Politics and Public Goods in Developing Countries: Evidence from India

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Abstract: The role of political parties in shaping development outcomes through policy interventions has been studied through a class of models mapping the underlying characteristics of society to political parties and public policy. In empirical analysis, however, causal identification has generally been limited either to the reduced-form effects of the underlying social characteristics, or to the entire complex of factors, many unobserved, determining electoral outcomes. To better understand the mediating role played by parties, we examine the effects of an exogenous shift in party representation in India's 1991 national elections, employing as an instrument the assassination of the Congress party leader mid-way through the voting process, which had the effect of dramatically shifting the probability of Congress victory for a sub-set of constituencies. Using this variation, we find that assignment to representation by the ruling Congress party causes a substantial shift in the composition of the public goods provided, with increases in the availabilitiy of drinking water and declines in infrastructure, consistent with the party's expressed populist, pro-poor agenda. We also estimate the party effects using as an alterantive identification strategy a regression discontinuity design. In contrast to the results using the IV strategy, the RD results are generally small and insignificant, consistent with models emphasizing the importance of both the identity of the winning party and the margin of its victory in determining policy outcomes. The discrepancy between the IV and RD results is mirrored in dramatically different estimates of the electoral advantage accruing to incumbent parties.

1 Introduction

1.1 Overview

Democratic governance has made rapid gains in recent decades in the developing world, with the "third wave" of democratization in the 1970s and 1980s witnessing the establishment of democracy in 35 countries, primarily in Latin America and Asia (Huntington, 1991); and the "Arab Spring" potentially heralding a "fourth wave." Included amongst developing countries possessing democratic institutions are some of the largest, such as Brazil, Indonesia, and India. As a consequence, political parties have become increasingly important actors in setting policy priorities and establishing the institutional and infrastructural framework for human and economic development. Political parties play multiple roles in such settings, acting as agents of particular social groups, ideological partisans, and instruments for the professional and pecuniary advancement of opportunistic political actors. Given the enormous inequities often present in such societies, populist politics features prominently in the political economy of developing countries, with the interests of the poor variously expressed and/or co-opted by political and economic elites through the strategic distribution of government patronage. India, the locus of our study, is remarkable among developing countries for the duration and robustness of its democratic institutions. A highly mobilized electorate has resulted in a profusion of parties promoting the interests of the myriad, and often overlapping, class, caste, linguistic, religious, and regional groupings.

The political economy literature on developing countries gives a useful analytical framework for understanding how the underlying social cleavages in a country such as India will be translated into political and policy outcomes. Models have been worked out to better understand how factors such as income inequality, social fragementation, and group cohesion will shape policy outcomes (Banerjee et al., 2008). The literature has less to say, however, about the role played by mediating political institutions in determining outcomes; political competition is generally accorded a derivative role, functioning primarily as the venue withih which these social forces play out, with outcomes largely pre-determined by the characteristics each group brings to the contest. Political science research has focused more closely the role of the political system and party competition in determining policy outcomes. The workhorse models of the literature are concerned with understanding the conditions under which parties will direct patronage to their "core" constituents, the ostensible *raison d'etre* of the party, and when they will instead target "swing" voters, due to the exigencies of political competition (Cox and McCubbins, 1993; Dixit and Londregan, 1996).

Our paper demonstrates the importantance of politics and party preference in determining the distri-

bution of public goods, independent of local social characteristics. Previous empirical studies examining the role of political parties have adopted a patronage-based framing, confining their analysis to a single public good with the prediction that the item in question would be positively correlated either with "swing" or "core" status, depending on the model invoked. In our study, we shift attention to a model in which parties are ideologial, and evince their preferences through the *composition* of public goods allocated to favored constituencies. For example, invoking the observation of Bardhan and Mookherjee (2011), that "the poor will have a greater preference for subsistence or inferior goods such as housing, sanitation, drinking water or BPL cards relative to agricultural inputs [favored by wealthier farmers]," we would predict that a party with a pro-poor agenda would reallocate public goods towards the former and away from the latter.[1] It is not clear *a priori* that parties will function in such a way in developing countries. Models emphasizing the opportunistic character of political parties (Downs, 1957) predict policy convergence to the preferred policy of the median voter, so that party identity has no influence on policy outcomes. Consistent with this prediction, Bardhan and Mookherjee (2010) find that the Left Front party in West Bengal, though associated with the advocacy of land reforms, shows no higher proclivity than its rival for implementing land reforms when increasing its control over local political institutions.[2]

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. Drinking water (tap and handpump) coverage increase, while infrastructure availability declines – electrification (industrial and agricultural, but not domestic) 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. The trade-off appears to be one favoring the preferences of the poor, against the preferences of the more affluent. 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. There is also evidence for allocations driven by considerations of patronage and corruption.

To identify the effect of Congress representation, we employ an instrumental variables identification strategy to induce exogenous variation in the constituencies won by Congress in the 1991 Indian national

[1] Though in principle a party could implement its agenda by increasing the favored ood and leaving the rest untouched, budget constraints and political/bureaucratic constraints against severe discrimination likely necessitate some sort of reallocation to move the vector of public goods nearer the party's bliss point. Nayak et al. (2002) describe how such resource constratints were becoming particularly binding during precisely the years of our study.

[2] 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 large margins.

elections. The instrument used is a dummy variable indicating whether a constituency held its election before or after the assassination of Rajiv Gandhi. The 1991 election was conducted over the course of two rounds of voting 3 weeks apart, with approximately half the constituencies voting in each round.[3] 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. Using this exogenous shift in the probability of Congress victory, we estimate the causal effect of Congress representation on public goods allocations.

Ours is one of the few papers to use an instrumental variables strategy for identifying the effects of electoral outcome,[4] with most previous research generating random variation in electoral outcomes through a regression discontinuity design. The use of an IV allows us to test the generalizability of estimates from such regression discontinuity designs, and to better understand their potential limitations. While it is widely understood that identification in an RD yields local average treatment effects only within the vicinity of the discontinuity, we suggest that this qualification is likely to be particularly crucial in 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. Consistent with these concerns, the results obtained through an RD are generally insignificant and always quite small, in stark contrast to the large and significant coefficients obtained through the IV design. In this respect, our 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 the two 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 quite small and statistically insignificant. Lee and Mas (2011), looking instead at the relationshionship between the margin of loss or victory in a unionization election and the cumulative two-year stock returns to the firm, 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

[3]The second round of votin 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 teh 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.

[4]Another example is provided by Bardhan and Mookherjee (2010), who use national political trends interacted with local incumbency to generate variation in local political outcomes.

the threshold.

To reconcile the disparate findings of the IV and RD strategies, we argue for the importance of the margin of victory in mediating the effects of electoral outcomes. Because our instrument induces variation in electoral outcomes for a broad range of victory margins, it is able to capture party effects that are not identified in a regression discontinuity design. A large literature can be cited as to why the margin of victory might matter for 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, an instrumental strategy will yield local average treatment effects more general than those found through an RD design.

The magnitudes of the effects uncovered 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 idiosyncracies 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. More speculatively, we would also note the seeming promotion by the Congress party of policies popular with the poor at the expense of those more conducive to economic growth, and the potential thereby for populist politics to influence not only the distribution of public goods, but also more general patterns of economic development.[5]

1.2 Literature Review

Banerjee et al. (2008) provide a useful overview of the state of the literature on the political economy of developing countries. The division of society into competing economic and ethno-linguistic groups, with divergent preferences and abilities to influence public policy, underlies most of the models employed,

[5]Though it is important to note that tap water (and government irrigation and primary education) is not necessarily less growth-promoting than (agricultural and industrial) electrification and paved roads. For example, Dinkelman's (2011) analysis of the effects of rural electrification indicates that one of the channels through which it promotes development is by freeing individuals, particularly women, from household labor, and allowing them to enter more productive market activities. The expansion of tap water access could potentially have a similar effect by reducing the time and effort required for collecting water, in addition to the more direct effects through improved health outcomes. Government irrigation and primary education would also be potentially conducive to long-run economic growth.

with the crucial parameters derived from factors such as the groups' respective abilities to influence policymakers, and the distribution of their underlying preferences. More recently, the coincidence of ethno-linguistic fragmentation and economic inequality has been identified as particularly inimical to development and social stability (Alesina et al, 2012; Stewart, 2000, 2002; Stewart et al, 2005; Huber and Suryanarayan, 2012).

A related literature is that on the relationship between the competitiveness of elections and policy outcomes. Though in principle there is no necessary connection between the two lines or research, because the level of political competition is often determined by underlying social conflicts the two can be usefully paired. Besley et al. (2010) find that the reduction in political competition in the American South from the early-1900s through the 1960s – driven by racism against blacks and operationalized through voting restrictions, literacy tests, and poll taxes, and which effectively secured for the Southern Democrats a political monopoly – led to lower economic growth, which the authors attribute to growth-inimical policies pursued in the absence of swing voter influence, the latter assumed to have a preference for growth-enhancing policies. Naidu (2010) finds that the disenfranchisement of blacks in the American South led to reduction in the teacher-child and teacher-student ratios in black schools. Banerjee and Somanathan (2007) apply the Herfindahl index to political competition, and find little evidence for a systematic relationship between political fragementation and public goods provision. Huber and Suryanarayan (2012) show that the ethnic polarization of politics is higher where ethnic cleavages are coincident with class hierarchies.

Another line of research has emphasized the strategic timing of government expenditures to win elections, what is termed the "political business cycle." Dinç (2005) finds evidence for increases in lending by government-controlled banks during election years, controlling for lending levels in privately held banks. Revealingly, it is the 19 emerging market economies that show this behavior, while the 17 developed countries in the sample do not. Cole (2009) finds that state-owned banks in India extend loans to farmers in advance of elections, and that this occurs principally in closely contested constituencies, as measured by the margin of the subsequent election. Khemani (2004) finds evidence for a reduction of targetable (as opposed to broad-based) taxes in state election years, and increases in targetable investment spending, consistent with an attempt to win over pivotal constituencies.

