Party System Institutionalization and Economic Voting: Evidence from India

Francesca R. Jensenius and Pavithra Suryanarayan *

Short Title: Party System Institutionalization and Economic Voting

Abstract

It is well established that a country's institutional features can weaken economic voting because voters find it hard to attribute performance to specific parties. We argue that local-level party system institutionalization similarly moderates the link between the economy and vote choice. We focus on one manifestation of party system institutionalization: the strength of party-candidate linkages in elections, operationalized by manually tracing the rerunning patterns of some 80,000 candidates in Indian state elections between 1986–2007. Using rerunning patterns to measure party-candidate linkages and rainfall data to measure the state of the economy, we show that voters were more likely to reward incumbent parties for economic performance when parties and candidates were aligned in consecutive elections. We address concerns of endogeneity in rerunning patterns by showing that the results are robust to alternate measures of local-level party system institutionalization. They are also robust to alternative measures of the state of the economy, and using individual-level survey data.

Replication files are available in the JOP Data Archive on Dataverse: `https://dataverse.harvard.edu/dataverse/jop`. The empirical data has been successfully replicated by the JOP replication analyst.

Keywords: Economic voting, India, South Asia, Parties, Party System Institutionalization

*Francesca R. Jensenius is at the University of Oslo, email: `f.r.jensenius@stv.uio.no`. Pavithra Suryanarayan is at Johns Hopkins University, email: `psuryan1@jhu.edu`

An extensive literature in advanced industrial countries has emphasized the role of economic evaluation as a key factor in shaping how voters reward or punish incumbents (Key and Cummings, 1966; Lewis-Beck, 1990; Tufte, 1980; Kramer, 1983; Anderson, 2007). Studies of economic voting in developing countries provide more contradictory evidence for the phenomenon (Remmer, 1991; Pacek and Radcliff, 1995; Tucker, 2002; Domínguez and McCann, 1998; Ravishankar, 2009). This is surprising, given that the stakes of a weak economy are likely greater in a developing context with greater numbers of poor voters.

To explain discrepancies in studies of economic voting, research has focused on structural and institutional factors that moderate the relationship between the state of the economy and the vote (Powell Jr and Whitten, 1993; Whitten and Palmer, 1999; Anderson, 2000; Duch, 2001; Duch and Stevenson, 2008; Kayser, 2014).[1] The key insight in these studies is that economic voting relies on clarity about who is to be held responsible for performance in office. For instance, when institutional features diffuse responsibility for policy outcomes, the incumbents are more likely to be insulated from both positive and negative economic voting because voters have a hard time correctly attributing responsibility for government performance. Institutional features such as proportional representation, coalition governments, or weak intra-party cohesion in the legislature can therefore weaken economic voting.

An important, but under-studied, factor that enables voters to hold incumbents accountable and gain information about the political environment is *party system institutionalization*. Following Chhibber and Kollman (2009, p. 4), we define a party system as an enduring pattern of electoral competition between parties for public office. Party systems are formed on the basis of candidates' and voters' incentives to coordinate around common party labels. Where party systems are institutionalized we observe stable patterns of party competition, strong party–voter linkages, clear ideological positions, and well-organized (or institutionalized) individual parties (see Mainwaring and Scully, 1995; Mainwaring, 1999).

[1] A number of studies also focus on individual-level variation in economic voting. For instance, voters tend to evaluate the economy in a way that is consistent with their prior political beliefs. See Anderson (2007) for an excellent review of these studies.

We focus on an important manifestation of party system institutionalization that is key to how voters assess a party's performance: the strength of *party-candidate linkages*, operationalized as the extent to which parties and candidates maintain their electoral alliances from one election to the next.[2] Where party-candidate linkages are weak, parties often do not field the same candidates from one election to the next, and candidates who are not renominated may rerun under a different party label. The strength of party-candidate linkages, then, has important implications for vote choice: weak party-candidate linkages mean that party brands provide little heuristic value to help voters evaluate performance. Voters may also be unsure about whether to reward or punish the party or the candidate for the economy. As a result, weak linkages should result in weaker patterns of economic voting.

The idea that stable party-candidate linkages are an important dimension of a well-functioning party system is fairly intuitive. Yet, as noted by McElroy (2003, p. 2), this phenomenon "has received surprisingly little attention in the canon of political parties." This omission is not so surprising given that studies of parties and elections typically focus on Northern Europe and the United States, regions where candidates typically run for re-election, and generally for the same party.[3] However, research from a wide range of countries—including Brazil, Ecuador, Mexico, Russia, Poland, France, Italy, and Canada—shows that weak party-candidate linkages are, in fact, a relatively common phenomenon in both developing and developed democracies (Pereira and Renno, 2003; Grose and Yoshinaka, 2003; Kreuzer and Pettai, 2003; Herron, 2002; Desposato, 2006; Heller and Mershon, 2005; Shabad and Slomczynski, 2004; Zielinski, Slomczynski and Shabad, 2005; Kerevel, 2014; Snagovsky and Kerby, 2018; O'Brien and Shomer, 2013).

We examine party-candidate linkages and economic voting in the world's largest democracy—India. Elections in the Indian states are viewed as unusually chaotic with high anti-incumbency voting, many political parties competing, and little evidence of economic voting (Linden,

[2]There are other manifestations of party-candidate linkages, including floor-crossing during legislative sessions and expressed ideological or emotional ties between parties and candidates.

[3]Party switching has been uncommon in the United States in recent times, with only 20 members of Congress changing parties between 1947 and 1994 (Nokken and Poole, 2004).

2004; Uppal, 2009; Ravishankar, 2009; Suri, 2009; Verma, 2012). This is a good context to study economic voting because it is a large and diverse developing country where it is possible to access high-quality data at a disaggregated level. It is also considered a particularly hard case, as voters are generally thought to cast their votes on the basis of ethnic loyalties and patronage networks, rather than policy promises or actual performance in office (Chandra, 2004; Piliavsky, 2014).[4]

To measure party-candidate linkages, we draw on the database of electoral returns in state assembly elections developed by Jensenius (2017), which includes data on 3,700 constituencies (electoral districts) across 23 Indian states. We manually track the rerunning patterns of the top five candidates in each of these constituencies across consecutive elections held from 1986 to 2007. Our resultant dataset includes information on approximately 80,000 candidates, who were coded as rerunning or not, and as rerunning under the same party label or under a different one.

