Distribution of Constituencies

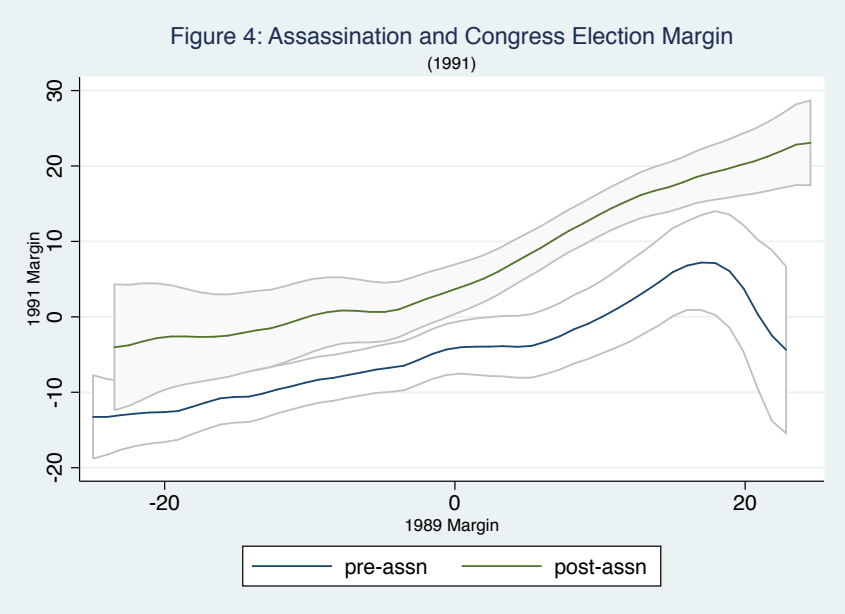




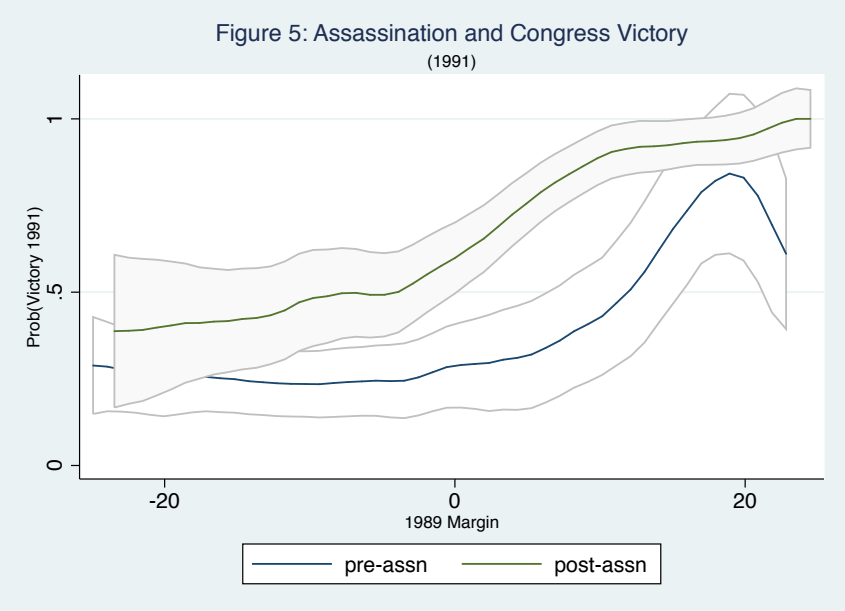
Notes: This figure shows the distributions of the change in the Congress party's vote margin between the 1989 and 1991 elections, disaggregated by whether the constituency voted before or after the assassination.

Figure 3: Sub-Districts and Electoral Constituencies

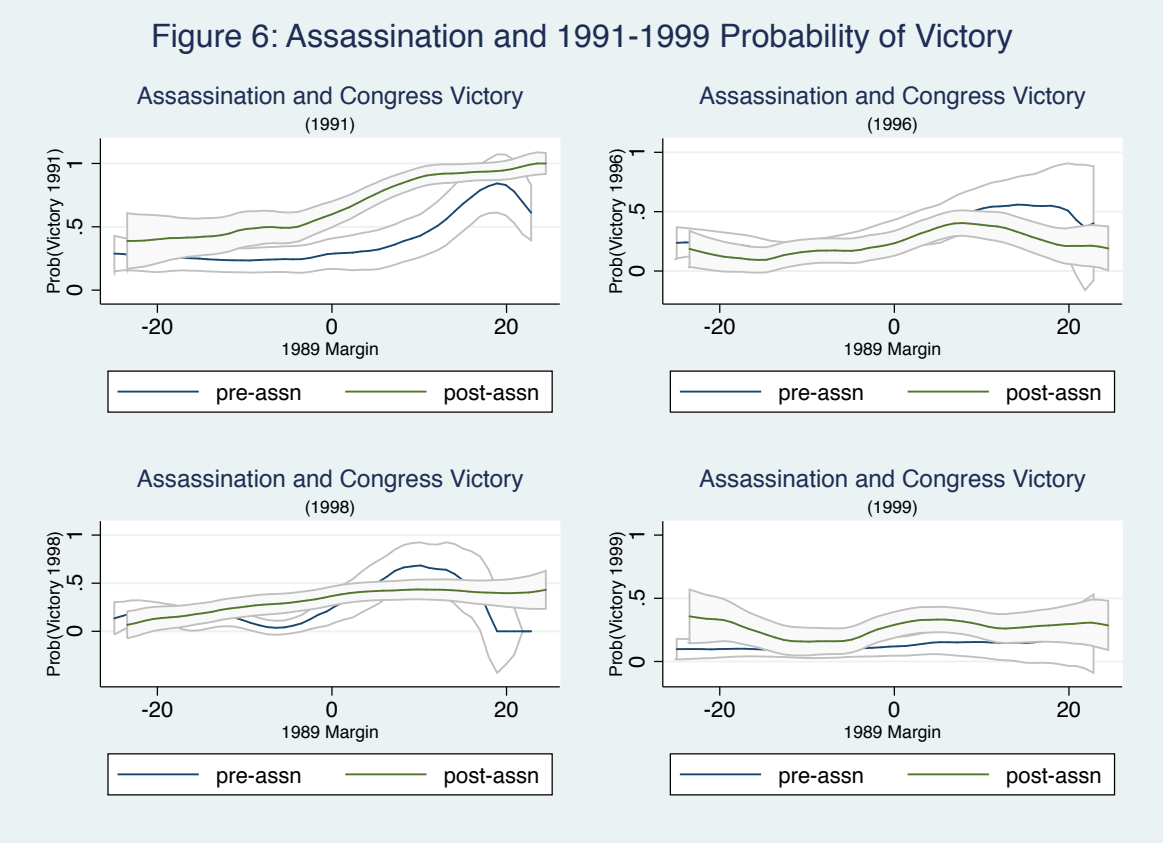




Notes: This figure graphs the Congress party's 1991 vote margin against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