A number of studies have focused on the relationship between party power and government outlays. Levitt and Snyder (1995) show that the percentage of the electorate within a constituency belonging to the Democratic Party is associated with an increase in federal outlays. The effect is strongest for programs initiated in the late-1970s, when the Democratic Party was pre-eminent in the legislative and

exective branches. Interestingly, the party affiliation of the Congressperson representing the constituency has no effect on fiscal outlays. The authors attribute their results to the difficulty of quickly altering expenditure patterns, so that while long-term spending patterns can be influenced by party politics, short-run expenditures are less easily influenced. Miguel and Zaidi (2003) examine the relationship between electoral outcomes and changes in education expenditures in Ghana in the late-1990s. The authors find that, when the ruling party sweeps all the electoral constituencies within an administrative district, schools receive additional funding. However, using a regression discontinuity design, the authors find that the party's winning individual electoral constituencies has no effect on outlays, which they attribute to the bureaucracy's success in insulating expenditure decisions from political influence. Vaishnav and Sircar (2011) present a model in which the ruling party's decision to allocate goods to "swing" versus "core" constituencies depends on the competitiveness of the electoral environment. Taking this thesis to the data, the authors show that closely contested state election in Tamil Nadu are associated with increased expenditures in swing constituencies, whereas elections in which the ruling party wins by a comfortable margin result in allocations skewed towards core constituencies. Lee et al. (2004) find little evidence for Downsian convergence across Republicans and Democrats in US Congressional elections. Politicians elected by a narrow margin have roll call voting records of the same ideological consistency as party members elected by a larger margin, indicating that narrowly contested elections do not force politicians to adopt more moderate policies. Ferreira and Gyourko (2007), using a regression discontinuity design on mayor elections, find no effects of party identity on crime rates or the size and composition of government at the city level. Most similar to our work, Albouy (2009) examines the relationship between party preference, majority status, and government allocations from congressional elections in the US. He finds 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.

Methodologically, our paper relates to the growing literature in which regression discontinuities are employed to determine the effects of electoral outcomes, whether on future electoral outcomes (incumbency effects) or on policy outcomes decided by political agents. Lee (2001) employs a regression discontinuity to determine the effects of incumbency on the prospects for future election in US congressional elections, finding a significant advantage accruing from the holding of office. Linden (2004), applying a similar methodology to election in India, finds that Indian parliamentary representatives actually suffer

a disadvantage from their incumbency status. DiNardo and Lee (2004) find little effect of unionization on wages or firm survival, as identified through the discontinuity in union representation at the 50% threshold in unionization elections. Miguel and Zaidi (2003) similarly find little effect of ruling party victory on funding for primary schools in Ghana through an RD design. However, they do find increases in public school funding where the ruling party has swept all the voting constituencies nested within an administrative district. Other papers have in contrast uncovered substantial effects through an RD strategy. Dell (2011) uses an RD to identify the effect of the victory of the PAN party in municipal elections on drug-related violence, finding that the party's more aggressive approach to drug trafficking resulted in increases in drug-related homicides. Lee et al. (2004) find substantial differences between Republicans and Democrats in Congressional role call votes at the electoral discontinuity. Albouy (2009) uses both a fixed effects and an RD design to uncover the results discussed above on the effects of majority status and party identity on government expenditures.

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, and culminated in July's currency devalauation 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 as a deliberate insult to the sentiments of Hindu worshippers. During the 1980s, the BJP used the issue of "re-building" a Hindu temple at this site to mobilize a significant portion of the Indian population, helping to catapult the party to national prominence. The culmination of this strategy occurred during the run-up to the 1991 election, when the party launched a highly effective campaign centered around the issue, with the leader of the BJP traveling 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). More significant were the national effects: the temple-building campaign is widely regarded as having been central to the rise of the party as a national force. The percentage of seats won by the BJP increased steadily during these years, rising from 16% of seats in 1989 to 33% of seats in 1998.

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.[6] The Mandal Commission recommended 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 hierarachy, but nonetheless suffering significant social and economic disadvantage.[7] The recommendations of the Commission, issued in 1980, had been shelved for a decade, until V.P. Singh, prime minister and leader of the Janata Dal, commanded their enactment in 1990. Chaos immediately ensued, with massive, often violent protests across the country, and dozens of high-caste young people immolating themselves in the streets in protest.

2.2 The 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

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

[7] 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.

of India, an independent entity established in 1950 by Article 324 of the Indian Constitution for the express purpose of conducting elections free from the corruptions of political interference; it generally highly regarded both within India and by international observers (Pastor, 1999). At the time of our study, the Commission was responsible for operating approximately 900,000 polling stations, requiring the employment of 4.5 million people (Gill, 1998). Due to the logistical difficulties of conducting so vast an operation while still ensuring the intergrity of the vote, the Commission divides national elections across multiple rounds of voting, allowing it to multiply the resources deployed for each voter. The 1991 elections were scheduled to for May 20 and May x, with approximately half the constituencies to vote in each round.

The first round of voting had gone badly for the Congress party, with the party securing 37% of the vote and winning 26% of the constituencies competed. 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 more particularist appeals to the interests of caste and religion, against the more secular and 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. Table 1 details the changes that occurred across these two rounds of voting. The Congress party won 27% of contested seats in the elections held before the assassination, but 65% in those held after (though it should be noted that this was due in part to the already higher probability of Congress representation in constituencies voting after the assassination). The BJP enjoyed similar success in constituencies before and after the assassination, suggesting little effect on their vote share. In contrast, the Janata Dal Party witnessed a 20% decline in the probability of victory across the two rounds, winning 31% of contested seats before the assassination, and 11% after. Both the Regional parties and the Left Front parties also fared substantially worse in the aftermath of the assassination. This suggests that the Congress benefited at the expense of a broad array of other political groupings.

2.3 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 political competition from the late-1960s onwards, coupled with increased 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 the 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 privelege of 1971 giving way to the rapid improvement from 1971 to 1991 of precisely those populations previously negelected by the political elite.

Through cross-sectional analysis, the authors determine the most salient correlates of access to public goods in 1971. Mulims, Scheduled Castes, and Scheduled Tribes are found to fare far worse than the overall population, having lower access to education services, health facilities, drinking water, electricity, and communication facilities. Brahmins, who occupy the upper ranks of the social hierarachy, had greater access to education facilities and post offices, but were not otherwise advantaged. Social fragmentation, as measured by a Herfindahl index, was associated with lower access to public goods.[8] Interestingly, land inequality is associated with greater availability of schools, piped water, electricty, phone connectivity, post offices, and paved roads, likely due to the greater political clout of rural elites where inequality high.

Between 1971 and 1991, however, the growth in public goods did not track the earlier correlations; these years were instead marked by a substantial convergence, with previously backwards areas catching up to the more advanced. Given the low prior levels of public goods, the convergence that occurred was not driven by favored districts having no remaining margin for growth; rather, the authors surmise, convergence was indicative of the government's commitment to the extension of public goods to previously deprived areas, consistent with explicit government policy, as articulated in the Congress party's 1971 campaign slogan *garibi hatao* ("abolish poverty"). While there continue to exist significant and instructive correlations in public goods growth and the previously described covariates, these relationships are completely swamped by the convergence effect. Another noteable feature of the 1971-1991 change is the far greater improvements witnessed is Scheduled Caste areas as compared to Scheduled Tribe areas, which the authors argue is due to the success of the Scheduled Castes in mobilizing themselves politically, even to the extent of establishing an independent party, whereas the Schedule Tribes remained dependent

[8] The latter two results must be treated with caution, given the small level of variation in the percentage of brahmins and social fragmentation.

on the benefactions of the Congress party.

The improvement in public goods availability detailed by Banerjee and Somanathan (2007) from 1971-1991 continue through the period of our study, 1991-2001, and the convergence effects detailed there continue to dominate the patterns of change. Table 2 details the levels of public goods for 1991 and 2001, as measured by the percentage of villages having access to the indicated public good. Our 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 electrifiction, drinking water, and health facilities. Among the more notable changes are: paved roads increasing from 43% to 58%; telephones from 9% to 38%; middle schools from 22% to 30%; local health sub-centers from 9% to 16%; tap water from 18% to 35%; handpump drinking-water from 63% to 75%; tubewell from 19% to 32%; village-level industrial electrification from 34% to 51%; and irrigated land from 41% to 48%.

2.4 Functions of Public Goods

The public goods enumerated above vary in their relative importance to different classes of society. Though there will be significant heterogeneity according to factors that will not always be observable, a rough sketch can be given. We classify the following as being relatively more attractive to the poor: drinking water, and primary education. Favored by more affluent households will be items such as: agricultural and industrial electrification, irrigation, telephones, paved roads, and secondary education.[9] It is important to emphasize that what matters for our 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 incovenience of having to secure drinking water isn't as onerous as it is for poorer households.

The value of public goods will not be measured merely by their consumption or investment value. An additional motivation for the provision of infrastructure items is employment for the rural poor. Programs such as Food for Work Program (FWP) and the Rural Works Program provide employment in local infrastructure-building projects to households suffering economic hardship, simultaneously in-

[9]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; 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.

suring households against economic shocks and building up the under-developed rural infrastructure.[10] Therefore, items will also be valued for the labor expenditure required for their production, complicating somewhat any simple designation of their class character.[11]

Finally, it must also be noted that projects will be valued by political actors for their ability to generate corruption rents, and to win elections through strategic targeting. Wade (1982), for example, documents the immense opportunities for corruption afforded through the construction and management of irrigation canals. Road construction is also well known to be subject to corruption in the contracting process (Deshingkar et al., 2005), though it will be less conducive to on-going rent capture as compared to irrigation canals. Handpumps are known to be an item particularly suitable for clientelist politics through their placement near the households of influential local actors, whereby they take on a quasi-private character (Nayak et al, 2002).

2.5 Congress and the Opposition

In the early years of independence, the Congress party had been a catch-all party, 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 and the promotion of the interests of the rural poor (Banerjee and Somanathan, 2007; Wilkinson, 2006). The party's 1971 campaign slogan, *garibi hatao*, was emblematic of this aggressive effort to cater to the rural poor. The Minimum Needs Program was launched 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 intervening years saw the emergence of a diverse array of opposition parties representing the myriad cleavages in Indian society; as a consequence, the social profile of the Congress party's base of support had undergone important changes by the time of the 1991 election. Caste-based parties would syphon off both marginalized social groups and the middling agrarian classes rapidly becoming ascendent in the countryside due to earlier land reforms; while Hindu nationalist parties increasingly won the support of the upper castes and the middle and upper classes (Heath, 1999). As a result, the Congress party lost much of the hegemony previously enjoyed, and often found itself reactively adapting its electoral strategy according to the coalitions constructed by local rivals. The national character of the party, however, endured, with support continuing to come from a diverse cross-section of the population

[10] Corruption in such projects is rife, with projects often driven more by their potential for corruption rents, and local contractors selected for their political connections (Deshingkar et al., 2005).