Using multilevel regression models, we examine the relationship between rerunning patterns and economic voting. We use several measures to capture the state of the economy. First, using district-level rainfall data as a proxy for the local-level state of the economy, we show that places where incumbent parties fielded the incumbent politician exhibited clear patterns of economic voting, while places where candidates did not rerun or where candidates switched parties did not. We then show that these results hold when we use data on nighttime light and change in public sector employment as alternate measures of the state of the economy. Finally, to alleviate concerns about ecological fallacy in our findings we turn to individual-level survey data from the Indian National Election Study (NES) conducted in the aftermath of the 2004 parliamentary elections. In the survey analysis, we augment our measure of rainfall deviation as a proxy for the economy with respondents' view on their personal economy and their views on the national economy. Across all three measures, we show that in constituencies where the incumbent ran for the same party, respondents were

[4]Discussions about how true this is are ongoing in the Indian politics literature. See, for example, Chhibber and Verma (2018) and Bussell (2019).

more likely to vote for the incumbent party if the economy was (or was perceived as) doing well.

Much of the previous literature on candidate switching has focused on candidates opportunistically changing parties to improve their electoral fortunes (Desposato, 2006; Heller and Mershon, 2005; Thames, 2007; Kerevel, 2014). In a similar vein, it is possible that opportunistic candidates seek new parties in order to avoid individual accountability for the economy, or parties strategically seek to avoid being sanctioned for a weak economy by retiring an incumbent politician. It is also possible that parties are *less* constrained by candidates when the economy is doing well or that candidates seek out new parties when they have more confidence they can carry an election in a good economic year. All these scenarios raise concerns about endogeneity in the patterns we observe.

We use three alternative measures of the strength of local-level party system institutionalization to address these endogeneity concerns: a weighted average of electoral party-switching among the top five candidates in the constituency in the same election, a weighted average of electoral party-switching among the top five candidates in the constituency in the previous election, and a qualitatively coded measure of the internal organization of the incumbent party based on a dataset developed by Chhibber, Jensenius and Suryanarayan (2014). These measures are highly correlated with our main measure of party-candidate linkages, but are less prone to the endogeneity concerns related to incumbent parties or politicians changing alliances in response to short-term economic factors. Our findings remain robust to these alternative measures of the strength of local party system institutionalization. We also probe the relationship between our main measure of the state of the economy, lagged rainfall deviation, and rerunning patterns, and find that bad rainfall does not predict incumbents switching parties. Our qualitatively coded measure of the internal organization of parties, however, is a strong predictor of an incumbent's likelihood of switching.

Our paper's most significant contribution is providing micro-level evidence of how party system institutionalization may affect voting behavior, and in particular economic voting,

in the developing world. There are few studies of economic voting in the developing world, and many of them are based on highly aggregated data. By showing how party system institutionalization moderates economic voting, we contribute one explanation for why we see less economic voting in less-developed democracies. This can help to reconcile some of the seemingly contradictory findings in the literature on economic voting.[5] Our measure also improves on other measures of institutionalization such as electoral volatility, effective number of parties, or party system age that are either post-electoral measures or obscure local-level variation.

We also contribute to discussions about voting patterns in India. Much of the literature on vote choice in India has focused on ethnic cleavages, electoral mobilization, clientelism, and the structural features of the states' political economy (see, e.g., Chhibber and Kollman, 2009; Nooruddin and Chhibber, 2008; Yadav, 2000; Sridharan, 2004). Our results indicate that weak party-candidate linkages have a large effect on vote choice, including economic voting, and have important implications for our conventional understanding of voting behavior. Our findings indicate that where party systems are institutionalized, with stable party-candidate linkages, electoral dynamics in India resemble those in advanced industrial democracies.

Finally, we contribute a large original dataset on the rerunning patterns of about 80,000 political candidates across 96 state elections held in India between 1986 and 2007. These data are the result of a massive coding effort, where rerunning patterns were manually coded by two separate coders to ensure a high degree of data reliability. We hold that our manual coding is superior to efforts to trace candidates using name-recognition software, because names of the same politicians often appear differently from one election to the next, and different candidates often have similar names. We therefore believe these data will be a valuable contribution to the rapidly growing field of Indian politics.

[5]Studies of both developed and less developed contexts also show that the extent of economic voting varies significantly across countries, within countries, and across groups (Powell Jr and Whitten, 1993; Anderson, 1995; Bengtsson, 2004; Nadeau, Niemi and Yoshinaka, 2002; Lowry, Alt and Ferree, 1998).

Party System Institutionalization and Economic Voting

A well-established literature on economic voting has argued that political institutions can moderate the relationship between the economy and an individual's vote choice. A key insight advanced by Powell Jr and Whitten (1993), was that if voters are unsure about who to hold responsible for the state of the economy, the link between the economy and vote choice can break. Studies have demonstrated weaker evidence of economic voting in contexts with complicated coalition arrangements, greater ideological variance within parties, opposition control of committees or policy-making institutions, multi-level governance, and other governmental and institutional characteristics (Paldam, 1991; Anderson, 2000, 2006; Bengtsson, 2004; Fisher and Hobolt, 2010; Nadeau, Niemi and Yoshinaka, 2002; Whitten and Palmer, 1999; Duch and Stevenson, 2008).

We focus on an important factor aiding voters' ability to evaluate and attribute performance in office—the local-level institutionalization of party systems. As we noted above, strongly institutionalized party systems are characterized by stable patterns of party competition, strong party–voter linkages, clear ideological positions, and well-organized (or institutionalized) individual parties (see Mainwaring and Scully, 1995; Mainwaring, 1999). A weakly institutionalized party system makes attribution harder in several ways: the disappearance and appearance of party labels may confuse voters, the ideological incoherence of party platforms may make it harder to understand the economic effects of government policy, and weakly organized parties may fail to communicate their achievements in office to voters.

Weak party-candidate linkages are an especially detrimental manifestation of a weakly institutionalized party system with regards to voter attribution for economic performance. When party-candidate linkages are weak, incumbent candidates are often eliminated from the choice-set, or worse still, the incumbent party and politician switch alliances and run against each other. This likely results in voters getting numerous and conflicting messages about who is responsible for past events, making it challenging to translate information about the economy into political choices—including economic voting. The patterns of economic voting

are likely to be the weakest (or even reversed) when the incumbent politician reruns under a different party label, but should also be weakened when the incumbent politician does not rerun at all. Operationalizing party-candidate linkages as the local-level rerunning patterns of incumbent politicians therefore allows us to study the mediating effect of party-system institutionalization on the economic vote.

A key concern about our argument is that the direction of causality might run in the opposite direction: parties and candidates may switch parties in response to bad economic conditions. Studies of floor-crossing in parliament have found politicians to be more likely to switch to another party if doing so increases their chance of gaining attractive cabinet portfolios or committee memberships to further their policy interests, or if they think it will help them win future elections (Müller et al., 1999; Thames, 2007; Kerevel, 2014; Radean, 2019). Focusing on party switching from the ruling party to the opposition party in Polish national elections, Zielinski, Slomczynski and Shabad (2005) find that incumbents were more likely to switch parties when unemployment had increased in their district during their term in office.