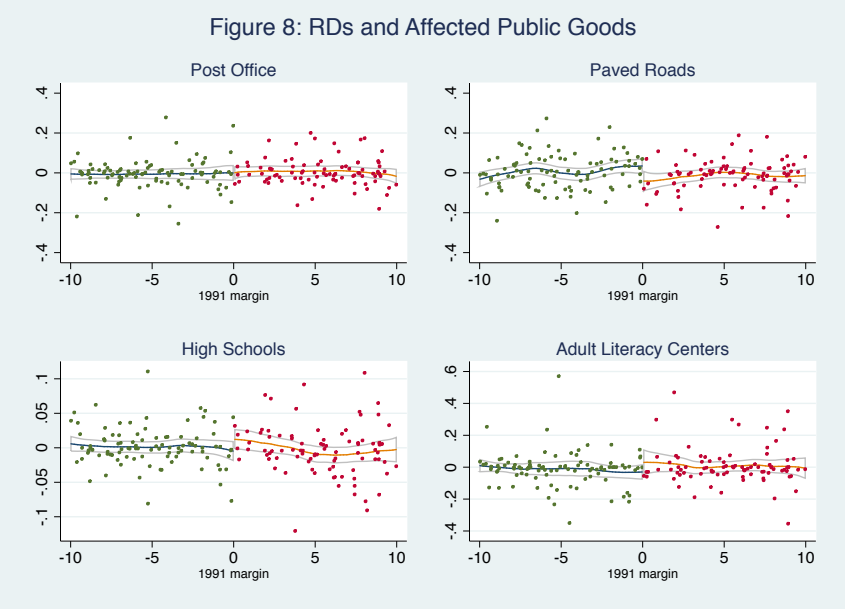


Notes: This figure graphs the Congress party's probability of victory in 1991 against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

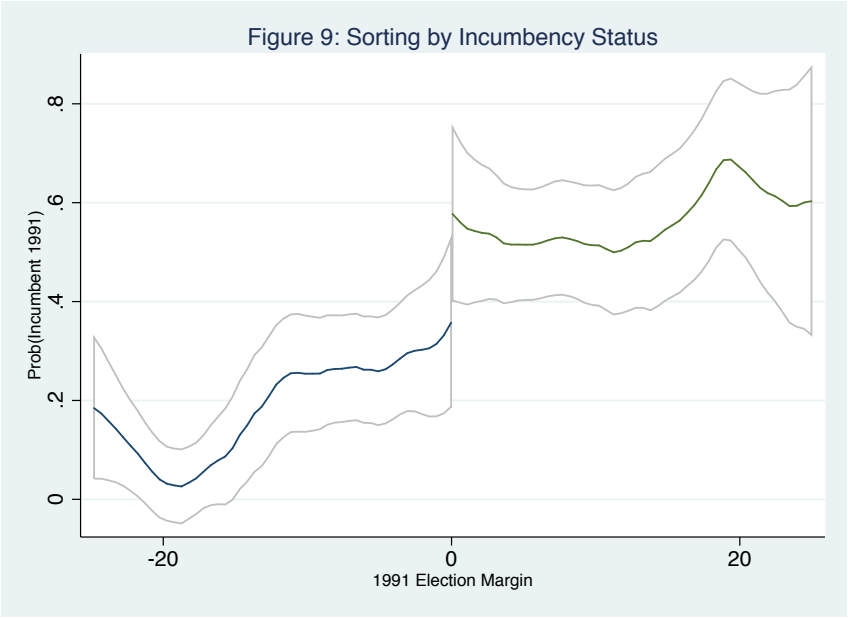


Notes: This figure graphs the Congress party's probability of victory in the 1991, 1996, 1998, and 1991 elections against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

Notes: This figure plots the residuals from a regression of the change in public goods on the state fixed effects against the Conress party's 1991 vote margin. 95% confidence intervals are shown.



Notes: This figure plots the residuals from a regression of the change in public goods on the state fixed effects against the Congress party's 1991 vote margin. 95% confidence intervals are shown.



Notes: This figure plots the incumbency status of the party at the time of the 1991 election against its probability of winning the 1991 election. 95% confidence intervals are shown.

Table 1: Public Goods: 1991 and 2001

Variables	1991	2001	Variables	1991	2001
drinking water			**health facilities**		
any	0.93	0.94	health center	0.02	0.02
tap	0.21	0.41	primary	0.05	0.07
well	0.68	0.62	health subcenter	0.09	0.19
handpump	0.58	0.75	maternity-child	0.04	0.07
tubewell	0.23	0.33	hospital	0.03	0.05
river	0.10	0.10	dispensary	0.06	0.06
comm and transp			**irrigation**		
post office	0.32	0.34	any	0.38	0.46
telegraph	0.02	0.03	government canal	0.11	0.15
phone	0.11	0.44	private canal	0.01	0.01
paved road	0.47	0.62	tank	0.03	0.03
electrification			tubewell (electrified)	0.06	0.08
any	0.74	0.78	tubewell (non-electric)	0.07	0.08
domestic	0.68	0.77	well (electrified)	0.03	0.05
agricultural	0.57	0.64	well (non-electric)	0.02	0.02
industrial	0.37	0.56	uncultivated	0.13	0.13
education					
any	0.78	0.81			
primary	0.76	0.80			
middle	0.25	0.33			
high	0.13	0.16			
adult literacy	0.06	0.12			

Notes: Statistics give the percentage of village possessing the indicated good. The sample includes only those 449 constituencies included in our regressions.

Table 2: Public Goods: Class Character

Variables	BM	alt	Variables	BM	alt
drinking water			**health facilities**		
any	–	–	health center	–	–
tap	pro-poor	pro-poor	primary	–	–
well	non	non	health subcenter	–	non
handpump	pro-poor	pro-poor	maternity-child	–	–
tubewell	pro-poor	pro-poor	hospital	–	–
river	non	non	dispensary	–	–
comm and transp			**irrigation**		
post office	–	non	any	–	–
telegraph	–	non	government canal	non	non
phone	–	non	private canal	–	–
paved road	non	non	tank	–	–
electrification			tubewell (electrified)	–	–
any	–	–	tubewell (non-electric)	–	–
domestic	–	non	well (electrified)	–	–
agricultural	non	non	well (non-electric)	–	–
industrial	–	non	uncultivated	–	–
education					
any	–	–			
primary	pro-poor	pro-poor			
middle	pro-poor	non			
high	pro-poor	non			
adult literacy	–	–			

Notes: "BM" is the classification scheme given by Bardhan and Mookherjee; "alt" is the alternative scheme. "pro-poor" means that the item has been classified as being relatively preferred by the poor; "non" indicates the good is classified as being relatively preferred by the non poor.