[11] Foster and Rosenzweig (2004) argue that canal building is pro-rich and road-building pro-poor, due to the higher labor demands for the latter in comparison to the former.

with an emphasis on the socially disadvantaged – though with 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 (Heath and Yadav, 1999).[12]

In contrast to Congress, the party's principle two challengers at the time of the 1991 election, the Janata Dal and BJP, had much clearer and more consistent class- and caste-characteristics in their bases of support. The Janata Dal[13] has long been known as the party of the rural land-owning classes, many of whom were empowered by land reforms after independence. While constituting a new rural elite, and therefore strongly supportive of government assistance for agriculture, they also tend to belong to the Other Backwards Castes (OBCs), and so have benefited from the extension of reservations under the Mandal Commission. The BJP's base of support generally consists of the higher castes, and the urban middle and upper classes. These groups have shown a stronger support for the extension of infrastructure and market reforms; due to their caste status, they have also been strenously opposed the Mandal ruling.

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 reasons independent of policy commitments are offered less rewared 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 to be found in electoral outcomes. RDs have proven useful in estimating electoral effects across a variety of outcomes: incumbency effects (Lee, 2001; Linden, 2004); drug trafficking and violence (Dell, 2012); and education expenditures (Miguel and Zaidi, 2003). However, RD strategies will fail to identify party effects away from the discontinuity, which will be important if we believe the effect to depend not only on the identity of the winning party, but also

[12]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.

[13]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.

the margin of victory. For this reason, our ability to to induce exogenous variation in the explanatory variable across a wide range of election margins, as we will show our instrument to do, allows us to capture party effects that other identification strategies fail to identify.

3.1 Modeling Electoral Effects

A basic electoral regression would be estimated as

$$y_i = \alpha + \beta \triangle Party_i + \varepsilon_i,$$

where β gives the average treatment effect (ATE) of a constituency's representation being switched from party B to party A 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 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 average treatment effect. Let us assume, however, that the effect of party also depends on the margin of victory:

$$y_i = \alpha + \beta_i \triangle Party_i + \varepsilon_i,$$

with $\beta_i = \beta(margin_i)$, so that the heterogeneity of the treatment effect is driven by its dependence on the margin of victory. In this case, RD estimation will yield LATEs of dubious relevance to the entire distribution of election margins. The average treatment effect, β, is given by

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

The use 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). The inability of the RD design to identify electoral effects away from the discontinuity, combined with the dependence of electoral effects on the margin of victory, implies that the RD LATEs will not be generalizable to the universe of election outcomes.

Given the issues introduced by estimation of victory effects at the 0 margin, identification of the

LATE requires an instrument for victory that is predictive for a broader range of victory margins. In other words, we would like an instrument, z_i, satisfying the normal conditions that $Cov(Vict_i, z_i) \neq 0$ and $E(z_i \varepsilon_i) = 0$, without the restriction that $margin_i \approx 0$. We will subsequently show that the assassination instrument employed in this paper satisfies these requirements.

3.2 Policy Convergence

As argued above, the apparent contradiction between the null results of the RD and the substantial results of the IV specification is likely due to the dependence of outcomes on both the identity of the winning party and the margin of victory. A substantial literature can be invoked as to why closely contested elections may result in identical outcomes regardless of the winning party, based on policy convergence to the preferences of the median voter. Conversely, where victory status is shifted along margins above the discontinuity, as in our IV design, non-identical policy outcomes may result precisely due to the lack of such policy convergence. In addition, a literature on the signaling function of elections suggests that parties may adapt their policies according to information gleaned through the margin of victory, so that even in the presence of pre-election policy convergence (divergence) post-election policy outcomes may nonetheless diverge (converge).

Beginning with Downs (1957), a key result in the political economy literature has been policy convergence of rival parties to the preferences of the median voter – what is termed the "Median Voter Theorem" – a result derived from Hotelling's (1929) spatial model of competition, and even alluded to there as an implication of the model. 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. With the relaxation of the assumption of politicians' caring only about victory – with parties or candidates modeled as having independent preferences over policy outcomes – come more realistic predictions of incomplete policy convergence (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.

Another literature potentially useful for understanding our results is that on the signalling function of elections.[14] Piketty (2000) models elections as including a signaling component, whereby voters

[14] We limit our discussion to those models directly relevant to our 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).

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.[15] 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 dicatorships 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.

3.3 Indian Politics and the Allocation of Public Goods

Two mechanisms are proposed by which the identity of the MP will influence the constituency-level allocation of public goods: (1) the influence of the MP within the central government; and (2) the influence of the MP with the local bureacracy and local political institutions. Before examining these further, it is first necessary to provide more detail on the role of the central government in the allocation of local public goods.

3.3.1 Center-State Relations

The 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

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

– the Concurrent List – are, among others, contracts, trade unions and labor disputes, forestry, economic and social planning, education, and electricity (thought this last has been largely taken over by states). 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.

Despite this partitioning of power, the central government has long exercised influence over even those domains ostensibly the sole prerogative of the states. 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). A succession of Five Year Plans, issue by the Planning Commission within the Centeral government, have established development agendas for State governments to pursue, with funds transferred to the states in pursuance of these objectives. 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 cenral government (Saxena, 2007).

An even more direct mechanism for exercising central control over local public goods has been through programs such as the Centrally Sponsored anti-poverty schemes and the Centrally Sponsored subsidy and infrastructure schemes (CSS), many of which bypass the State governments and are administered directly to districts from the Center (Saxena, 2007). Initiated in the early-1970s under then prime minister Indira Gandhi as a mechanism for bypassing state political machines and establishing a direct relationship with voters, such schemes have become a popular tool of clientelist politics and political corruption.

3.3.2 MPs and Public Goods

The first of the two mechanisms for MP influence over local public goods is through the policies of the central government. The central government exercises significant influence over public goods allocations through mechanisms such as the Centrally Sponsored Schemes, which in fact often explicitly mandate a role for MPs in determining beneficiaries (Wilkinson, 2006). An even more direct means of MP influence on local allocations is 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). However, this could have made only a small contribution to our 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.

In addition, politicians can shape policy outcomes through their influence over local bureacracies and village-level political institutions. While elected officials lack control over promotion or pay within the civil service, they are nonetheless able to wield influence 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 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." With respect to the effects of this influence on policy, the author argues that "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." 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.[16] Desihingkar et al. (2005) describe how Food For-Work projects in Andhra Pradesh, which are required to be selected through village councils, are in fact controlled largely by "politicians, engineers, or other influential persons." MPs and MLAs are also responsible for nominating members to the Block Development committees, adminstrative 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 administering local policy (Singh et al., 2003).

Through mechansisms such as these, elected officials play a substantial role in determining spending priorities. 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) argue that the influence of the Central government and individual MPs over local expenditures was increasing during the years of our 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

[16] Though the authority for these transfers generally rests with state-level politicians, it is likely that MPs will also have the ability to exercise influence through this channel, particularly where they belong to the same party as that controlling the state government.

services."

When a constituency is exogenously assigned representation by the Congress party, therefore, it is likely that the preferences of the MP will play a role in shaping the composition of spending. Insofar as Congress politicians have been selected at least in part due to their similar ideological preferences, or are allied with a similar electoral base, the realization of this MP influence in policy outcomes will reflect a common party preference.

3.3.3 Constraints of Indian Politics

Given the above discussion, it is unclear why an RD specification would be insufficient for causal identification of party effects. If the relevant mechanism is the influence of the MP within the central government and local administrative and political institutions, then the discontinuity generated at the win/loss threshold might be thought sufficient for causal identification. However, the discussion on the problems with RD identification in section 3.2 continue to hold with both of the mechanisms described above. For example, MPs may be less influential with local adminstrative and political institutions when they are perceived to have a tenuous claim to power, and one likely to be reversed at the next election.[17] Alternatively, MPs may simply be unwilling to promote their most preferred policy where a narrowly divided electorate recommends a policy appealing to the median voter for the sake of future electoral success. Similar considerations may also be operative with respect to the MP's influence within the central government: narrowly elected MPs may lack significant influence within the central government due to their perceived political weakness, or may choose not to exercise their influence due, once again, to the need to cater to the median voter.

4 Data

The unit of observation in our study is the parliamentary constituency. The data for Indian elections comes from the Election Commission of India[18] 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 politics 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

[17] It should be noted that this was a time of incumbency disadvantage, so that politicans winning by a narrow margin were 14-18 ppts less likely to be returned to power in the subsequent election (Linden, 2004).

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

the partitioning of districts, the rate of which has increased in recent years, the mis-matches become even more problematic in the second period of our study.

To solve this dilemna, we make use a finer disaggregation of the census data than has been used in previous studies, which generally resort to the district-level aggregation. Census data, however, is collected at the village-level, of which there are more than 500,000. We make use not of the village-level aggregation, but rather the sub-district aggregation, which is intermediate between the villages and districts. Though this introduces some error into the administrative-political matching, it 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 unrealiable, 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, our research design requires the matching of the 1991 and 2001 census data. For this, we 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 adminstrative and political data is achieved through the use of ArcGIS. Shapefiles for parliamentary constituencies are provided by the Electoral Commission of India; the 2001 census data includes shapefiles at the village, sub-district, and district levels. The sub-district boundaries are imperfectly nested within the parliamentary constituencies. To match them, therefore, we identify the centroid of each sub-district, and assign the sub-district to the parliamentary constituency within the boundaries of which its centroid falls. Figure 2 demonstrates how this was accomplished; each point is the centroid of a sub-district, and the boundaries 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.[19] For these, we employ a slightly different matching strategy. Again using ArcGIS, we 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.

[19]Because of the political sensitivies 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.

5 Results

5.1 Assassination Instrument

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

$$\triangle Party_i = \alpha + \beta Assn_i + \sigma_i + \varepsilon_i, \tag{1}$$

where $Assn_i$ is a dummy that takes the value of 1 where the constituency holds its elections after the assassination. As an alternative, we also specify the first stage as involving an interactive effect of the Party's prior absolute margin of victory:

$$\triangle Party_i = \alpha + \beta_1 Assn_i + \beta_2 (Assn_i \times AbsMarg_i) + \beta_3 AbsMarg_i + \sigma_i + \varepsilon_i. \tag{2}$$

The latter specification is justified by the likely dependence of the effect of the assassination on the prior competitiveness of the constituency. If we model the direct effect of the assassination to have been a constant increase in vote share for all constituencies, and if we assume 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 we show subsequently.