We hold that parties and candidates are able to behave instrumentally in this way because of the weakness of parties in weakly institutionalized party systems. While the strategic incentives to switch parties might arise in all party systems, the presence of well-organized parties greatly increase the transaction costs of switching electoral alliances for both parties and candidates. Well-organized parties are characterized by routinized intra-party procedures, including standardized rules for candidate nominations and leadership selection, and clear career development paths within the party (Huntington, 1968; Panebianco, 1988; Janda and King, 1985). In such parties, intra-party rules or norms for career advancement mean that candidates cannot easily exit one party and enter another one, as doing so would require starting at the bottom of a new party career hierarchy (Chhibber, Jensenius and Suryanarayan, 2014). Exiting candidates who switch parties will also have to invest in informing the public about their new policy stances and in developing an independent brand from the

party. Party leaders, on their side, are likely to face resistance among loyal party workers if they attempt to retire incumbent candidates in response to short-term considerations or to give seat nominations to politicians from other parties.

This discussion suggests that controlling for the institutionalization of parties, we are unlikely to observe an effect of economic or career incentives on switching. Studies of advanced industrial democracies—where evidence of economic voting is relatively robust—show that the phenomenon of candidates and parties switching alliances is relatively rare and that those that do suffer electorally in the next election (Grose and Yoshinaka, 2003; Snagovsky and Kerby, 2018).

Where parties are weakly organized, a different picture emerges. Weakly organized parties prioritize candidate self-financing and personalistic vote banks, and care less about party branding, policy congruence, or formal intra-party rules for candidate advancement (Samuels, 2006; Siavelis and Morgenstern, 2008). Candidates, too, invest in developing personal connections with local groups and institutions, emphasize individual character and achievements, and minimize the party's performance, platform and ideology (Fox, 2018). Consequently, candidates in such an environment are more likely to exit parties, enter new parties, or float new party labels in order to pursue their career aspirations.

So what factors shape the local-level institutionalization of party systems, and consequently electoral switching? We contend that party-candidate linkages are primarily shaped by slow-moving structural and institutional conditions. We have discussed one such factor above—the internal organization of parties. But beyond organization, the depth of parties' roots in society, their ideological legitimacy, and social cleavages such as class and ethnicity are also likely to shape linkages (Mainwaring, 1999). In a paper on what explains candidate switching in the Indian states, we show that the strength of historical ethnic cleavages, and the internal organizational capacity of parties rather than fluctuations in the economy predict electoral switching (Jensenius and Suryanarayan, 2019).[6] Later in the paper we show

[6]See appendix D for more details.

that even where parties are weak, the measures of the economy that we use do not predict electoral switching in our data.

We make three assumptions that shape how we think about the relationship between party-candidate linkages and the economic vote. First, based on previous studies we assume that voters infer parties' competence by observing economic conditions, and that they will tend to vote retrospectively for the incumbent party or politicians when the economy is doing well and seek to select other leaders when the economy is doing badly (Fiorina, 1978).[7] Second, we assume that economic voting occurs even when the government is not directly responsible for past economic events (see Achen and Bartels, 2004; Healy, Malhotra and Mo, 2010; Leigh, 2009; Wolfers et al., 2002). Third, we assume that voters hold both parties and candidates responsible for the economy, a phenomenon that is more likely in candidate-centric electoral systems such as first-past-the-post electoral systems. [8] However, changes in party switching laws even in proportional systems such as Brazil have been shown to change the electoral performance of parties Novaes (2018).

Party-Candidate Linkages and Economic Voting in India

We study party system institutionalization and party-candidate linkages in Indian state elections. Indian elections at both the state and national level follow first-past-the-post electoral rules and are held every five years. In the post-independence period, the Indian party system transformed from being dominated by one party—the "Congress System" (Kothari, 1964)—into multi-party coalition politics at the national level. While the Bharatiya Janata Party (BJP) has emerged as a dominant force in parliamentary elections more recently, politics in many states remain fragmented, with a large and often-changing number of parties dominating different parts of the country.

[7]This requires relatively little political sophistication. In fact, as discussed by Kayser (2014), it is the low-information voters—who tend to be the least partisan—who are the most likely to vote economically.

[8]It is possible that party-candidate linkages is a less effective measure of local-level party system institutionalization in contexts where parties wield more power through closed-list party nominations or multi-member districts.

State-level political parties in India are by and large weakly institutionalized—with low intra-party democracy and dynastic or personalistic leaders—and are often reliant on weak and fluid social bases. Focusing on the 15 largest states and elections between 1967-2004, Chhibber, Jensenius and Suryanarayan (2014) find that parties often do not provide clarity to politicians about their role in the organization—such as qualifications and procedures for candidate selection, promotions, and succession planning.

Weak party system institutionalization in India's state assemblies and parliament has historically manifested itself as factional splits of parties and 'defections' (or floor-crossing) (Kashyap, 1970). Party defections grew more numerous as the Congress party gradually lost power and politicians sought opportunities in other parties. Rampant floor-crossing resulted in the passing of the Anti-Defection Act in 1985, which disqualified elected members of parliament or state assemblies who defected to other parties during their time in office.[9] While the Act reduced the occurrence of legislative floor-crossing, it did not prevent other manifestations of weak party-candidate linkages, such as low rerunning rates and candidates rerunning for a different party. To our knowledge, this paper is the first to document these occurrences systematically.

Candidate nomination in India is generally dominated by the party leadership (Sircar, 2018). Party elites often select and drop candidates based on their background characteristics such as their wealth (which indicates their ability to finance campaigns), their criminal background (a sign of their greater organizational capacity), and their education level (a sign of their capacity to do the job) (see Vaishnav, 2017). Verniers (2020) notes that politicians who switch are not simply opportunists or political novices but are instead seasoned politicians who are responding to the incentives set by weak and disorganized political parties. Additionally, candidates who are unable to keep up with the exorbitant costs of staying in

[9]This was implemented as the 52nd Amendment to the Indian Constitution. There have, in fact, been several disqualifications as a result of this Act (see [URL] http://www.prsindia.org/administrator/uploads/general/1370583077 Anti-Defection %20Law.pdf). However, the Act has a loop-hole: it is deemed a party-split (and not a defection) if more than one-third of the members leaves an existing party.

politics often exit on their own. Parties too discard incumbent candidates due to alliance and seat sharing agreements or to rebalance local caste equations. Verniers (2019) notes that party leaders, most notably Narendra Modi during his terms as Chief Minister of Gujarat, use renomination as a way to maintain control, sideline undesirable party members, and to deal with factionalism. This approach to talent selection translates into high levels of churn in candidates from election to election as well as frequent poaching of candidates by parties. Examining the 2009 national elections, Sircar (2018) finds that only 53% of incumbent politicians ran for re-election, and only 41% for the same party. These characteristics of Indian political parties and their candidate selection processes provides a good setting for testing our arguments about the effects of weak party-candidate linkages on vote choice because the factors that shape candidate selection are fairly exogenous to local voter dynamics.