Table 3: Balance

	pre-assassin	post-assassin	Difference		
	(1)	(2)	(3)	(4)	(5)
cities					
urbanization	0.181	0.231	0.049***	-0.031	
			(0.015)	(0.007)	
workers					
cultivators	0.091	0.085	-0.007	0.018**	0.013*
			(0.006)	(0.007)	(0.006)
agricultural labor	0.103	0.117	0.014**	0.018*	0.012
			(0.007)	(0.009)	(0.008)
forestry	0.020	0.020	0.000	-0.002	-0.002
			(0.002)	(0.002)	(0.002)
mining	0.017	0.011	-0.006	-0.002	-0.001
			(0.004)	(0.006)	(0.006)
manufacturing (hh)	0.040	0.041	0.001	0.007	0.007
			(0.005)	(0.007)	(0.007)
manufacturing (non-hh)	0.141	0.165	0.024***	-0.014	-0.005
			(0.008)	(0.011)	(0.009)
construction	0.039	0.044	0.005***	-0.004**	-0.003
			(0.002)	(0.002)	(0.002)
trade	0.218	0.213	-0.005	-0.005	-0.006
			(0.005)	(0.006)	(0.006)
transportation	0.071	0.071	0.000	-0.006	-0.004
			(0.003)	(0.004)	(0.004)
other	0.259	0.233	-0.027***	-0.010	-0.009
			(0.007)	(0.009)	(0.009)
marginal workers	0.028	0.032	0.004**	0.001	-0.000
			(0.002)	(0.003)	(0.002)
elections					
victory 1989	0.184	0.543	0.359***	0.041	0.037
			(0.043)	(0.046)	(0.046)
vote share 1989	37.202	42.537	5.334***	0.720	0.683
			(1.070)	(1.111)	(1.115)
margin 1989	-12.137	0.446	12.583***	2.119	1.982
			(1.732)	(1.936)	(1.941)
close election 1989	0.374	0.387	0.013	0.028	0.030
			(0.046)	(0.060)	(0.060)
ethnicity					
brahmins	0.062	0.042	-0.019***	-0.012***	-0.012***
			(0.003)	(0.003)	(0.003)
muslims	0.108	0.078	-0.031***	0.012	0.012
			(0.009)	(0.008)	(0.008)
sikhs	0.013	0.037	0.024**	-0.003	-0.003
			(0.011)	(0.004)	(0.005)
scheduled castes/tribes	0.285	0.228	-0.057***	0.002	-0.004
			(0.01)	(0.02)	(0.02)
caste-religious fragment	0.805	0.843	0.037***	0.031*	0.032*
			(0.014)	(0.016)	(0.016)
geography					
steep/sloping	0.001	0.001	-0.000	-0.001**	-0.001**
			(0.000)	(0.000)	(0.000)
barren/rocky	0.006	0.007	0.001*	-0.001	-0.001
			(0.001)	(0.001)	(0.001)
princely state	0.222	0.314	0.092***	-0.014	-0.016
			(0.032)	(0.032)	(0.032)
zamindar	0.618	0.327	-0.291***	0.096***	0.093**
			(0.035)	(0.036)	(0.036)
state FEs			no	yes	yes
urbanization			no	no	yes

Notes: The differences are estimated from a regression of the indicated variable on the assassination dummy. In columns (4) and (5) controls are included for the urbanization rate and state FEs.

Table 4: First Stage: Assassination and Electoral Outcomes

	vote share		election margin		victory	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Model (1)						
post-assassination	7.381***	6.118***	10.148***	8.404***	0.256***	0.233***
	(1.117)	(0.993)	(1.657)	(1.571)	(0.044)	(0.045)
F-stat	43.663	37.951	37.495	28.622	34.042	26.231
R-squared	0.509	0.783	0.395	0.694	0.297	0.574
N	449	449	449	449	449	449
Panel B: Model (2)						
post-assassination	7.044***	5.934***	8.162***	7.138***	0.355***	0.326***
	(1.760)	(1.434)	(2.658)	(2.277)	(0.070)	(0.066)
post-assn X abs(prior margin)	0.016	0.013	0.129	0.079	-0.007*	-0.006**
	(0.089)	(0.065)	(0.137)	(0.104)	(0.004)	(0.003)
F-stat	16.014	17.133	9.429	9.828	25.811	24.686
R-squared	0.532	0.785	0.396	0.695	0.305	0.578
N	449	449	449	449	449	449
state FEs	no	yes	no	yes	no	yes

Notes: The table gives the results from of a regression of the indicated 1991 electoral outcome on the assassination instruments(s). Covariates include dummies for SC/ST constituencies, constituencies in which opposition parties had a vote-sharing arrangement, and the incumbency status of the Congress politician; as well as the second-stage controls for the urbanization rate, average village population, and number of villages. A cubic in the Congress party's 1989 vote share is included in columns (1) and (2); and a cubic in the party's 1989 vote margin in columns (3)-(6).

Table 5: Congress Victory and Pro-Poor Public Goods

Outcome: Public Good 2001 (sd)

	Bardhan and Mookherjee classification			alternative classification		
	OLS	IV		OLS	IV	
		Model (2)	Model (1)		Model (2)	Model (1)
	(1)	(2)	(3)	(4)	(5)	(6)
Congress	-0.144***	-0.381***	-0.445***	-0.010	-0.211***	-0.256***
	(0.027)	(0.091)	(0.101)	(0.022)	(0.079)	(0.090)
Congress X pro-poor	0.209***	0.547***	0.550***	-0.057**	0.260***	0.258***
	(0.032)	(0.089)	(0.089)	(0.028)	(0.082)	(0.081)
R-squared	0.794	0.789	0.788	0.719	0.715	0.714
N	4480	4480	4480	6720	6720	6720

Notes: The table gives the coefficients from the second stage regression using model (3). Results are given for both the Bardhan and Mookherjee classification and our alternative classification. Columns (2) and (5) show the results using model (2) as the first-stage specification, where both the assassination dummy and its interaction with the prior vote margin are included. Columns (3) and (6) use model (1) as the first-stage specification, with only the uninteracted assassination dummy included. "pro-poor" is a dummy taking the value of 1 if the good is given as being favored by the poor in table 2, and "Congress" a dummy indicating a constituency's being represented by the Cogress party. Covariates include the urbanization rate, average village population, and number of villages. Controls are also included for incumbency status, vote-sharing arrangements in 1989, and SC/ST constituencies; and a cubic is included in the Congress party's 1989 vote margin. State fixed effects and public goods fixed effects are included. Error terms are clustered at the constituency level.