Because there will certainly be heterogeneity in potential oucomes, it will be necessary not only that the instrument satisfy the two conditions that $Cov(\triangle Party_i, z_i) \neq 0$ and $E(z_i \varepsilon_i) = 0$ (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 reported here, we 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 our 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). To clarify the issue,

we include in the model the urbanization rate and state fixed effects (which, in any case would have been included in our second stage regression). $\mathbf{X}_i$ are the unobservables of concern that had led us to use an instrumental variables strategy (e.g., candidate characteristics, and party platform), and $\mathbf{X_i'}$ a vector of other population characteristics that may be correlated with both the instrument and the second stage oucome. Now, we have

$$\triangle PG_i = \alpha + \rho \Delta Party_i + \psi PctUrban_i + \sigma_i + \varepsilon_i$$

and

$$\varepsilon_i = \gamma \mathbf{X} + \vartheta \mathbf{X}_i' + \nu_i.$$

Even if the instrument is uncorrelated with unobservables $\mathbf{X}_i$, there is still the possibility that it will be correlated with $\mathbf{X}_i'$. For the instrument to be valid, it will need to satisfy the independence assumption – i.e., that it be "as good as randomly assigned" (Angrist and Pischke, 2008) – meaning that

$$Cov(Assn_i, \mathbf{X_i'} \mid \sigma_\mathbf{i}, PctUrban_i) = 0.$$

Let $\mathbf{C}_i$ be a vector of variables summarizing constituency characteristics along the most relevant observable dimensions. To make the case that the conditional independence assumption has been satisfied, we will show that $Cov(Assn_i, \mathbf{C_i} \mid \sigma_\mathbf{i}, PctUrban_i) = 0$. Though this does not prove the independence of the instrument with respect to unobservables $\mathbf{X}_i'$, it provides a strong *prima facie* case that the condition is indeed satisfied.

Of the 449 constituencies in our sample, 206 voted before the assassination, and 243 after. Table 3 compares the constituencies across a variety of economic and social characteristics. Column (3) compare the means excluding all controls, column (4) includes state fixed effects, and (5) adds a control for the urbanization rate. When we don't include state fixed effects, there are substantial differences across the samples, which is unsurprising given that 10 of the 15 states voted entirely before or after the assassination.[20] The inclusion of state fixed effects, however, largely wipes out all 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

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

higher (significant at the 10% level), a slightly less steep topography (0.1), and a 5.8 ppts smaller 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, 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 the differences, and the magnitude of the correlations of these variables with public goods reported in Banerjee and Somanathan (2007), these differences are unlikely to have had any sizeable effect on our results, which we verify in alternative specifications including these variables as controls.

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

5.3 First Stage Regressions

Figure 3 shows the distribution in the change in Congress's election margin across the 1989 and 1991 elections, disaggregated by the assassination status. Constituencies voting after the assassination have a distribution shifted to the right relative to those voting before. In figure 4, we plot the Congress party's 1991 vote margin 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 assassination. 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.

Table 4 shows our 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. We include as covariates a cubic in the prior vote share, as well as dummies for victory in the prior election, SC/ST constituencies, riots, and constituencies in which the BJP and Janata Dal had previously had a seat-sharing arrangement. 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 – indicative of the increase in vote share having come at the expense of the party's principal opponent in the election. 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 winning identity of the winning party where the election had been previously 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 seen in figure 5, the change in the probability of victory occurs across a broad range of the prior-vote margin distribution.

The F-statistics in our 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).

Our 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, we 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 shown that the two samples are largely identical in their baseline characteristics, so that the independence assumption has arguably been satisfied. Figure 6 shows that the political effect of the assassination has entirely dissipated by the time of the 1996 election. Figure 7, which shows the relationship for all four elections between 1991 and 1999, indicates an effect of the assassination for only the 1991 election, with no evidence of enduring effects across the 1996, 1998, or 1999 elections. 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, but we take it as supportive of the contention that the effect was largely ephemeral, and had no differential long-term effects across pre- and post-assassination constuencies; and that, therefore, the exclusion restriction is satisfied.

5.4 IV Results

Having established the validity of our instrument, we now turn to the central result of our paper. To establish party preference, one would need to sort out the effects of majority status from party identity (Albouye, 2009) by estimating an equation of the form $y_i = \gamma Majority_i + \rho \triangle Party_i + \varepsilon_i$ in a two-party model. However, because our setting includes the results of only a single-election, majority status and party identity will be entirely collinear, thereby preventing the disentangling of these two effects. We justify our preferred interpretation through narrative reasoning, acknowleding the possibility that the results identify a generic ruling-party effect.

During the ten year span covered in our 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 is collected primarily during 1990 and 2000. Given these characteristics of the data, and given our instrument's validity for only the 1991 election, we adopt as our principal model a cross-sectional regression of 2001 public goods levels on political outcomes in the 1991 national election, controlling for the 1991 levels of public goods. Because the 1991 election determined political representation for only five of the ten years in question, our results should be taken as a lower bound on the influence of Congress representation on public goods allocations during this time.

Our primary specification is as follows:

$$PG_{2001,i} = \alpha + \rho \triangle Party_i + \gamma PG_{1991,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i. \tag{3}$$

The outcome of interest is the percentage of villages possessing the specificied public good in constituency i in 2001. The explanatory variable of interest, $\triangle Party_i$, is a dummy indicating whether the constituency was won by the Congress party in 1991. We control for the baseline level of the public goods, $PG_{1991,i}$, and a vector of constituency characteristics, $\mathbf{X_i}$, which includes the urbanization rate, the average pop-

ulation per village, and the number of villages. We allow for a flexible function of prior election margin, $f(Marg_{1989,i})$, specified as a cubic in the Congress party's 1989 vote margin; and a vector of other district characteristics, $\mathbf{E}_i$, including dummies for electoral seat-sharing arrangements, SC/ST-reserved constituencies, and the party's incumbency status. State fixed effects are included, σ_i; and the error terms, ε_i, are iid. The public goods included in our regression include those detailed in table 2: education, drinking water, health facilities, electrification, post and telegraph facilities, telephone availability, paved roads, and various types of irrigation.

Table 5 presents our main 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. There is little evidence in the OLS regression for Congress victory having important effects on public goods provision. Where Congress wins there is a slight decline in irrigation levels (3.0 ppts), and agricultural electrification (2.4 ppts).

Turning to the IV results, we immediately see a substantial difference in our 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 leads to a 14.7 ppts decline in agricultural electrification (5% level), and a 13.2 ppts decline in industrial electrification (10% level). Telephone access declines by 14.2 ppts (10% level). 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 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. 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 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-tenure system. In table 6 we re-estimate the IVs including each of these variables separately as controls. The results are robust to the inclusion of these variables. In addition, with the landlord control, we now see the tubewell coefficient being significant at the 10% level, and high schools having negative and significant coefficients.

The results obtained above come from an IV specification using model (2), in which the first-stage instruments are the assassination variable and its interaction with the absoute value of Congress's prior vote margin. We 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 7 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 coefficient is not conspicuously different than in the original regression, though the coefficients do not always have statistical significance. Insofar as there are differences in the results obtained across the two specifications, the explanation for these differences likely lies in the slightly different complier groups for the two instruments. Specifically, because 10 of the 15 states held all their elections on a single side of 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, we 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 our explanation.

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 given higher priority by the poor (drinking water and education), and away from those relatively more

favored by higher classes (agricultural and industrial electrification and telephones). The coefficients for handpump drinking water are interpretable not only as a pro-poor good, but also potentially as signaling 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). The increase in government canal irrigation also lends itself to multiple interpretations: as a good favored by the agricultural elite, a means of providing rural employment, and a mechanism for securing corruption rents. In general, these results are consistent with the Congress party's pro-poor orientation at the time, and possibly also with the party's effectiveness in delivering patronage.

5.4.1 IV Interpretations and Incumbency Status

One of the principal concerns in our identification strategy is that we may be capturing the LATE not for a general switching of the identity of the ruling party, but rather for a switching of party identity under the condition of the victory's being a fluke which is unlikely to be repeated. In this case, the IV results may be understood either as a consequence of the individual politician's aggressive effort to win a seat over which his hold is tenuous, or alternatively as the pure expression of his personal preferences unconstrained by hopes of future electoral success. Against this argument, we would note that, as seen in figure 6, the probability of victory in 1996 was basically identical across pre- and post-assassination constituencies conditional on the 1989 vote share. In results not shown, we 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 undertaken strategic policy interventions for the purpose of holding a seat otherwise unfavorable to the party.

As an alternative strategy for addressing this concern, we 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.

Table 8 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 incum-

bency 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 our 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).

We now turn to our regression results, shown in table 9. The findings largely confirm our 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 and incumbent Congress constituencies an insignificant 5.1 ppts decline. The result for handpumps is seen to be driven by an expansion in incumbent constitencies of 17.7 ppts (1% level), with non-incumbent constituencies showing a statistically insignificant 5.7 ppts increase. Another interesting finding is that the declines in electrification are 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. The lack of a change 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. 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, and may be interpretable as due to the same mechanism driving that result. 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.

Despite the differences, these results are basically consistent with what we found earlier, though the trade-offs 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 decline. Where the politician is newly elected, drinking water again increases, but now it is electrification that declines. Both sets of findings are consistent with the thesis that the party is substituting away from goods valued by more affluent voters, and towards those favored by the less affluent. The precise composition of these reallocations 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. The results do not support the hypothesis that the effects found through our IV are being driven by the tenuousness of the party's hold on power in constituencies won due to the assassination.

5.5 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. Since Lee (2001), RD designs have become increasingly popular in identifying the causal effects of electoral outcomes. However, as argued previously, this may be problematic in settings where there is incentive and ability to manipulate the outcome variable based on proximity to the threshold, or where proximity to the threshold is determined by the perceived effects of crossing it. To further explore the possibility that such phenomena may yield spurious nulls when RD identification strategies are employed, we now estimate the effects of Congress victory swapping out the IV with a regression discontinuity design.

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

$$PG_{2001,i} = \alpha + \beta Vict_i + \gamma PG_{1991,i} + g(Marg_{1991,i})Vict_i + g(Marg_{1991,i})(1 - Vict_i)$$

$$+\vartheta \mathbf{X}_i + \pi \mathbf{E_i} + f(VS_{1989,i}) + \sigma_i + \varepsilon_i. \quad (4)$$

$g(.)$ is a polynomial estimated separately for either side of the discontinuity, specificed 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.