Parties' inattention to local dynamics and the high churn in candidates fielded from one year to the next likely make it more difficult for voters in many parts of India to evaluate the incumbent party for their economic performance while in office. Unsurprisingly, previous research provides weak evidence of economic voting in Indian elections. Drawing on state-level data on economic growth, Ravishankar (2009) finds limited overall evidence of an effect of economic performance on support for the incumbent party.[10] Analyzing individual-level data from the Indian National Election Studies, Suri (2009) and Verma (2012) report a positive association between voters' perception of the economy and their propensity to vote for parties in the ruling coalition. But it is unclear to what extent these patterns are driven by partisan bias, i.e., the extent to which voters say they are satisfied with the economy when the party or person they voted for is in power. In the next section we examine the relationship between the state of the economy and vote choice at the state assembly constituency level, focusing on the role of party-candidate linkages in moderating this relationship.

[10]Interestingly, she reports a reverse pattern in "honeymoon" elections, where a state election follows a national election or *vice versa* because in such elections voters have an incentive to put the same party into power at both levels. This incentive decreases as parties stay in power longer.

Data and Key Variables

Our main dataset of electoral returns covers 96 state assembly elections held in 23 Indian states between 1986 and 2007.[11] There are several advantages to restricting our analysis to the years 1986–2007. First, in this period, the boundaries of electoral constituencies remained unchanged across most of India, allowing us to trace candidate rerunning patterns in the same constituencies over time.[12] Second, we avoid the years from the mid-1970s until the mid-1980s when many of the party changes were simply the result of splits and mergers of the Congress Party.[13] Finally, the anti-defection law, which prevented politicians from voting against their party in state and national legislatures, was passed in 1985. Using data from the period after this law was passed means that the changes in party-candidate alliances occured right before elections rather than during a legislative term.

Across the elections included in our data, an average of 10.7 candidates contested in each electoral constituency. However, most votes were cast for a few candidates, resulting in an average effective number of candidates of about three at the constituency level. We manually coded the rerunning patterns of the top five candidates in each constituency in our data. This manual coding covered the rerunning patterns of 79,486 candidates.[14] Based on this manual coding we identified whether the candidates had run for election in the same constituency in the previous election, and, if so, whether or not they were running under the same party label.[15] See online appendix A for further information about our coding choices, a list of states and elections included in the data, and summary statistics for key variables.

[11] This is a subset of the dataset developed by Jensenius (2017).

[12] During these years, the electoral constituencies changed only in Jammu and Kashmir (1995) and Uttarakhand (2001) (Jensenius, 2017, p. 21)—these states are therefore excluded from our dataset.

[13] It was not clear whether voters perceived Congress factions such as the Congress (I) as "the same" or "a different" party.

[14] We focused on the top five candidates because candidates further down the list received few votes. In the median constituency, the top five candidates received 99% of all the votes (meaning that we are excluding candidates who received about 1% of the votes).

[15] In the cases where candidates were found to rerun for the same or a different party we are certain about their rerunning status. Where candidates from the previous election were not found among the top five candidates they may either have not run for election again or they may have run for election and fared very poorly.

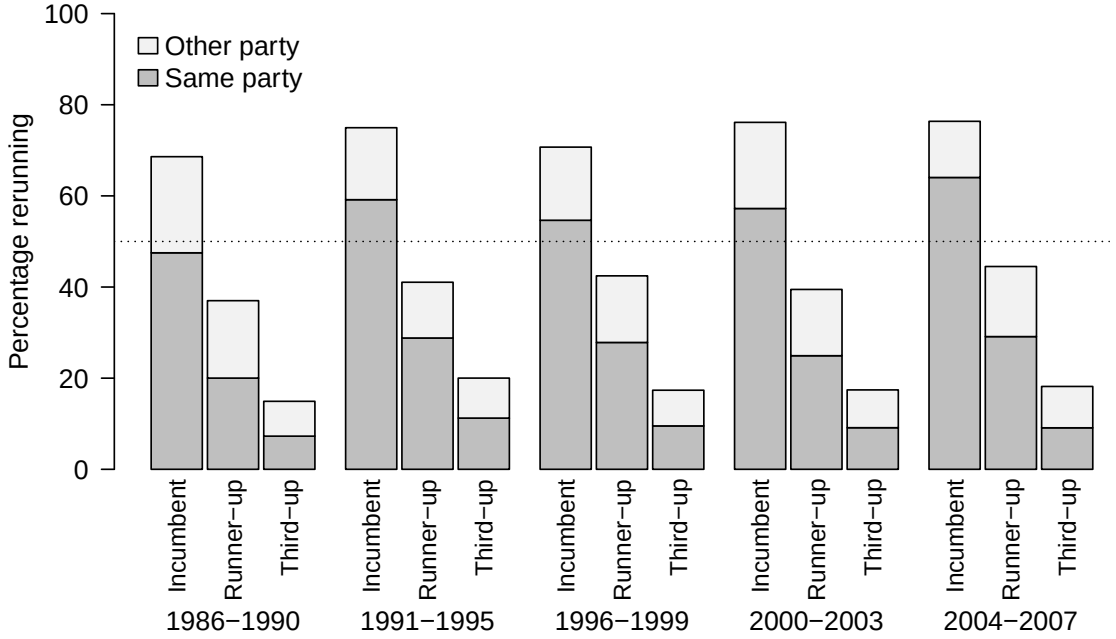
In order to test our claim that economic voting is likely to be more pronounced in contexts with more stable party-candidate linkages, we first focus on the rerunning patterns of incumbent politicians in power in each state assembly constituency in our data. Our main explanatory variable is a categorical variable—*Incumbent ran for the same party*, *Incumbent did not rerun*, or *Incumbent switched party*. We focus on the rerunning patterns of incumbents rather than all candidates in a constituency for two reasons. Because economic voting to a large extent is about punishing or rewarding those in power, the most confusing scenario for voters should be one in which the incumbent candidate and party run against each other. Additionally, as we have argued above, the rerunning patterns of incumbent politicians depend both on the organizational capacity of the incumbent party and on that of other parties in the system. Therefore, rerunning patterns should be considered measures of the institutionalization of the entire party system, not just the incumbent party.

Figure 1 shows the rerunning patterns of the top three politicians in each constituency. The first bar in each set of years illustrates our main explanatory variable—the running patterns of incumbent politicians. In 56% of the electoral races included in the dataset, the incumbent politician reran under the same party label; in 17% of the races the incumbent politician switched to a different party label; in the remaining 27% of races the incumbent politician did not run for re-election.[16] Figure 1 shows that the share of incumbent politicians running for re-election was fairly stable across the years, with a slight increase in candidates rerunning for the same party over time. However, it was not always the same constituencies that experienced unstable party-candidate linkages. About half of the constituencies included in our data had an incumbent politician running under a different party label at least once between 1986 and 2007.