Table 6: Congress Victory and Disaggregated Public Goods

outcome variable	1991 level (1)	2001 level (2)	Congress Victory OLS (3)	Congress Victory IV (4)	outcome variable	1991 level (5)	2001 level (6)	Congress Victory OLS (7)	Congress Victory IV (8)
drinking water					**health facilities**				
any	0.93	0.94	-0.000	-0.002	health center	0.01	0.02	-0.001	-0.005
			(0.002)	(0.009)				(0.003)	(0.011)
tap	0.19	0.39	-0.006	0.198**	primary health center	0.05	0.06	0.007*	0.012
			(0.018)	(0.080)				(0.004)	(0.016)
well	0.67	0.62	-0.028	-0.217**	health subcenter	0.08	0.18	-0.002	-0.056
			(0.022)	(0.095)				(0.012)	(0.047)
hand pump	0.58	0.75	0.021	0.128**	maternity-child	0.03	0.07	0.013*	-0.027
			(0.015)	(0.063)				(0.007)	(0.029)
tubewell	0.23	0.32	-0.018	-0.124	hosptial	0.03	0.05	0.006	0.009
			(0.021)	(0.085)				(0.008)	(0.033)
river	0.09	0.10	-0.000	0.017	dispensary	0.06	0.06	-0.002	-0.024
			(0.008)	(0.033)				(0.007)	(0.027)
electrification					**irrigation**				
any	0.73	0.78	-0.011	0.018	any	0.37	0.46	-0.030**	0.040
			(0.010)	(0.039)				(0.013)	(0.054)
domestic	0.67	0.76	-0.017	0.017	government canal	0.11	0.15	-0.004	0.088*
			(0.011)	(0.042)				(0.012)	(0.052)
agricultural	0.55	0.63	-0.023	-0.147**	private canal	0.01	0.01	0.001	-0.003
			(0.014)	(0.060)				(0.001)	(0.005)
industrial	0.36	0.55	-0.013	-0.132*	tank	0.03	0.03	0.006	0.012
			(0.017)	(0.070)				(0.005)	(0.020)
comm and transp					tubewell (electrified)	0.07	0.08	-0.015*	-0.002
post office	0.30	0.32	0.012	-0.026				(0.009)	(0.036)
			(0.011)	(0.047)	tube well (non-elec)	0.07	0.08	-0.008	0.013
telegraph	0.02	0.03	0.001	-0.001				(0.008)	(0.030)
			(0.003)	(0.014)	well (electrified)	0.03	0.05	0.012*	0.004
telephone	0.10	0.43	-0.026	-0.142*				(0.007)	(0.027)
			(0.018)	(0.075)	well (non-elec)	0.02	0.02	-0.010***	0.014
paved roads	0.46	0.61	-0.013	-0.047				(0.004)	(0.015)
			(0.011)	(0.043)	uncultivated	0.13	0.12	0.007	0.058*
education								(0.008)	(0.033)
any	0.77	0.81	-0.006	0.041*					
			(0.006)	(0.025)					
primary	0.76	0.80	-0.004	0.029					
			(0.006)	(0.024)					
middle	0.25	0.33	-0.004	-0.038					
			(0.007)	(0.027)					
high	0.12	0.16	-0.002	-0.037					
			(0.006)	(0.024)					
adult literacy center	0.06	0.12	0.005	0.008					
			(0.015)	(0.061)					

Notes: The table gives the results of the second stage regression using model (4). Columns (3)-(4) and (7)-(8) give the coefficients on the Congress dummy for regressions with the indicated public good as the left-hand variable. Covariates are those included in the baseline regressions, as well as controls for the 1991 level of the indicated public good. Error terms are iid.

Table 7: Congress Victory and Public Goods, with Controls

outcome variable	Congress Victory IV (1)	(2)	(3)	(4)	outcome variable	IV (5)	(6)	(7)	(8)
drinking water					**health facilities**				
any	-0.002	0.001	-0.001	-0.001	health centers	-0.005	-0.008	-0.005	-0.005
	(0.009)	(0.009)	(0.008)	(0.009)		(0.011)	(0.012)	(0.011)	(0.011)
tap	0.198**	0.179**	0.210***	0.219**	primary health centers	0.012	0.013	0.011	0.010
	(0.080)	(0.085)	(0.081)	(0.082)		(0.016)	(0.018)	(0.016)	(0.017)
well	-0.217**	-0.212**	-0.219**	-0.226**	health subcenter	-0.056	-0.059	-0.060	-0.048
	(0.095)	(0.105)	(0.095)	(0.096)		(0.047)	(0.052)	(0.047)	(0.047)
hand pump	0.128**	0.146**	0.124**	0.140**	maternity-child	-0.027	-0.037	-0.027	-0.021
	(0.063)	(0.070)	(0.062)	(0.064)		(0.029)	(0.032)	(0.029)	(0.029)
tubewell	-0.124	-0.128	-0.115	-0.088	hospital	0.009	0.010	0.008	0.008
	(0.085)	(0.093)	(0.084)	(0.083)		(0.033)	(0.036)	(0.033)	(0.033)
river	0.017	0.014	0.016	0.026	dispensary	-0.024	-0.017	-0.022	-0.026
	(0.033)	(0.036)	(0.033)	(0.033)		(0.027)	(0.030)	(0.027)	(0.028)
electrification					**irrigation**				
any	0.018	0.042	0.022	0.009	any	0.040	0.079	0.040	0.037
	(0.039)	(0.043)	(0.039)	(0.039)		(0.054)	(0.061)	(0.054)	(0.054)
domestic	0.017	0.041	0.021	0.011	government canals	0.088*	0.123**	0.097*	0.086
	(0.042)	(0.047)	(0.042)	(0.042)		(0.052)	(0.059)	(0.052)	(0.052)
agricultural	-0.147**	-0.131**	-0.147**	-0.158**	private canals	-0.003	-0.001	-0.002	-0.002
	(0.060)	(0.065)	(0.060)	(0.061)		(0.005)	(0.006)	(0.005)	(0.005)
industrial	-0.132*	-0.114	-0.126*	-0.121*	tank	0.012	0.013	0.012	0.004
	(0.070)	(0.076)	(0.069)	(0.069)		(0.020)	(0.022)	(0.020)	(0.020)
comm and trans					tubewell (electrified)	-0.002	-0.002	-0.003	0.008
post office	-0.026	-0.031	-0.027	-0.018		(0.036)	(0.039)	(0.036)	(0.036)
	(0.047)	(0.051)	(0.047)	(0.047)	tubewell (non-elec)	0.013	0.031	0.012	0.010
telegraph	-0.001	0.004	-0.000	-0.002		(0.030)	(0.033)	(0.030)	(0.030)
	(0.014)	(0.015)	(0.013)	(0.014)	well (electrified)	0.004	0.002	0.004	0.010
phones	-0.142*	-0.132	-0.142*	-0.133*		(0.027)	(0.030)	(0.027)	(0.027)
	(0.075)	(0.082)	(0.075)	(0.075)	well (non-elec)	0.014	0.014	0.014	0.014
paved roads	-0.047	-0.052	-0.043	-0.043		(0.015)	(0.017)	(0.015)	(0.015)
	(0.043)	(0.047)	(0.042)	(0.043)	uncultivated	0.058*	0.061*	0.054*	0.053
education						(0.033)	(0.037)	(0.033)	(0.033)
any	0.041*	0.047*	0.040	0.044*					
	(0.025)	(0.028)	(0.025)	(0.026)					
primary	0.029	0.036	0.028	0.032					
	(0.024)	(0.027)	(0.024)	(0.025)					
middle	-0.038	-0.037	-0.038	-0.030					
	(0.027)	(0.030)	(0.027)	(0.027)					
high	-0.037	-0.037	-0.035	-0.032					
	(0.024)	(0.027)	(0.024)	(0.024)					
adult literacy	0.008	0.020	0.005	0.006					
	(0.061)	(0.067)	(0.061)	(0.062)					
brahmins	no	yes	no	no		no	yes	no	no
caste/rel fragm	no	no	yes	no		no	no	yes	no
zamindar	no	no	no	yes		no	no	no	yes

Notes: The table gives the coefficients on the Congress dummy from the second stage regression using model (4), with the left-hand variable being the indicated public good. Each column includes the indicated control variables, as well as those included in the baseline regressions. Error terms are iid.