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 10 shows the sample balance across the electoral threshold. In columns (1)-(2) we give the simple means in the 1991 levels of won and lost constituencies within the optimal bandwidth, as derived by the method proposed in 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 we see is that the percentage of the work force composed by miners is 2.9 ppts smaller in constituencies won by Congress, the index of rockyness of the land is 0.1 smaller (10% level), and the percentage of land under the landlord system before independence is 32.1

ppts smaller (10% level). In column (4) we use the full sample, including quartics estimated separately for each side of the discontinuity. Here we find no imbalance in the samples. The latter specification, using the full sample and quartic polynomials, we would argue to be the better of the two, given the somewhat small sample sizes in the vicinity of the discontinuity. Having shown sample balance in constituency characteristics, a regression discontinuity design will be valid (Imbens and Lemieux, 2008).

Figure 7 gives a preview of our 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 rural and industrial electrification, public goods for which our IV specification found large and significant results. The graphical representation of the RD, however, shows no sharp discontinuities in public goods availability at the electoral discontinuity.

Table 11 shows the results of our RD specification. 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 on a local linear regression within the optimal bandwidth. Drinking water access declines by 1.1 ppts (5% level) with Congress victory using the quartic. Paved roads decline by 10.1 ppts (marginally insignificant) with Congress victory using the local linear regression, and by 6.4 ppts (5% level) using the quartic. The local linear regression also yields a 5.7 ppts increase (5% level) in high schools, which is not found using the quartic. The quartic yields a 6.9 ppts increase (10% level) in adult literacy centers; using the local linear regression, the increase is 10.1 ppts, but is not statistically significant. Figure 10 depicts the four public goods found to be statistically significant in the RD design. The discontinuities found in table 14 are evident, with the exception of drinking water, for which the coefficient had in case been small.

5.6 Interpretation of RDs

For the purpose of comparison, Table 12 presents the RD results side-by-side with the OLS and IV . For completeness, we also include the results from RD regressions using the 1996, 1998, and 1999 elections as the explanatory variable. For all the RDs, we use the full sample with quartic polynomials. We have reduced the set of public goods to only those for which significant results are found in any of the specifications. The RDs clearly fail to capture the significant effects to be found with the IV specifications.

Our 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.[21] Ideally, we would instrument for this margin, and use its interaction with the $\triangle Party_i$ variable to uncover the dependence of the victory effect on the margin of victory. However, with one instrument and two explanatory variables, this is infeasible. We therefore posit the dependence of the victory effect on the election margin as simply the most plausible and intuitive mechanisms for the conflicting RD and IV results.

The insigificance of the RD coefficients, we have argued, is due to their capturing a local average treatment effect in the vicinity of the discontinuity, where fundamenally different electoral dynamics obtain. There is also the possibility, however, that the RD is not identified, due either to sorting around the discontinuity, or the confounding of instrumented and non-instrumented observations in the vicinity of the discontinuity. To address the possibility of non-identification due to the latter – whereby narrow bandwidths around the discontinuity include both pre- and post-assassination constituencies, and therefore the error terms are possibly non-continuous[22] – we have estimated RDs using the 1996, 1998, and 1999 elections, shown in table 12, which similarly yield null results. The possibility of sorting around the discontinuity has been discussed in 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. In table 10, we showed that the RD was essentially balanced across the discontinuity; however, the statistical insigificance of the differences across the discontinuity obscures the magnitude of the difference in incumbency status, with incumbents being approximately 25 ppts more likely to win closely contested elections. Figure 9 plots the relationship between the 1991 vote share and incumbency status. As we can see, incumbents are more likely to win closely contested elections, though due to the smallness of the sample size we cannot statistically distinguish the difference. For this reason, the RD coefficients cannot technically be regarded as identified. However, we would note that the direction of bias introduced by this sorting would likely be an amplification of the party effect. That this isn't found is indicative of the imposition of some sort of post-election constraints on politicians winning by narrow margins.

In support of the latter interpretation, we would also note that the incumbency disadvantage identified by Linden (2004) using an RD design – with incumbents 14-18 ppts less likely to win re-election – is not

[21] Our preferred model would have a null party effect below some low threshold, perhaps a margin of 5 ppts, and a constant party effect above that. This we derive from Linden's (2004) model of the incumbency disadvantage, where there is a sharp decline in the probability of future victory at the win/loss threshold, with the probability then returning to trend at a margin of approximately 5 ppts.

[22] Though we found no discontinuities in our balance table, there may be discontinuities in the unobserved policy commitments.

present for constituencies won due to the assassination. In table 13, we estimate the effect of incumbency on the probability of winning the subsequent election using OLS, IV, and RD identification. In columns (1)-(2) we estimate 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. Columns (3)-(4) include the full sample of constituencies; Congress incumbents enjoy an advantage of 19.2 ppts. In columns (5)-(6) we instrument for incumbency status using the assassination variable; the incumbency advantage is of similar magnitude, 16.7 ppts, though is insignificant due to the increase in standard errors. Finally, in columns (7)-(8), we use an RD design to estimate the incumbency advantage; as in Linden (2004), we find a *disadvantage* to incumbent parties seeking re-election. This is powerful evidence for our thesis that elections decided by narrow margins yield LATEs not generalizable to the general population. Moreover, these incumbency disadvantages are being found despite the fact that it is the more powerful candidate (i.e., the incumbent) that wins the narrowly contested election.

In sum, there seems to be something in the nature of closely contested elections that yields RD LATEs that are small and statistically insignificant. The contrast of the significant IV results for public goods and insignificant RD results is mirrored by the differences in the incumbency advantage identified by the two identification strategies: whereas the IV shows an incumbency advantage relatively similar to the OLS, the RD yields results indicating an incumbency disadvantage. The likeliest explanation reconciling the two results – the RD nulls for public goods and incumbency disadvantage – is that winners of narrowly contested elections face significant constraints in their ability to influence policy, which in turn translates to a reduced likelihood of winning future elections. As winners of close elections tend to be incumbents, this may be due to the politician's losing influence within his party, perhaps due to his perceived weakness and concomintant lower likelihood of winning future elections.

5.6.1 RDs and Swing Constituencies

A final possibility for the interpretation of the null 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 political science literature, however; depending on the parameters of the model, "core" targeting may occur instead, with the party choosing to reward its most ardent supporters.[23]

[23] Understanding the conditions under "swing" or "core" targeting will prevail is an issue of central importance in the political science literature. Insofar as politicians care primarily about winning, policy platforms will tend to converge on the preferred allocations of the median voter (Downs, 1957). However, once the preferences of a "core" constituency enter into the party's objective function, the party will be seek to tailor its platform suit the preferences of this constituency, even at the expense of a decline in the probability of victory (assuming the probability does not fall to zero). Vaishnav and

Table 14 shows the results of OLS regressions using dummy variables to capture allocations towards "swing" and "core" constituencies. "Swing" constituencies are defined as constituencies 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 of 20 points or more 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: telephone coverage is seen to be significant, with an increase of 4.5 ppts (1% level). "Core"-targeting, in contrast, does seem to occur. Where "core" constituencies are defined as those in which the party wins by a margin of 20 or greater, 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, with evidence for a pro-poor orientation in the composition of goods provided. Constituencies exogenously assigned representation by the Congress party experience a dramatic improvement in drinking water access (increases in tap and handpump water against a decline in well water), government irrigation canals, and education facilities, but a decline in electrification, telephone coverage, and cultivated land. When we disaggregate by the incumbency status of the exogenously assigned representative, we find that non-incumbents are associated with a decline in electrification, and incumbents with a decline in paved roads, telephones, and local health centers. Both samples are associated with an increase in tap and handpump drinking water and in government irrigation; and, in addition, incumbents are associated with an increase in primary schools and non-incumbents with a decline in middle schools. 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 latter, and declines in spending for those items given higher priority by more affluent

Sircar (2011) give a useful overview of the issues involved, and present a model in which the relative weight given "swing" versus "core" constituencies will depend on the competitiveness of the overall electoral environment. They show that in state elections in Tamil Nadu, narrowly decided elections have led to increased education spending in closely contested constituencies, whereas elections won by a large number of seats have led to increased education spending in constituencies giving a larger share of the vote to the ruling party.

groups.

Where the identification strategy is shifted to a regression discontinuity design, little effect is found of Congress representation. We suggest two possible mechanisms driving this: pre-election policy convergence in closely contested constituencies, and post-election adaptation of policy based on the margin of victory. Our preferred explanation is that winners of closely contested elections face significant constraints in their ability to infuence policy, likely due to their loss of influence within the party, which is reflected in a reduced probability of winning the subsequent election. The stark contrast between the RD nulls and the significant coefficients of the IV, coupled with the evidence for sorting around the threshold and differential advantages to incumbency, makes clear the necessity for exercising caution in the interpretation of RD results. Electoral settings may be far less amenable than previously understood to RD analysis, given the incentives of political actors to target "swing" constituencies, policy convergence where elections are closely contested, and the constraints imposed on politicians when their power is regarded as tenuous.