Figure 1 also includes information about the rerunning patterns of the incumbents' main electoral opponents in the previous election. We use these data, and data on the fourth-

[16]The incumbent *party* ended up with a position lower than 5 in about 1% of the cases in our data. In our coding, incumbent politicians rerunning for the same party in these instances would appear as not rerunning since they do not reappear among the top five candidates. Our findings are robust to excluding these cases.

Figure 1: Rerunning Patterns for Politicians in Indian State Elections, 1986–2007



up and fifth-up, to create our alternative measure of local-level party institutionalization *Electoral switching*. An average of about 26% of runners-up reran for the same party, and another 15% for other parties. Most of the runners-up did not rerun. Of third-placed candidates, only about 9% reran for the same party and another 8% for another party. For the fourth and fifth candidates, few were found to have rerun in the same constituency. Altogether, the figure reveals that in a substantial share of constituencies in India between 1986 and 2007, there were weak linkages between parties and candidates and voters often faced little continuity in party-candidate alliances across elections.

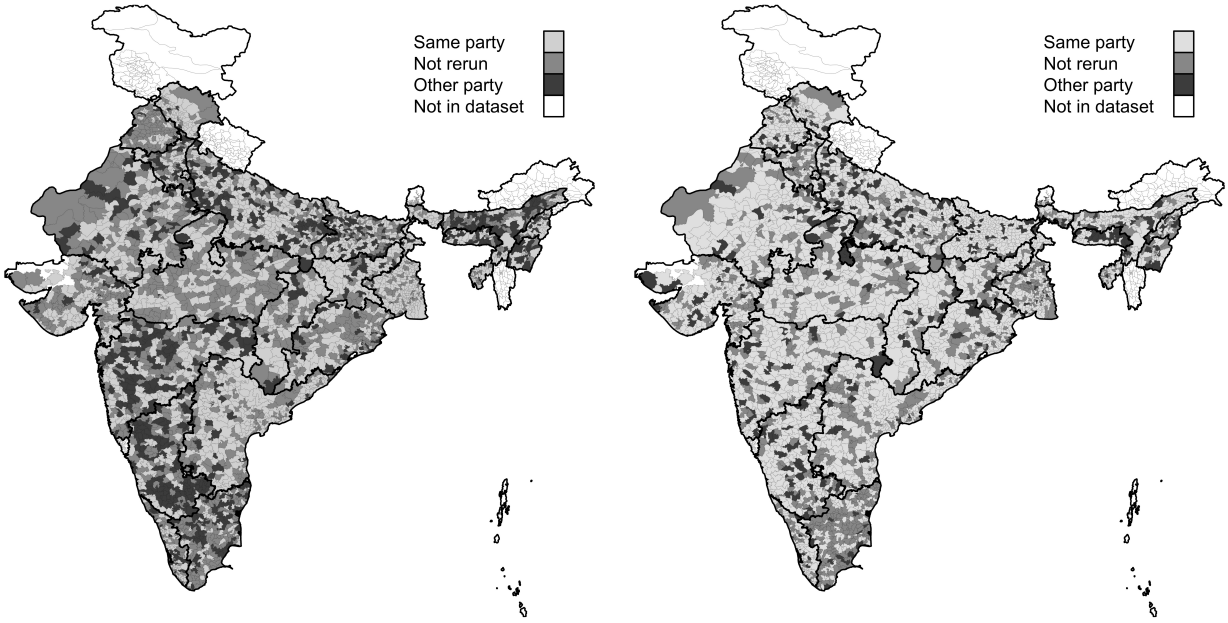
Figure 2 shows incumbent rerunning patterns for the first and last elections in our dataset.[17] These maps show that weak party-candidate linkages are relatively common across the country, although there are differences between and within the Indian states.[18]

To measure the state of the local economy, we use *Lagged rainfall deviation*: the absolute

[17]The map shapefiles we used are from 2001, so the maps include state boundaries for Uttarakhand, Jharkhand, and Chhattisgarh. The constituency boundaries for the former changed in 2001, so it is excluded from our dataset, while the latter two remained unchanged and are therefore included in the data.

[18]See also figure B.1 in the appendix for a breakdown of rerunning patterns for incumbents 1986–2007 across states.

Figure 2: Rerunning Patterns for Incumbent Politicians in Indian State Elections in the First (Left Panel) and Last Elections (Right Panel)



value of the standard deviation from good rainfall in a district in the year before an election.[19] The measure runs from 0 to about 4.5, where 0 signifies optimal rainfall, and higher values indicate more or less than optimal rainfall.

One concern with our rainfall measure is that voters may be aware that politicians have little control over weather patterns. Relatedly, any support for incumbents for an exogenous event like rainfall might be viewed as voter irrationality. However, research has shown that voters tend to reward/punish politicians for events beyond their control likely because voters use the economy as an informational short-cut to evaluate their general well-being under an incumbent (see Fiorina, 1978; Achen and Bartels, 2004; Leigh, 2009; Wolfers et al., 2002). Additionally, voters in a largely rural economy like India might consider politicians' and parties' responsiveness to alleviate distress after bad rainfall as a mark of competence (Cole, Healy and Werker, 2012; Healy, Malhotra and Mo, 2010).

[19]This measure is taken from Cole, Healy and Werker (2012). We agree with Sarsons (2015) who notes that rainfall could have differential effects on the economy depending on local irrigation patterns. We use rainfall deviation as a proxy for local economic conditions rather than as an instrument. In the sections that follow we test whether our results are robust to various agricultural and non-agricultural contexts. See appendix A for further information about how this variable was coded.

We use the rainfall measure as proxy for economic changes at the local-level. A substantial proportion of India's population works in the agricultural sector.[20] As Cole, Healy and Werker (2012) show, poor rainfall has a strong negative effect on agricultural output. A fall in agricultural output can potentially influence the economy through its impact on food prices.[21] Additionally, bad rainfall reduces aggregate demand in the economy which depresses wages for agricultural labor (see Jayachandran, 2006). Rainfall can therefore be used as an indicator for local-level fluctuations in both urban and rural contexts, with likely stronger effects in areas with a higher share of agricultural workers.[22]

Given economic voting, we should see a negative association between rainfall deviation and support for the incumbent party. Our claim is that we are more likely to observe this association if the incumbent politician reruns for the same party. If the incumbent politician does not rerun we should expect an attenuated negative association, and if the politician reruns for another party the economic voting pattern should be even weaker or maybe even reversed if the blame for the bad economy falls on the politician rather than the party.[23]

Our main outcome variable of interest is the vote share for the incumbent party in each constituency. This ranges from 0–98%, with an average of 31% of the vote and a median of 35.5%. India is a multi-level polity, where voters may punish or reward incumbents at multiple levels: the party in power in the federal government (Prime Minister's cabinet), the state government (Chief Minister's cabinet), the party of their member of parliament (MP), or the party of their member of the state legislative assembly (MLA). We focus on members of the state legislative assembly because recent research has show that voters are the most familiar with their elected MLA, most likely to make contact with these officials, and are

[20] Around 42% in 2019, International Labour Organization, ILOSTAT database

[21] It is possible that food prices can be manipulated in the lead up to an election to avoid an electoral backlash. However, Dar, Gupta and Verma (2019) find, that apart from onion prices, there is no evidence of electoral business cycles in the retail prices for 15 major food items in India.