Table 8: Congress Victory and Public Goods: Alternative First-Stage

	Congress Victory								
	OLS	IV				OLS	IV		
outcome variable		Model (2) full sample	Model (1) full sample	Model (2) 5 states	outcome variable		Model (2) full sample	Model (1) full sample	Model (2) 5 states
	(1)	(2)	(3)	(4)		(6)	(7)	(8)	(9)
drinking water					**health facilities**				
any	-0.000	-0.002	-0.007	-0.007	health center	-0.001	-0.005	-0.008	0.001
	(0.002)	(0.009)	(0.010)	(0.008)		(0.003)	(0.011)	(0.012)	(0.008)
tap	-0.006	0.198**	0.295***	0.288***	primary health center	0.007*	0.012	0.024	0.007
	(0.018)	(0.080)	(0.101)	(0.100)		(0.004)	(0.016)	(0.019)	(0.013)
well	-0.028	-0.217**	-0.284**	-0.301***	health subcenter	-0.002	-0.056	-0.058	-0.011
	(0.022)	(0.095)	(0.111)	(0.111)		(0.012)	(0.047)	(0.052)	(0.030)
hand pump	0.021	0.128**	0.043	0.069	maternity-child	0.013*	-0.027	-0.033	-0.020
	(0.015)	(0.063)	(0.066)	(0.058)		(0.007)	(0.029)	(0.032)	(0.023)
tube well	-0.018	-0.124	-0.142	-0.102	hospital	0.006	0.009	0.013	0.001
	(0.021)	(0.085)	(0.095)	(0.087)		(0.008)	(0.033)	(0.037)	(0.005)
river	-0.000	0.017	-0.016	0.006	dispensary	-0.002	-0.024	-0.000	-0.007
	(0.008)	(0.033)	(0.036)	(0.028)		(0.007)	(0.027)	(0.030)	(0.008)
electrification					**irrigation**				
any	-0.011	0.018	-0.005	0.006	any	-0.030**	0.040	0.067	0.082
	(0.010)	(0.039)	(0.043)	(0.041)		(0.013)	(0.054)	(0.062)	(0.069)
domestic	-0.017	0.017	-0.002	0.009	government canal	-0.004	0.088*	0.061	0.041
	(0.011)	(0.042)	(0.046)	(0.048)		(0.012)	(0.052)	(0.056)	(0.048)
agricultural	-0.023	-0.147**	-0.177**	-0.170**	private canal	0.001	-0.003	-0.014**	-0.007
	(0.014)	(0.060)	(0.070)	(0.069)		(0.001)	(0.005)	(0.006)	(0.006)
industrial	-0.013	-0.132*	-0.178**	-0.141*	tank	0.006	0.012	0.023	-0.004
	(0.017)	(0.070)	(0.081)	(0.078)		(0.005)	(0.020)	(0.023)	(0.008)
comm and transp					tubewell (electrified)	-0.015*	-0.002	0.032	0.004
post office	0.012	-0.026	0.006	-0.029		(0.009)	(0.036)	(0.041)	(0.034)
	(0.011)	(0.047)	(0.052)	(0.032)	tubewell (non-elec)	-0.008	0.013	0.011	0.041
telegraph	0.001	-0.001	-0.006	-0.005		(0.008)	(0.030)	(0.033)	(0.044)
	(0.003)	(0.014)	(0.015)	(0.005)	well (electrified)	0.012*	0.004	-0.001	0.018
telephone	-0.026	-0.142*	-0.108	-0.018		(0.007)	(0.027)	(0.030)	(0.035)
	(0.018)	(0.075)	(0.081)	(0.066)	well (non-elec)	-0.010***	0.014	0.001	0.007
paved roads	-0.013	-0.047	-0.052	-0.028		(0.004)	(0.015)	(0.016)	(0.021)
	(0.011)	(0.043)	(0.047)	(0.040)	uncultivated	0.007	0.058*	0.057	0.053
education						(0.008)	(0.033)	(0.037)	(0.035)
any	-0.006	0.041*	0.032	0.056*					
	(0.006)	(0.025)	(0.027)	(0.030)					
primary	-0.004	0.029	0.024	0.040					
	(0.006)	(0.024)	(0.026)	(0.027)					
middle	-0.004	-0.038	-0.035	-0.020					
	(0.007)	(0.027)	(0.030)	(0.022)					
high	-0.002	-0.037	-0.041	-0.012					
	(0.006)	(0.024)	(0.027)	(0.014)					
adult literacy center	0.005	0.008	-0.023	0.052					
	(0.015)	(0.061)	(0.067)	(0.059)					

Notes: The table gives the coefficients on the Congress dummy using model (4) as the second-stage specification, and the indicated public good as the left-hand variable. Columns (2) and (7) use model (1) in the first stage, which includes only the uninteracted assassination dummy; columns (3)-(4) and (8)-(9) use model (2), which includes both the assassination dummy and its interaction with the absolute value of the party's prior vote margin. Columns (4) and (9) limit the sample to the 5 states holding election both before and after the assassination. Covariates are those included in the baseline regressions. Error terms are iid.

Table 9: First Stage: Assassination, Electoral Outcomes, and Incumbency

Outcome: Congress Victory 1991	non-incumbent		incumbent	
	(1)	(2)	(3)	(4)
Panel A: Model (1)				
post-assassin	0.219***	0.165***	0.365***	0.398***
	(0.055)	(0.053)	(0.071)	(0.087)
F-stat	15.758	9.785	26.703	21.113
R-squared	0.092	0.535	0.306	0.470
N	279	279	170	170
Panel B: Model (2)				
post-assassin	0.303***	0.233***	0.486***	0.530***
	(0.096)	(0.084)	(0.103)	(0.111)
post-assn X abs(prior margin)	-0.005	-0.004	-0.011	-0.013*
	(0.005)	(0.004)	(0.007)	(0.007)
F-stat	10.031	7.642	22.221	22.773
R-squared	0.096	0.537	0.317	0.482
N	279	279	170	170
state FEs	no	yes	no	yes

Notes: The table gives the estimates from the first stage regression. Columns (1) and (2) show the estimates from the sample of constituencies in which Congress was not the incumbent party, and column (3)-(4) from the sample of constituencies in which Congress was the incumbent party. Covariates are those included in the baseline regressions. Error terms are iid.

Table 10: Congress Victory and Pro-Poor Public Goods: Incumbency Disaggregation

Outcome: Public Good 2001 (sd)						
	Bardhan and Mookherjee			alternative		
	OLS	IV		OLS	IV	
		Model (2)	Model (1)		Model (2)	Model (1)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Non-Incumbents						
Congress	-0.102***	-0.500***	-0.616***	0.000	-0.384**	-0.431**
	(0.033)	(0.188)	(0.216)	(0.026)	(0.162)	(0.178)
Congress X pro-poor	0.116***	0.532***	0.568***	-0.093***	0.587**	0.613**
	(0.035)	(0.198)	(0.219)	(0.032)	(0.255)	(0.274)
R-squared	0.747	0.737	0.731	0.694	0.671	0.668
N	2790	2790	2790	4185	4185	4185
Panel A: Incumbents						
Congress	-0.131***	-0.378***	-0.358***	-0.047	-0.211**	-0.240**
	(0.042)	(0.130)	(0.137)	(0.038)	(0.102)	(0.108)
Congress X pro-poor	0.177***	0.664***	0.649***	0.030	0.305**	0.361**
	(0.064)	(0.187)	(0.207)	(0.070)	(0.150)	(0.173)
R-squared	0.836	0.829	0.830	0.731	0.729	0.729
N	1690	1690	1690	2535	2535	2535

Notes: The table gives the results of the second stage regression using model (3). Panel A gives the estimates using only the sample of constituencies in which Congress was not the incumbent party; panel B gives the estimate using the sample where Congress was the incumbent party. The results are given for both the Bardhan and Mookherjee classification and our alternative classification. Columns (4) and (9) show the results using model (2) as the first-stage specification, whereboth the assassination dummy and its interaction with the prior vote margin are included are included. Columns (5) and (10) use model (1) as the first-stage specification, with only the un-interacted assassination dummy included. Covariates are those included in the baseline regressions. Error terms are clustered at the constituency level.