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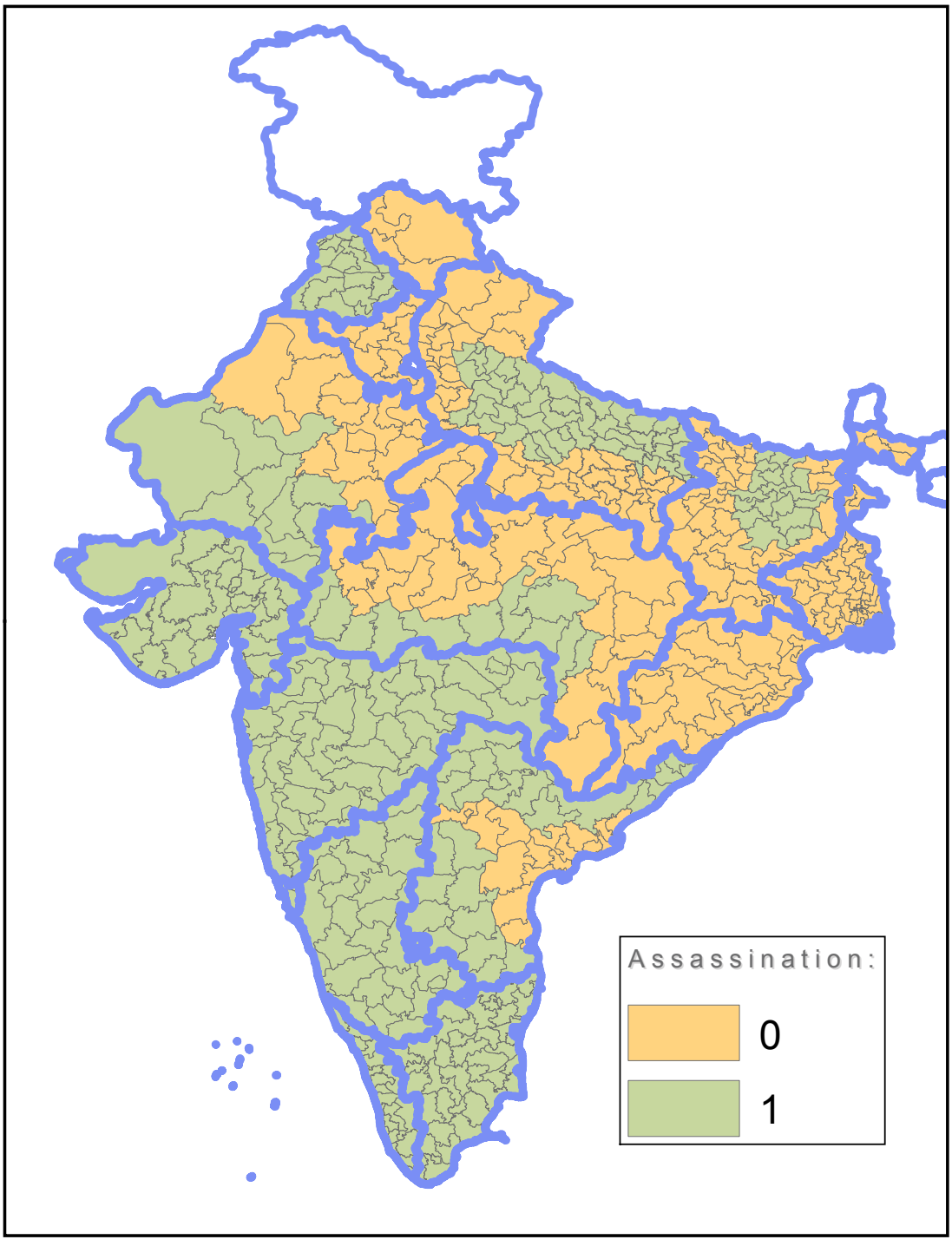