[22] The economic voting patterns we report in the next section is indeed stronger in areas with a higher share of agricultural laborers, as shown in table C.5 in appendix C.

[23] It is possible that a party may actually benefit from a bad economy when voters blame the incumbent politician, which might be viewed as evidence of economic voting of a different form. However, this still has the effect of weakening the link between the economy and a party's electoral fortunes.

likely to associate their economic prospects with their state-level outcomes (Bussell, 2019; Kruks-Wisner, 2018). It is possible that voters might punish politicians at other levels, and we investigate these alternate channels later in the paper (see discussion below and online appendix table C.2).

The models we present also include important controls. First, we include the vote share for the incumbent party in the previous election (when they won the election), because the vote share needed to win a constituency is probably similar across elections and shaped by local dynamics. Second, we include the number of electors in the constituency—an approximation of the population size in the constituency. This has been shown to be associated with how politicians choose to split their time between legislative work and constituency service (Jensenius and Suryanarayan, 2015). We also include the turnout and margin of victory in the previous election—indicators of how competitive elections were in a particular constituency—and indicators for whether the constituency was reserved for Scheduled Caste/Tribe representatives. These variables are further described in appendix A and summary statistics are provided in table A.2. We standardize the continuous variables by centering them at 0 and dividing them by two standard deviations.

Main Results

We estimate linear multilevel models (MLM) where we let intercepts vary by state, year, and state assembly constituency (AC). This modeling specification takes into account the nested nature of the data.[24] Table 1 shows the output from MLM models of the vote share of the incumbent party regressed on incumbent politicians' rerunning patterns and lagged rainfall deviation.

In model 1, *Lagged rainfall deviation* is the only explanatory variable along with state,

[24]Time-series cross-section datasets have generated much debate in the political science field. MLM models have become popular, as they perform better than OLS and fixed effects models in Monte Carlo simulations (Shor et al., 2007). We also ran fixed effects OLS models as a robustness check, which are presented in table C.1 in appendix C.

Table 1: Vote Share for the Incumbent Party Given Party System Institutionalization and the State of the Economy, India 1986–2007

	Model 1 Vote share	Model 2 Vote share	Model 3 Vote share	Model 4 Vote share
Lagged rainfall deviation	0.1	0.0	-0.5^{*}	-0.7^{**}
	(0.2)	(0.2)	(0.2)	(0.2)
Incumbent did not rerun		-9.4^{***}	-10.5^{***}	-10.3^{***}
		(0.3)	(0.6)	(0.6)
Incumbent switched party		-25.8^{***}	-27.9^{***}	-27.9^{***}
		(0.4)	(0.7)	(0.7)
Rainfall × did not rerun			0.9^{*}	0.9^{*}
			(0.4)	(0.4)
Rainfall × switched party			1.8^{***}	2.1^{***}
			(0.5)	(0.5)
Constant	29.8^{***}	37.3^{***}	37.9^{***}	38.0^{***}
	(2.1)	(1.7)	(1.7)	(1.5)
State, Year, AC Random Eff.	*Y*	*Y*	*Y*	*Y*
Control variables	*N*	*N*	*N*	*Y*
N AC-years	14322	14322	14322	14319

Note: Linear multilevel regression models, where constituency-year observations are nested in states, constituencies and years. The few incumbent parties that did not run for re-election are included and assigned 0% of the vote. Control variables included in model 4 are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC.
* significant at $p < .05$; $^{**}p < .01$; $^{***}p < .001$

year, and AC intercepts. If voters punish the incumbent party for bad rainfall (economic voting), this should be reflected in a negative coefficient. However, consistent with previous scholarship, we find no evidence of economic voting in this model.

In model 2, we include the categorical measure for party-candidate linkages. The incumbent politician running for re-election for the incumbent party is the excluded category.[25] The incumbent politician not running for re-election is associated with a 9.4 percentage point drop in vote share for the incumbent party, and the incumbent politician running for another party within the same constituency is associated with a drop of 25.8 percentage points. This association shows that the incumbent party suffers at the polls when it fields a new candidate, and particularly so when the incumbent politician runs against it under a new party label. These are substantively large effects given that the average vote share

[25]In the 13% of cases where the incumbent party did not run for re-election the vote share is set to 0. In appendix C we show the same models with these cases excluded.

in our data for an incumbent candidate rerunning for the same party is 39%. The patterns also indicate the importance of the "personal vote" of politicians in Indian elections, and that voters' loyalties may be split when parties and candidates run against each other. The rainfall variable continues to be insignificant in this model.

Next, we test our argument that economic voting, measured with *Lagged rainfall deviation*, is conditioned by the rerunning patterns of the incumbent politician. Model 3 interacts the rerunning variable and lagged rainfall variables, and model 4 includes constituency-level controls. Since the excluded category of the rerunning variable is that the incumbent politician reruns for the same party, the lagged rainfall deviation coefficient can be interpreted as the effect of bad rainfall in places with strong party-candidate linkages. As expected, the coefficient for lagged rainfall is negative and statistically significant in these models. This result indicates that when the incumbent politician reran for the incumbent party, voters responded negatively to bad rainfall—evidence of economic voting.[26]