Table 11: Congress Victory and Public Goods: Incumbency

	Congress Victory					
	IV				IV	
outcome variable	all	non-incumb	incumbent	outcome variable	all	non-incumb	incumbent
	(1)	(2)	(3)		(4)	(5)	(6)
drinking water				**health facilities**			
any	-0.002	-0.000	-0.002	health center	-0.005	-0.002	-0.009
	(0.009)	(0.014)	(0.010)		(0.011)	(0.012)	(0.017)
tap	0.198**	0.221*	0.197**	primary health center	0.012	0.010	0.020
	(0.080)	(0.127)	(0.095)		(0.016)	(0.020)	(0.024)
well	-0.217**	-0.452**	-0.051	health subcenter	-0.056	0.027	-0.150**
	(0.095)	(0.199)	(0.100)		(0.047)	(0.053)	(0.073)
hand pump	0.128**	0.057	0.177***	maternity-child	-0.027	-0.065	0.008
	(0.063)	(0.102)	(0.067)		(0.029)	(0.051)	(0.033)
tube well	-0.124	-0.150	-0.035	hospital	0.009	-0.005	0.034
	(0.085)	(0.126)	(0.108)		(0.033)	(0.011)	(0.056)
river	0.017	0.005	0.052	dispensary	-0.024	-0.021	-0.027
	(0.033)	(0.051)	(0.041)		(0.027)	(0.042)	(0.034)
electrification				**irrigation**			
any	0.018	-0.004	0.003	any	0.040	0.037	0.076
	(0.039)	(0.075)	(0.024)		(0.054)	(0.095)	(0.056)
domestic	0.017	-0.042	0.029	government canal	0.088*	0.105	0.119
	(0.042)	(0.079)	(0.030)		(0.052)	(0.082)	(0.076)
agricultural	-0.147**	-0.265**	-0.002	private canal	-0.003	-0.011	0.007
	(0.060)	(0.122)	(0.064)		(0.005)	(0.009)	(0.006)
industrial	-0.132*	-0.375**	0.085	tank	0.012	0.020	0.002
	(0.070)	(0.154)	(0.073)		(0.020)	(0.027)	(0.028)
comm and transp				tubewell (electrified)	-0.002	0.032	-0.043
post office	-0.026	-0.004	-0.034		(0.036)	(0.071)	(0.026)
	(0.047)	(0.061)	(0.053)	tube well (non-elec)	0.013	0.040	-0.005
telegraph	-0.001	0.004	-0.007		(0.030)	(0.066)	(0.017)
	(0.014)	(0.009)	(0.023)	well (electrified)	0.004	-0.036	0.041
telephone	-0.142*	-0.085	-0.198**		(0.027)	(0.054)	(0.030)
	(0.075)	(0.115)	(0.094)	well (non-elec)	0.014	-0.001	0.024**
paved roads	-0.047	-0.062	-0.105**		(0.015)	(0.028)	(0.011)
	(0.043)	(0.070)	(0.052)	uncultivated	0.058*	0.119**	0.008
education					(0.033)	(0.056)	(0.044)
any	0.041*	0.009	0.057*				
	(0.025)	(0.039)	(0.031)				
primary	0.029	-0.022	0.059*				
	(0.024)	(0.039)	(0.032)				
middle	-0.038	-0.081*	-0.018				
	(0.027)	(0.045)	(0.035)				
high	-0.037	-0.037	-0.022				
	(0.024)	(0.036)	(0.027)				
adult literacy center	0.008	0.017	0.010				
	(0.061)	(0.077)	(0.093)				

Notes: The table gives the coefficients on the Congress dummy from the second-stage regression using model (4), with the left-hand variable being the indicated public good. Columns (2) and (5) give results using the sample of constituencies in which Congress was not the incumbent party; and Columns (3) and (6) the sample of constituencies in which it was the incumbent party. Covariates are those included in the baseline regressions. Error terms are iid.

Table 12: Regression Discontinuity: Balance

	optimal bw		optimal bw	full sample
	lost	won	linear	quartic
	(1)	(2)	(3)	(4)
cities				
urbanization	0.233	0.220	-0.073	-0.042
			(0.133)	(0.055)
workers				
cultivators	0.084	0.065	-0.051	-0.003
			(0.042)	(0.019)
agricultural labor	0.125	0.090	-0.077	-0.027
			(0.065)	(0.024)
forestry	0.019	0.021	0.015	-0.002
			(0.020)	(0.006)
mining	0.003	0.019	-0.029**	-0.004
			(0.012)	(0.017)
manufacturing (hh)	0.030	0.103	-0.036	0.025
			(0.169)	(0.018)
manufacturing (non-hh)	0.150	0.161	0.033	0.005
			(0.058)	(0.029)
construction	0.050	0.049	0.010	-0.000
			(0.021)	(0.006)
trade	0.212	0.216	0.033	0.017
			(0.038)	(0.016)
transportation	0.080	0.073	0.022	-0.004
			(0.038)	(0.010)
other	0.246	0.223	0.016	-0.008
			(0.067)	(0.024)
marginal workers	0.041	0.025	-0.050	-0.008
			(0.030)	(0.007)
elections				
victory 1989	0.312	0.577	0.231	0.108
			(0.167)	(0.121)
vote share 1989	39.712	42.224	-0.356	-1.078
			(2.259)	(2.748)
election margin 1989	-7.940	-0.981	-0.405	-2.001
			(3.435)	(4.754)
close election 1989	0.469	0.423	-0.209	-0.124
			(0.220)	(0.160)
ethnicity				
brahmins	0.046	0.044	-0.019	0.000
			(0.018)	(0.008)
muslims	0.070	0.105	0.058	0.023
			(0.043)	(0.022)
sikhs	0.044	0.040	-0.003	0.006
			(0.009)	(0.012)
scheduled castes/tribes	0.214	0.232	0.095	0.035
			(0.069)	(0.041)
caste/religious fragmentation	0.789	0.860	-0.077	-0.006
			(0.106)	(0.044)
geography				
steep/sloping	0.003	0.000	0.000	0.001
			(0.000)	(0.001)
barren/rocky	0.005	0.003	-0.010*	-0.002
			(0.004)	(0.002)
princely states	0.412	0.352	-0.041	-0.132
			(0.176)	(0.087)
zamindar	0.438	0.379	0.069	-0.014
			(0.159)	(0.098)

Notes: Columns (1) and (2) give the characteristics of the constituencies located within the optimal bandwidth around the win/loss threshold as determined using Imbens and Kalyanaraman (2009). Column (3) gives the difference at the discontinuity as determined by a regression of the indicated variable on a dummy for Congress victory and including a linear in the Congress vote margin estimated separately for each side of the win/loss threshold, using the sample of constituencies within the optimal bandwidth. Column (4) uses the full sample and includes a quartic in the 1991 vote margin estimated separately for each side of the threshold.