Figure 1: Distribution of Constituencies

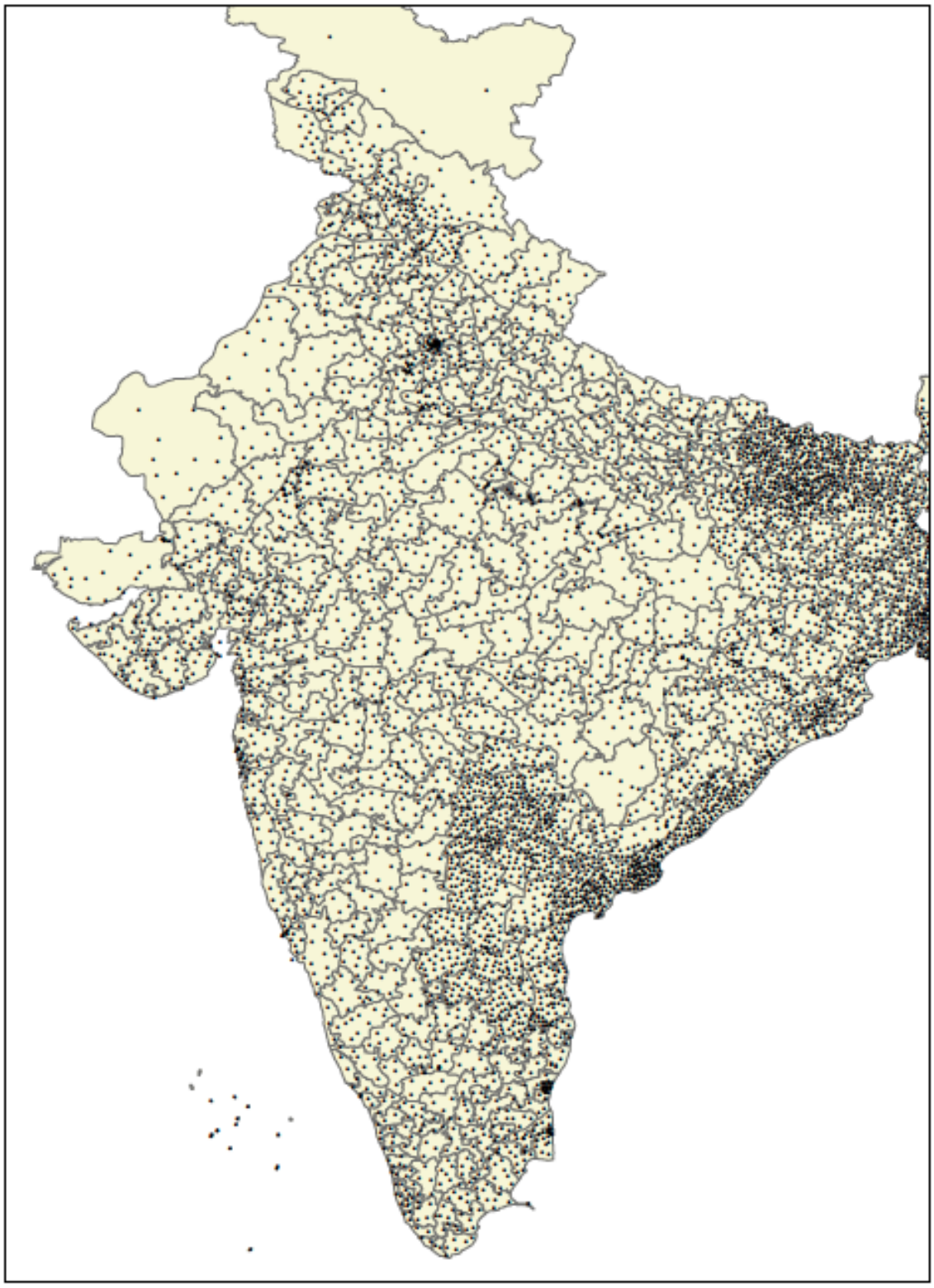

Figure 2: Sub-Districts and Electoral Constituencies

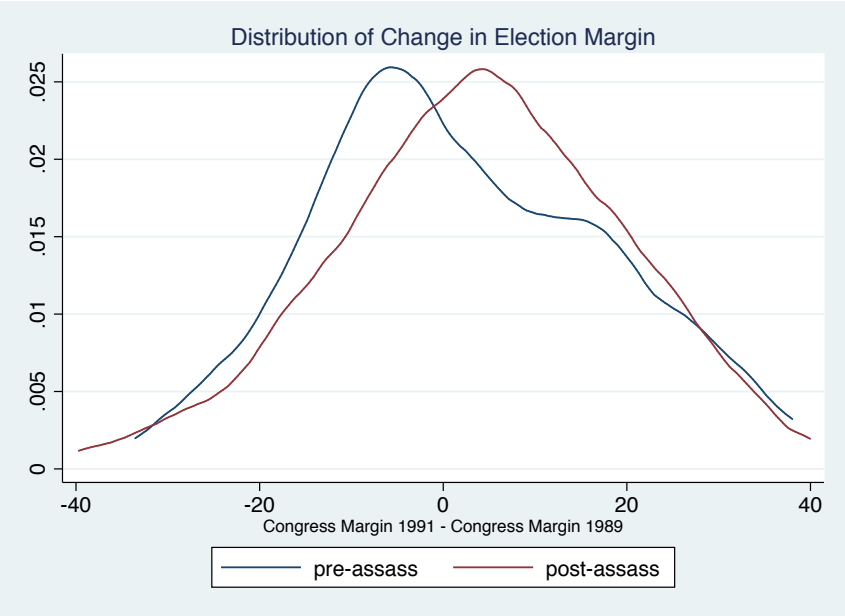

Figure 3: Distribution of △ Vote Margin

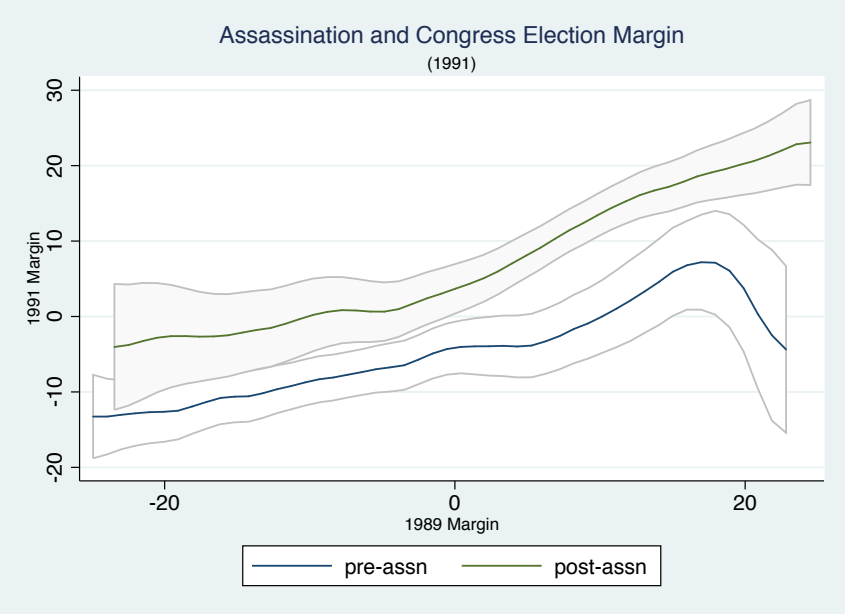

Figure 4: Assassination and 1991Vote Margin

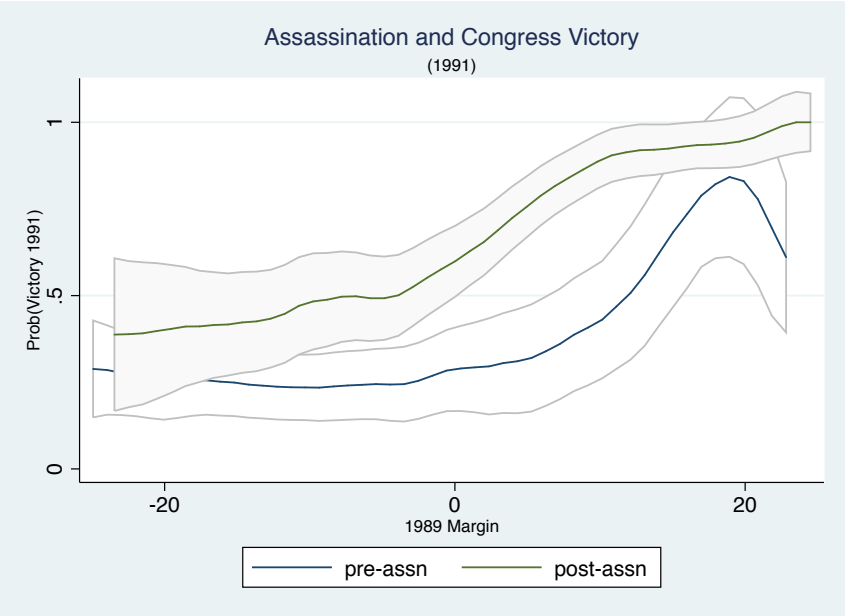

Figure 5: Assassination and 1991 Probability of Victory

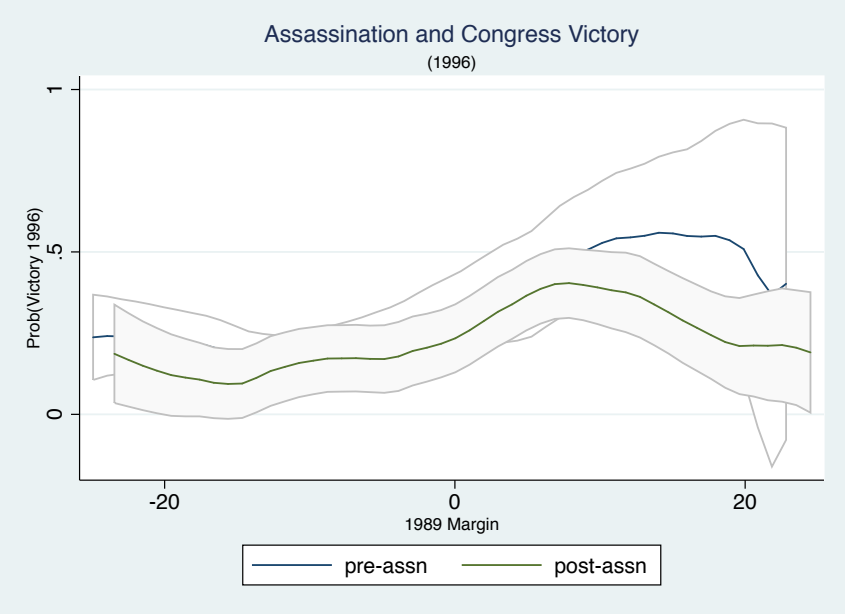

Figure 6: Assassination and 1996 Probability of Victory

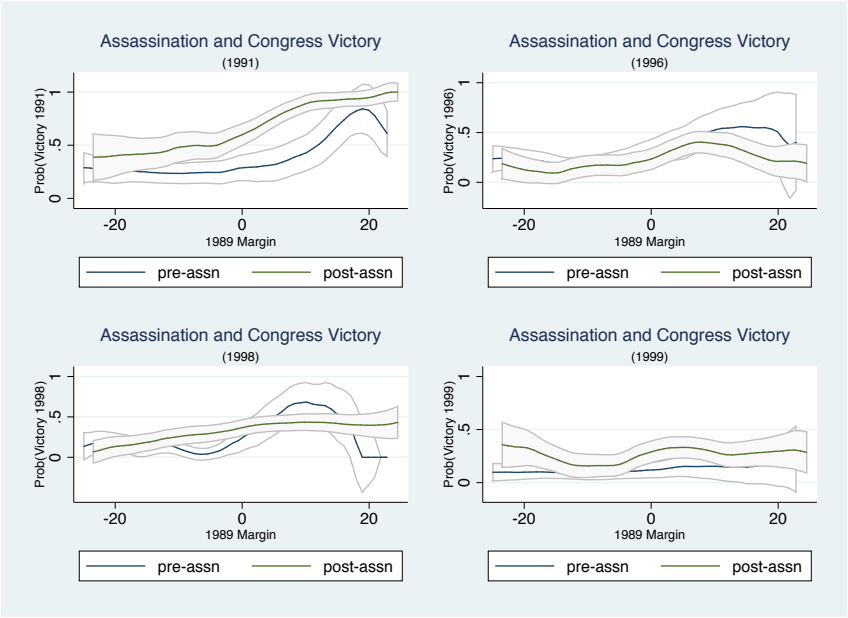

Figure 7: Assassination and 1991-1999 Probability of Victory

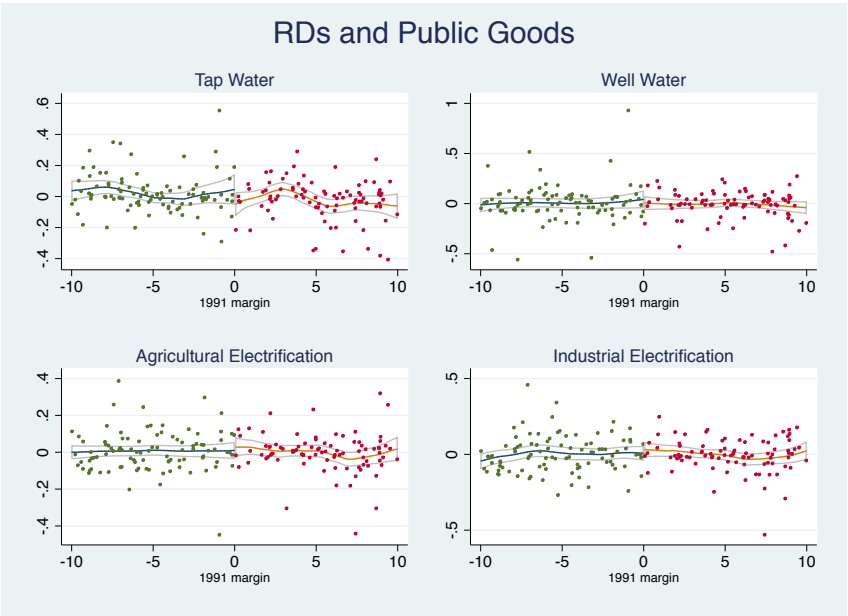

Figure 7: RDs and Significant IV Public Goods

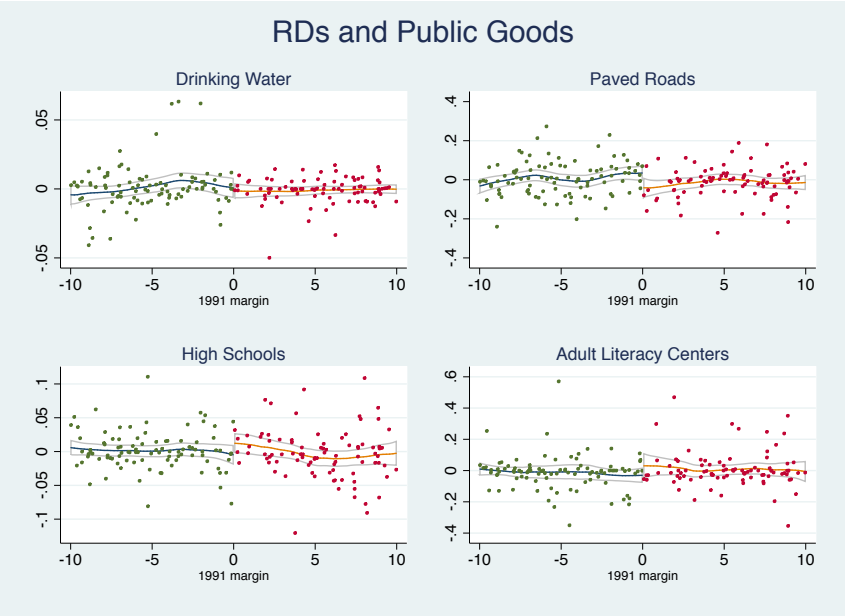

Figure 8: RDs and Affected Public Goods

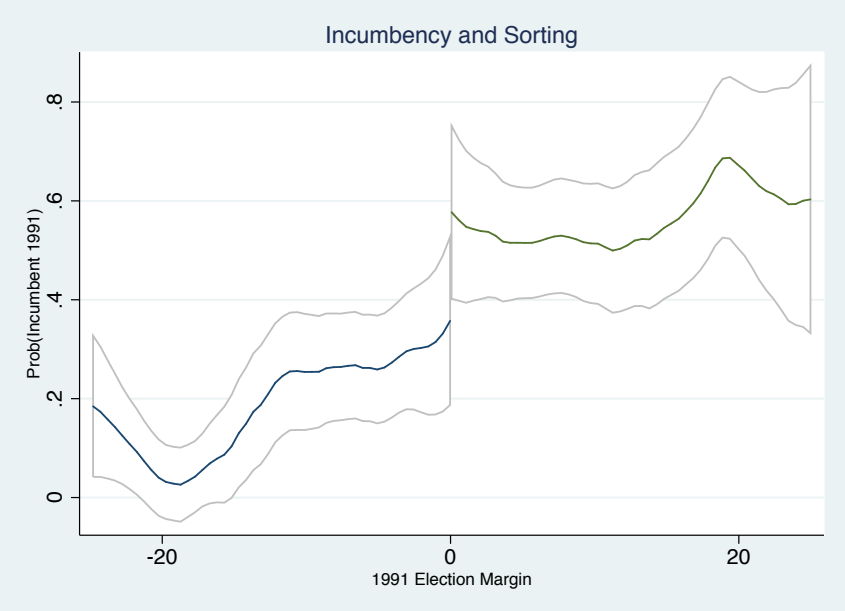

Figure 9: Sorting by Incumbency Status

Table 1: Vote Shares and Assassination

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Victories										
	Victories		Percentage		Runnerup Party					
Victorious Party	total	post-assn	pre	post	INC	BJP	JD	LF	REG	ALL
INC	219	163	0.27	0.65	0.00	0.39	0.19	0.10	0.18	0.86
BJP	99	49	0.24	0.23	0.67	0.00	0.18	0.02	0.00	0.87
JD	58	17	0.31	0.12	0.40	0.47	0.00	0.00	0.00	0.86
LF	47	9	0.76	0.24	0.89	0.09	0.00	0.00	0.00	0.98
REGIONAL	13	3	0.71	0.07	1.00	0.00	0.00	0.00	0.00	1.00
Panel B: Runnerup										
	Runnerup		Percentage		Victorious Party					
Runnerup Party	total	post-assn	pre	post	INC	BJP	JD	LF	REG	ALL
INC	160	60	0.47	0.24	0.00	0.41	0.14	0.26	0.08	0.90
BJP	125	71	0.26	0.33	0.68	0.00	0.22	0.03	0.00	0.93
JD	62	31	0.23	0.22	0.68	0.29	0.00	0.00	0.00	0.97
LF	23	19	0.08	0.50	0.91	0.09	0.00	0.00	0.00	1.00
REGIONAL	40	37	0.21	0.90	1.00	0.00	0.00	0.00	0.00	1.00

Notes: Only constituencies in which the indicated party grouping competed are included in the statistics.