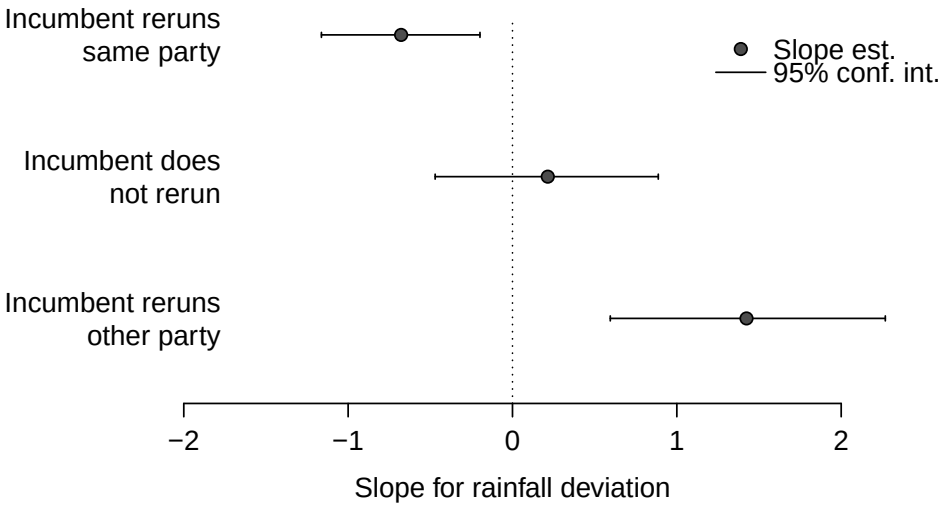
The *Lagged rainfall deviation* coefficient provides us with an estimate of economic voting in places where the incumbent politician reruns for the same party. Additionally, there is a positive and statistically significant interaction between the incumbent politician not rerunning and *Lagged rainfall deviation*. This coefficient is similar in size as the main rainfall coefficient, indicating that the economic voting pattern disappears when the party fields a new candidate. There is an even larger and statistically significant positive interaction term between *Lagged rainfall deviation* and the incumbent politician switching to another party, indicating that voters punish the candidate rather than the party for poor rainfall.

The interaction effect of rainfall and rerunning is illustrated in figure 3. Here we see the predicted slope for *Lagged rainfall deviation* from model 4 in table 1, for three scenarios: the incumbent politician rerunning for the same party, not rerunning, or switching to another

[26]The coefficient of -0.7 in model 4 indicates that a one standard deviation shift from good rainfall in a district in the year before an election is associated with the incumbent party losing about 0.7 percentage points of the votes. Since about 4% of the elections included in our data had a winning margin of less than 0.7%, this could have shifted the outcome in many elections. Also, given that *Lagged Rainfall Deviation* only captures one aspect of the state of the economy—and is likely a noisy measure—this pattern suggests that there is in fact economic voting in Indian elections.

party.[27] The top dot illustrates the coefficient of 0.7—the expected loss in vote share with a one standard deviation change in rainfall in constituencies where the incumbent politician reran for the same party. This is evidence of economic voting. The middle dot illustrates the absence of an effect of bad rainfall where the incumbent politician did not rerun. And finally, the bottom dot shows that bad rainfall was associated with a higher vote share for the incumbent party when the incumbent politician reran for another party.

Figure 3: Vote Share for the Incumbent Party Given Bad Rainfall, 1986–2007



As noted above, it is possible that voters in India make their vote choice on the perception of the performance of a party at various level levels of government. We examine whether our main results were driven by the incumbent politician's alignment with the Chief Minister in their state or with the Prime Minister. Our main result holds across these four sub-samples, although the punishment for bad rainfall is somewhat stronger in constituencies that are not aligned with the Chief Minister (see appendix table C.2).[28]

In figures 1 and 2, we observed a decreasing level of party switching over time, suggesting

[27]The estimates and confidence intervals are based on 10,000 simulated values generated using the variance-covariance matrix of model 4. The intercept and the relevant rerunning variable were set to 1, the reservation status of the AC was set to general category, and the remaining variables were set to their mean.

[28]This finding is consistent with Cole, Healy and Werker (2012) who show that voters don't punish incumbents as severely when the government is more responsive. The alignment of an MLA to the Chief Minister's party likely makes them better able to respond to poor rainfall.

that there might be a time-trend in our data. Our claim that stable rerunning patterns are symptomatic of local-level party system institutionalization is consistent with a decreasing level of switching over time because the age of a party-system is likely to be associated with greater party-system institutionalization. To explore this we include a variable called *Election Number*—the number of elections held in a state since the 1970's delimitation—since each election presents an opportunity for voters to learn about local political dynamics, and for parties and candidates to learn from their prior electoral strategies. *Election Number* is indeed a strong predictor of the vote share for the incumbent party, suggesting that incumbency effects increased the more elections were held in a state. However, there is no significant interaction between the election number and rainfall deviation (see appendix table C.3 and the inclusion of election number as a control does not change our main results.[29] The decline in switching might also be a function of the decline in the Congress party in this period. We investigate whether there is a Congress effect by dividing the constituency-elections in the data into whether or not Congress won the previous election (was the incumbent). Our main results hold across both types of constituencies (see appendix table C.4).

It is also possible that our results are being driven by constituencies that are particularly rainfall-dependent. As noted in the previous section, rainfall should affect the economy in areas with a high share of wage workers, since it shapes the demand for agricultural labor. We divide the data into places with more and fewer agricultural laborers,[30] and find that the effect of rainfall on voting patterns is indeed higher in constituencies with higher share of agricultural laborers (see appendix table C.5). Importantly, our results hold in constituencies where alternative types of industry dominate, such as mining, manufacturing, construction amongst others (see appendix table C.6).

[29] Additionally, in table C.3 in the appendix we include a time trend variable, *Year*, and find that the variable is not significantly associated with vote share for the incumbent, on its own or as a control variable in our main model.

[30] We impute the share of agricultural laborers in each of our constituencies in1986 based on constituency-level estimates of census variables from 1971 and 2001 developed by Bhavnani and Jensenius (2015).

Alternative Measures of Party System Institutionalization

It is possible that the actions of parties and candidates in response to a weak economy shape their decisions to maintain stable linkages across election years—this implies that there may be reverse causality in the patterns we observe. Our argument emphasizes the institutional and structural underpinnings of party system institutionalization rather than the strategic intent of parties and candidates as the central factor shaping rerunning patterns. Theoretically, while parties and candidates may always be tempted to change alliances when the economy is doing badly, they are more likely to do so when weakly organized parties incentivize this type of short-term thinking.

Table 2: Vote Share for the Incumbent Party Given Party System Institutionalization and the State of the Economy, Alternative Measures of Party System Institutionalization

	Incumbent vote share	Incumbent vote share	Incumbent vote share
Lagged rainfall deviation	-0.6^{**}	-0.4	-1.0^{**}
	(0.2)	(0.3)	(0.4)
Electoral switching	-35.9^{***}		
	(1.1)		
Rainfall × Electoral switching	3.9^{***}		
	(0.8)		
Electoral switching lagged		-4.1^{***}	
		(1.2)	
Rainfall × Electoral switching lagged		2.4^{**}	
		(0.8)	
Weak party organization			-14.6^{***}
			(0.7)
Rainfall × weak organization			1.4^{**}
			(0.4)
Constant	35.9^{***}	31.1^{***}	41.5^{***}
	(1.6)	(1.9)	(1.9)
State, Year, and AC Random Effects	*Y*	*Y*	*Y*
Control variables	*Y*	*Y*	*Y*
N AC-years	14,319	14,317	14,319