Table 13: Regression Discontinuity: Pro-Poor Public Goods

Outcome: Public Good 2001 (sd)				
	Bardhan and Mookherjee		alternative	
	optimal bw linear	full sample quartic	optimal bw linear	full sample quartic
	(1)	(2)	(3)	(4)
Congress	-0.032	-0.148	-0.002	-0.027
	(0.229)	(0.097)	(0.181)	(0.070)
Congress X pro-poor	-0.048	0.199	0.041	0.148
	(0.257)	(0.123)	(0.278)	(0.132)
R-squared	0.820	0.785	0.724	0.708
N	360	4480	540	6720

Notes: This table gives the results for regressions using model (5). Columns (1) and (3) include a local linear in the Congress vote share, estimated separately for pro-poor and non-pro-poor public goods; and limit the sample to those constituencies within the optimal bandwidth around the win/loss threshold. Columns (2) and (4) include the full sample of constituencies, and quartic polynomials. Columns (1)-(2) use the Bardhan and Mookherjee (2011) classification, and columns (3)-(4) the alternative classification. Covariates are those included in the baseline regressions. Optimal bandwidths are estimated using Imbens and Kalyanaraman (2009). Error terms are clustered at the constituency level.

Table 14: Regression Discontinuity: Congress Victory and Public Goods

outcome variable	optimal bw lost	optimal bw won	Congress Victory optimal bw linear	Congress Victory full sample quartic	outcome variable	optimal bw lost	optimal bw won	Congress Victory optimal bw linear	Congress Victory full sample quartic
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
drinking water					**health facilities**				
any	0.001	-0.000	0.006	-0.011**	health center	0.020	0.026	0.011	-0.005
			(0.011)	(0.006)				(0.019)	(0.007)
tap	0.184	0.212	-0.155	-0.022	primary health center	0.035	0.066	-0.024	0.009
			(0.095)	(0.046)				(0.052)	(0.011)
well	0.000	-0.047	-0.021	-0.026	health subcenter	0.175	0.122	0.005	-0.029
			(0.118)	(0.057)				(0.065)	(0.030)
hand pump	0.266	0.229	0.035	0.061	maternity-child	0.045	0.035	-0.047	-0.017
			(0.064)	(0.039)				(0.065)	(0.018)
tubewell	0.003	0.080	-0.007	0.004	hospital	0.056	0.114	0.028	0.017
			(0.080)	(0.055)				(0.053)	(0.022)
river	0.022	0.042	-0.039	-0.008	dispensary	0.001	-0.009	-0.013	-0.011
			(0.042)	(0.022)				(0.055)	(0.018)
electrification					**irrigation**				
any	0.085	0.040	-0.006	-0.010	any	0.123	0.100	-0.007	-0.007
			(0.037)	(0.025)				(0.057)	(0.034)
domestic	0.101	0.081	-0.024	-0.002	government canal	0.051	0.040	0.009	0.013
			(0.036)	(0.028)				(0.065)	(0.030)
agricultural	0.145	0.105	0.038	0.027	private canal	-0.000	0.006	-0.014	-0.001
			(0.069)	(0.037)				(0.000)	(0.003)
industrial	0.223	0.214	-0.015	0.048	tank	0.021	-0.004	-0.022	-0.018
			(0.055)	(0.043)				(0.084)	(0.013)
comm and transp					tubewell (electrified)	0.023	0.009	0.017	0.014
post office	0.005	0.022	0.058*	0.006				(0.025)	(0.024)
			(0.030)	(0.028)	tube well (non-elec)	0.001	0.011	0.012	0.009
telegraph	0.020	0.027	0.020	0.007				(0.030)	(0.020)
			(0.014)	(0.009)	well (electrified)	0.018	0.032	-0.012	0.012
telephones	0.401	0.381	-0.014	0.047				(0.030)	(0.018)
			(0.096)	(0.046)	well (non-elec)	-0.007	-0.001	0.003	-0.006
paved roads	0.173	0.072	-0.107	-0.068**				(0.010)	(0.010)
			(0.065)	(0.028)	uncultivated	0.003	-0.010	-0.011	-0.017
education								(0.036)	(0.021)
any	0.041	0.029	-0.009	-0.016					
			(0.036)	(0.015)					
primary	0.060	0.045	-0.018	-0.020					
			(0.039)	(0.015)					
middle	0.096	0.090	-0.050	-0.015					
			(0.039)	(0.018)					
high	0.039	0.052	0.056**	0.006					
			(0.020)	(0.015)					
adult literacy	0.068	0.113	-0.009	0.067*					
			(0.132)	(0.039)					

Notes: Columns (1)-(2) and (5)-(6) give the change between 1991 and 2001 in the indicated public good across the win/loss threshold within the optimal bandwidth. Columns (3) and (7) give the coefficient on the Congress dummy using a local linear in the Congress party's 1991 vote margin on the sub-sample within the optimal bandwidth of the win/loss threshold. Columns (4) and (8) use the full sample, including a quartic in Congress party's 1991 vote margin. Covariates are those included in the baseline regressions. Optimal bandwidths are estimated using Imbens and Kalyanaraman (2009). Error terms are iid.

Table 15: Congress Victory and Public Goods: All Identification Strategies

	Congress Victory					
	1991 election			RDs and later elections		
outcome variable	OLS	IV	RD	1996	1998	1999
	(1)	(2)	(3)	(4)	(5)	(6)
tap (drinking water)	-0.006	0.198**	-0.022	-0.040	-0.041	-0.133***
	(0.018)	(0.080)	(0.046)	(0.048)	(0.050)	(0.051)
well (drinking water)	-0.028	-0.217**	-0.026	-0.080	-0.077	0.054
	(0.022)	(0.095)	(0.057)	(0.058)	(0.059)	(0.061)
hand pump (drinking water)	0.021	0.128**	0.061	-0.008	0.009	0.001
	(0.015)	(0.063)	(0.039)	(0.040)	(0.041)	(0.042)
agricultural electrification	-0.023	-0.147**	0.027	-0.019	0.011	0.020
	(0.014)	(0.060)	(0.037)	(0.037)	(0.038)	(0.039)
industrial electrification	-0.013	-0.132*	0.048	-0.020	-0.018	-0.067
	(0.017)	(0.070)	(0.043)	(0.044)	(0.045)	(0.046)
telephone	-0.026	-0.142*	0.047	-0.054	-0.036	0.002
	(0.018)	(0.075)	(0.046)	(0.047)	(0.049)	(0.050)
paved roads	-0.013	-0.047	-0.068**	-0.007	-0.019	0.019
	(0.011)	(0.043)	(0.028)	(0.029)	(0.029)	(0.030)
adult literacy center	0.005	0.008	0.067*	-0.006	0.010	0.047
	(0.015)	(0.061)	(0.039)	(0.040)	(0.041)	(0.042)
health center	-0.001	-0.005	-0.005	0.013*	-0.003	0.003
	(0.003)	(0.011)	(0.007)	(0.007)	(0.008)	(0.008)
hospital	0.006	0.009	0.017	0.044**	0.010	-0.036
	(0.008)	(0.033)	(0.022)	(0.022)	(0.023)	(0.023)
irrigation	-0.030**	0.040	-0.007	-0.054	-0.024	0.010
	(0.013)	(0.054)	(0.034)	(0.035)	(0.036)	(0.037)
government canal	-0.004	0.088*	0.013	-0.028	-0.003	-0.022
	(0.012)	(0.052)	(0.030)	(0.031)	(0.032)	(0.033)

Notes: The table gives the coefficients on the Congress dummy using each identification strategy, with the indicated public good as the left-hand variable. RDs are estimated with dummies for Congress victory in the indicated years, and including quartics in the the party's vote margin. Covariates are those included in the baseline regressions. Error terms are iid.