Table 2: 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 percentage of village possessing the indicated good.
Sample includes only those 449 constituencies included in our regressions.

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	0.244	0.173	-0.072***	-0.058**	-0.058**
			(0.025)	(0.028)	(0.029)
state FEs				yes	yes
urbanization					yes

Notes: Differences estimated from a regression of the indicated variable on the assassination dummy.

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		yes		yes		yes

Notes: Covariates include dummies for SC/ST constituencies, constituencies in which the BJP and Janata Dal had a vote-sharing arrangement, and the incumbency status of the Congress politician. 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 Public Goods

public good	1991 level (1)	2001 level (2)	Congress Victory OLS (3)	Congress Victory IV (4)	public good	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
PC_pct_post	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)					
PC_s_pct_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: Covariates include the urbanization rate, average village population, and number of villages. Controls are also included for incumbency status of the Congress politician, 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 are included in all specifications.

Table 6: Congress Victory and Public Goods, with Controls

	IV					IV			
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
drinking water					**health facilities**				
any	-0.002	0.001	-0.001	-0.003	health centers	-0.005	-0.008	-0.005	-0.004
	(0.009)	(0.009)	(0.009)	(0.008)		(0.011)	(0.012)	(0.011)	(0.011)
tap	0.198**	0.179**	0.210***	0.165**	primary health centers	0.012	0.013	0.011	0.014
	(0.080)	(0.085)	(0.081)	(0.074)		(0.016)	(0.018)	(0.016)	(0.016)
well	-0.217**	-0.212**	-0.219**	-0.217**	health subcenter	-0.056	-0.059	-0.060	-0.059
	(0.095)	(0.105)	(0.095)	(0.093)		(0.047)	(0.052)	(0.047)	(0.046)
hand pump	0.128**	0.146**	0.124**	0.121**	maternity-child	-0.027	-0.037	-0.027	-0.026
	(0.063)	(0.070)	(0.062)	(0.061)		(0.029)	(0.032)	(0.029)	(0.028)
tubewell	-0.124	-0.128	-0.115	-0.146*	hospital	0.009	0.010	0.008	0.012
	(0.085)	(0.093)	(0.084)	(0.084)		(0.033)	(0.036)	(0.033)	(0.032)
river	0.017	0.014	0.016	0.017	dispensary	-0.024	-0.017	-0.022	-0.021
	(0.033)	(0.036)	(0.033)	(0.032)		(0.027)	(0.030)	(0.027)	(0.027)
electrification					**irrigation**				
any	0.018	0.042	0.022	0.015	any	0.040	0.079	0.040	0.040
	(0.039)	(0.043)	(0.039)	(0.038)		(0.054)	(0.061)	(0.054)	(0.053)
domestic	0.017	0.041	0.021	0.009	government canals	0.088*	0.123**	0.097*	0.084*
	(0.042)	(0.047)	(0.042)	(0.041)		(0.052)	(0.059)	(0.052)	(0.051)
agricultural	-0.147**	-0.131**	-0.147**	-0.142**	private canals	-0.003	-0.001	-0.002	-0.003
	(0.060)	(0.065)	(0.060)	(0.059)		(0.005)	(0.006)	(0.005)	(0.005)
industrial	-0.132*	-0.114	-0.126*	-0.153**	tank	0.012	0.013	0.012	0.021
	(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	-0.011
post office	-0.026	-0.031	-0.027	-0.035		(0.036)	(0.039)	(0.036)	(0.035)
	(0.047)	(0.051)	(0.047)	(0.046)	tubewell (non-elec)	0.013	0.031	0.012	0.016
telegraph	-0.001	0.004	-0.000	-0.000		(0.030)	(0.033)	(0.030)	(0.029)
	(0.014)	(0.015)	(0.013)	(0.013)	well (electrified)	0.004	0.002	0.004	0.003
phones	-0.142*	-0.132	-0.142*	-0.154**		(0.027)	(0.030)	(0.027)	(0.027)
	(0.075)	(0.082)	(0.075)	(0.074)	well (non-elec)	0.014	0.014	0.014	0.015
paved roads	-0.047	-0.052	-0.043	-0.054		(0.015)	(0.017)	(0.015)	(0.015)
	(0.043)	(0.047)	(0.042)	(0.042)	uncultivated	0.058*	0.061*	0.054*	0.057*
education						(0.033)	(0.037)	(0.033)	(0.032)
any	0.041*	0.047*	0.040	0.040					
	(0.025)	(0.028)	(0.025)	(0.024)					
primary	0.029	0.036	0.028	0.027					
	(0.024)	(0.027)	(0.024)	(0.024)					
middle	-0.038	-0.037	-0.038	-0.044					
	(0.027)	(0.030)	(0.027)	(0.027)					
high	-0.037	-0.037	-0.035	-0.042*					
	(0.024)	(0.027)	(0.024)	(0.024)					
adult literacy	0.008	0.020	0.005	0.009					
	(0.061)	(0.067)	(0.061)	(0.060)					
brahmins		yes					yes		
caste/rel fragm			yes					yes	
zamindar				yes					yes

Notes: Covariates include the urbanization rate, average village population, and number of villages; and 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 are included in all specifications.

Table 7: Congress Victory and Public Goods: Alternative First-Stage

	OLS	IV			OLS	IV		
		Model (2) full sample	Model (1) full sample	Model (2) 5 states		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: 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 are included in all specifications.

Table 8: First Stage: Assassination, Electoral Outcomes, and Incumbency

	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		yes		yes

Notes: Covariates include dummies for SC/ST constituencies, vote-sharing arrangements between the BJP and Janata Dal in 1989, and the incumbency status of the Congress politician; and a cubic in the Congress party's 1989 vote margin.

Table 9: Congress Victory and Public Goods: Incumbency

		IV			IV	
	all	non-incumb	incumbent	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: 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 are included in all specifications.

Table 10: 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	0.159	0.215	-0.321*	0.029
			(0.173)	(0.078)
state FEs			yes	yes
urbanization				yes

Notes: Optimal bandwidths are calculated for each item independently.

Table 11: Regression Discontinuity: Congress Victory and Public Goods

	optimal bw lost (1)	optimal bw won (2)	optimal bw linear (3)	full sample quartic (4)		optimal bw lost (5)	optimal bw won (6)	optimal bw linear (7)	full sample quartic (8)
drinking water					**health facilities**				
any	0.001	-0.000	0.026	-0.011**	health center	0.020	0.026	-0.026	-0.005
			(0.026)	(0.006)				(0.021)	(0.007)
tap	0.184	0.212	-0.162	-0.019	primary health center	0.035	0.066	-0.010	0.009
			(0.104)	(0.047)				(0.057)	(0.011)
well	0.000	-0.047	-0.008	-0.029	health subcenter	0.175	0.122	0.028	-0.026
			(0.122)	(0.058)				(0.070)	(0.030)
hand pump	0.266	0.229	0.041	0.063	maternity-child	0.045	0.035	-0.010	-0.018
			(0.065)	(0.039)				(0.071)	(0.019)
tubewell	0.003	0.080	-0.026	0.008	hospital	0.056	0.114	-0.031	0.016
			(0.083)	(0.055)				(0.047)	(0.022)
river	0.022	0.042	-0.036	-0.009	dispensary	0.001	-0.009	0.018	-0.010
			(0.046)	(0.022)				(0.059)	(0.018)
electrification					**irrigation**				
any	0.085	0.040	0.008	-0.008	any	0.123	0.100	0.034	-0.002
			(0.031)	(0.025)				(0.052)	(0.034)
domestic	0.101	0.081	-0.008	0.001	government canal	0.051	0.040	-0.006	0.015
			(0.029)	(0.028)				(0.069)	(0.030)
agricultural	0.145	0.105	0.065	0.030	private canal	-0.000	0.006	-0.044	-0.001
			(0.066)	(0.037)				(0.000)	(0.003)
industrial	0.223	0.214	0.000	0.054	tank	0.021	-0.004	-0.280	-0.016
			(0.054)	(0.043)				(0.000)	(0.013)
comm and transp					tubewell (electrified)	0.023	0.009	0.020	0.014
post office	0.005	0.022	0.045	0.006				(0.028)	(0.024)
			(0.034)	(0.028)	tubewell (non-elec)	0.001	0.011	0.020	0.009
telegraph	0.020	0.027	0.005	0.006				(0.035)	(0.020)
			(0.008)	(0.009)	well (electrified)	0.018	0.032	0.002	0.014
telephone	0.401	0.381	-0.004	0.050				(0.036)	(0.018)
			(0.104)	(0.046)	well (non-elec)	-0.007	-0.001	-0.047	-0.007
paved roads	0.173	0.072	-0.101	-0.064**				(0.046)	(0.009)
			(0.069)	(0.028)	uncultivated	0.003	-0.010	0.007	-0.014
education								(0.038)	(0.022)
any	0.041	0.029	-0.008	-0.017					
			(0.032)	(0.015)					
primary	0.060	0.045	-0.008	-0.020					
			(0.039)	(0.015)					
middle	0.096	0.090	-0.063	-0.015					
			(0.041)	(0.018)					
high	0.039	0.052	0.057**	0.007					
			(0.023)	(0.015)					
adult literacy center	0.068	0.113	0.101	0.069*					
			(0.166)	(0.039)					

Notes: 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. State fixed effects are included in all specifications. Optimal bandwidths are estimated using Imbens and Kalyanaraman (2009).

Table 12: Congress Victory and Public Goods: All Identification Strategies

		1991 election		RDs and later elections		
	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: Covariates include the urbanization rate, average village populations, and number of villages. Controls are also included for incumbency status, vote-sharing arrangements in 1989, and SC/ST constituencies. State fixed effects are included in all specifications.

Table 13: 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		yes		yes		yes		yes

Notes: Covariates include dummies for SC/ST constituencies, constituencies in which the BJP and Janata Dal had a vote-sharing arrangement, and the incumbency status of the Congress politician from the 1989 election.

Table 14: Swing and Core Constituencies

	victory (1)	swing (2)	core (> 20) (3)	swing (4)	core (won all) (5)	victory (6)	swing (7)	core (> 20) (8)	swing (9)	core (won all) (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: 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 are included in all specifications.