Table 16: Incumbency Advantage

Outcome: Congres Victory 1996	OLS				IV		RD	
	pre-assassin		full sample					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Congress Incumbent	0.249***	0.218***	0.253***	0.192***	0.210	0.167	-0.083	-0.095
	(0.074)	(0.079)	(0.049)	(0.051)	(0.207)	(0.206)	(0.130)	(0.130)
N	206	206	449	449	449	449	449	449
R-squared	0.343	0.360	0.291	0.323	0.290	0.323	0.355	0.366
1989 controls	no	yes	no	yes		yes	no	yes

Notes: The table give the results of regressions of 1996 Congress victory on a dummy for victory in the 1991 election. Columns (1)-(2) use only the sample of constituencies voting before the assassination; columns (3) and (4) the full sample of constituencies. The RD uses the full sample of constituencies, and includes quartics in the 1991 vote margin. Covariates are those included in the baseline regressions. Error terms are iid.

Table 17: Swing and Core Constituencies

outcome variable	Congress Victory	swing	core (> 20)	swing	core (won all)	outcome variable	Congress Victory	swing	core (> 20)	swing	core (won all)
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)
drinking water						**health facilities**					
any	-0.000	0.003*	0.008***	0.002	0.003	health center	-0.001	-0.002	-0.001	-0.002	-0.002
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)		(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
tap	-0.006	0.015	0.044*	0.008	-0.015	primary health center	0.007*	0.006	0.002	0.006	-0.008
	(0.018)	(0.017)	(0.024)	(0.017)	(0.024)		(0.004)	(0.004)	(0.006)	(0.004)	(0.005)
well	-0.028	0.012	-0.007	0.014	0.011	health subcenter	-0.002	0.009	-0.002	0.010	-0.004
	(0.022)	(0.021)	(0.030)	(0.021)	(0.029)		(0.012)	(0.011)	(0.015)	(0.011)	(0.015)
hand pump	0.021	-0.006	0.034*	-0.011	0.012	maternity-child	0.013*	0.000	0.002	0.000	0.010
	(0.015)	(0.014)	(0.020)	(0.014)	(0.020)		(0.007)	(0.007)	(0.009)	(0.007)	(0.009)
tube well	-0.018	0.002	0.000	0.003	0.014	hospital	0.006	0.011	0.001	0.010	-0.014
	(0.021)	(0.020)	(0.028)	(0.020)	(0.028)		(0.008)	(0.008)	(0.011)	(0.008)	(0.011)
river	-0.000	0.008	0.024**	0.004	-0.010	dispensary	-0.002	0.006	-0.002	0.006	-0.004
	(0.008)	(0.008)	(0.011)	(0.008)	(0.011)		(0.007)	(0.007)	(0.009)	(0.006)	(0.009)
electrification						**irrigation**					
any	-0.011	-0.009	-0.014	-0.007	0.001	any	-0.030**	0.008	-0.002	0.009	0.004
	(0.010)	(0.009)	(0.013)	(0.009)	(0.013)		(0.013)	(0.013)	(0.017)	(0.012)	(0.017)
domestic	-0.017	-0.005	-0.017	-0.003	-0.013	government canal	-0.004	0.017	-0.011	0.018*	0.004
	(0.011)	(0.010)	(0.014)	(0.010)	(0.014)		(0.012)	(0.011)	(0.015)	(0.011)	(0.015)
agricultural	-0.023	0.013	-0.017	0.016	0.025	private canal	0.001	0.001	0.002	0.001	0.002
	(0.014)	(0.014)	(0.019)	(0.013)	(0.018)		(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
industrial	-0.013	0.007	0.012	0.006	0.013	tank	0.006	0.003	-0.003	0.004	0.022***
	(0.017)	(0.016)	(0.022)	(0.015)	(0.022)		(0.005)	(0.005)	(0.007)	(0.005)	(0.006)
comm and transp						tubewell (electrified)	-0.015*	-0.011	0.001	-0.012	-0.010
post office	0.012	0.004	0.030**	-0.000	0.006		(0.009)	(0.009)	(0.012)	(0.009)	(0.012)
	(0.011)	(0.010)	(0.014)	(0.010)	(0.014)	tube well (non-elec)	-0.008	-0.002	-0.011	-0.001	-0.009
telegraph	0.001	0.001	0.005	0.000	-0.006		(0.008)	(0.007)	(0.010)	(0.007)	(0.010)
	(0.003)	(0.003)	(0.005)	(0.003)	(0.004)	well (electrified)	0.012*	-0.008	0.029***	-0.012*	0.005
telephone	-0.026	0.046***	0.034	0.039**	-0.034		(0.007)	(0.007)	(0.009)	(0.006)	(0.009)
	(0.018)	(0.017)	(0.023)	(0.017)	(0.023)	well (non-elec)	-0.010***	0.001	-0.011**	0.002	0.002
paved roads	-0.013	-0.014	0.010	-0.015	-0.009		(0.004)	(0.004)	(0.005)	(0.003)	(0.005)
	(0.011)	(0.010)	(0.014)	(0.010)	(0.014)	uncultivated	0.007	-0.008	-0.013	-0.006	0.014
education							(0.008)	(0.008)	(0.011)	(0.008)	(0.011)
any	-0.006	0.002	-0.010	0.003	-0.012						
	(0.006)	(0.006)	(0.008)	(0.006)	(0.008)						
primary	-0.004	0.005	-0.007	0.006	-0.013*						
	(0.006)	(0.006)	(0.008)	(0.006)	(0.008)						
middle	-0.004	0.011*	0.015*	0.008	-0.010						
	(0.007)	(0.007)	(0.009)	(0.006)	(0.009)						
high	-0.002	0.003	0.018**	-0.000	0.000						
	(0.006)	(0.006)	(0.008)	(0.005)	(0.008)						
adult literacy center	0.005	-0.016	0.003	-0.016	0.018						
	(0.015)	(0.014)	(0.020)	(0.014)	(0.020)						

Notes: The results come from OLS regressions, with dummies for core and swing constituencies. Columns (2)-(3) and (7)-(8) have core constituencies defined as those in which Congress won by a margin greater than 20 ppts; columns (4)-(5) and (9)-(10) have them defined as those in which Congress won all 4 elections between 1980 and 1991. In both specifications, swing constituencies are defined as those in which the party won or lost by a margin of less than 5. Covariates are those included in the baseline regressions. Error terms are iid.