Note: Linear multilevel regression models, where constituency-year observations are nested in states, constituencies and years. Control variables are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC.
* significant at $p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 2 shows output from models where we have replaced the measure of the rerunning patterns of incumbents with three alternative measures of party-candidate linkages that are

unlikely to have been shaped by the economy in the year before the election. First, we use a weighted average of the number of candidates (among the top five) who switched parties in the election (*Electoral switching*).[31] The intuition behind this measure is that the organization of parties beyond the incumbent party matters, as routinized parties are unlikely to accept the lateral entry of a candidate from another party (see Chhibber, Jensenius and Suryanarayan 2014). Though theoretically interesting, this measure is still subject to similar endogeneity concern as our main measure as it includes data on the incumbent. We therefore use a lagged value of the same measure (*Electoral switching lagged*), which is not influenced by short-term strategic decisions made by the incumbent party in response to the economy. Finally, we use a qualitatively coded measure of the organizational capacity of the party in power in the AC in the previous election (*Weak party organization*).[32]

The intuition behind each of these measures is that they are less endogenous to short-term fluctuations in the economy, the last two measures should in fact not be affected by the strategic decisions of politicians to rerun or not in response to the state of the economy. All three alternative measures of party system institutionalization show the same pattern of economic voting as we saw in our main models. The hardest test is provided in model 3, where we use a measure of the organizational capacity of the incumbent party based on state-level coding of qualitative data sources. The coefficients for *Lagged rainfall deviation* given *Electoral switching* and *Weak party organization* are illustrated in figure C.1 in appendix C.[33]

Finally, in table 3 we directly address endogeneity concerns in our data by showing that our main indicator of economic voting, *Lagged rainfall deviation*, is not a statistically significant predictor of the incumbent politician rerunning under a different party label. The

[31]The candidates are weighted by their vote share in the previous election. See appendix A for further details.

[32]This is based on the state-level coding of parties by Chhibber, Jensenius and Suryanarayan (2014). See appendix A for further details.

[33]In appendix table C.7 we run our main models by splitting the data by states with above and below median levels of incumbents switching to another party, and into constituencies with above and below median levels of *Electoral switching*. We find that states and constituencies with lower levels of switching had more robust patters of economic voting.

coefficients for *Lagged rainfall deviation* are very small and even run in the opposite direction of what we should expect if bad rainfall encourages party switching. Our alternative measure, *Weak party organization*, is on the other hand a strong predictor of the incumbent politician switching party. This further increases our confidence that we are indeed measuring the effects of weakly organized parties rather than of short-term opportunistic behavior.

Table 3: Predictors of Incumbent Politicians Rerunning under a Different Party Label

	Incumbent politician switching	Incumbent politician switching	Incumbent politician switching
Lagged rainfall deviation	−0.006	−0.004	−0.006
	(0.006)	(0.006)	(0.006)
Weak Party Organization		0.279***	0.278***
		(0.010)	(0.010)
Constant	0.256***	0.037	0.034
	(0.036)	(0.036)	(0.034)
State, Year, and AC Random Effects	*Y*	*Y*	*Y*
Control variables	*N*	*N*	*Y*
N AC-years	10,459	10,459	10,458

Note: Linear multilevel regression models, with constituency-year observations are nested in states, constituencies and years. Control variables included in model 3 are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC.
* significant at $p < .05$; **$p < .01$; ***$p < .001$

Alternative Measures of Economic Performance

Our measure of economic performance, while attractive because it is fairly exogenous to local political dynamics, raises a different question for our analyses: to what extent do voters blame or reward politicians for rainfall, which they might understand to be out of the politicians' control? In table 4 we provide two alternative measures of the state of the economy: the night-time light in the election year (data available 1995-2007), and the change between 1998 and 2005 in the share of the population holding government jobs (used with election data 2004–07).[34] Here we should expect more light and more jobs to be associated with more

[34]These variables are based on the replication files of Asher and Novosad (2017). See appendix A for further details.

support for the incumbent party when the incumbent politician reruns for the same party. This positive association should be attenuated when the party runs a new candidate, and even more attenuated or even negative with incumbent party vote share when the incumbent politician runs against the party.[35]

Table 4: Vote Share for the Incumbent Party Given Party System Institutionalization and the State of the Economy, Alternative Measures of the State of the Economy

	Model 1	Model 2	Model 3	Model 4
	Night-time light		Change in government jobs	
Economy doing well	1.8^{***}	1.6^{***}	1.9	1.3
	(0.3)	(0.3)	(1.0)	(0.9)
Incumbent did not rerun	-5.5^{***}	-4.5^{***}	-7.2^{***}	-7.1^{***}
	(0.9)	(0.8)	(0.7)	(0.7)
Incumbent switched party	-23.3^{***}	-21.7^{***}	-24.3^{***}	-23.1^{***}
	(1.1)	(1.1)	(0.8)	(0.8)
Economy × did not rerun	−0.2	−0.4	-5.5^{*}	-5.3^{*}
	(0.4)	(0.4)	(2.4)	(2.2)
Economy × switched party	-1.2^{*}	-1.3^{*}	-2.7^{*}	-2.4^{*}
	(0.6)	(0.6)	(1.2)	(1.1)
Constant	36.1^{***}	36.3^{***}	39.4^{***}	40.0^{***}
	(2.6)	(2.0)	(2.4)	(2.5)
State and Year Random Effects	*Y*	*Y*	*Y*	*Y*
AC Random Effects	*Y*	*Y*	*N*	*N*
Control variables	*N*	*Y*	*N*	*Y*
N AC-years	7,508	7,506	2,876	2,876

Note: Linear multilevel regression models, where constituency-year observations are nested in states, constituencies, and years. The few incumbent parties that did not run for re-election are included and assigned 0% of the vote. Control variables are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC. The night-time light is the log of the sum of annual night-time light in a constituency the year of the election. The government jobs variable has been rescaled by centering it and dividing by two standard deviations.
* significant at $p < .05$; $^{**}p < .01$; $^{***}p < .001$

This is exactly what we find. In models 1 and 2 we see that the vote-share for the incumbent party was higher in places with more night-time light in the election year when the incumbent politician reran for the same party. There is also a statistically significant

[35]There are two advantages to these measures. First, unlike rainfall, they vary by the assembly constituency and not just the larger district, allowing for explanatory variables that match the geographic territory of the dependent variable. Second, Asher and Novosad (2017) show that local politicians in competitive constituencies manage to secure more resources towards jobs and nightlight when they are aligned with the party in power. For these reasons we believe these measures offers both a proxy for economic change and a proxy for the ability of the politician to shape that change.

interaction term between night-time light and the rerunning patterns of the incumbent, with attenuated economic voting patterns if the incumbent did not rerun and almost no economic voting in areas where the incumbent politician switched parties. Similarly, in models 3 and 4 we see the same patterns in places with an increase in government jobs. The coefficient for the economy doing well from models 2 and 4 are illustrated in figure C.2 in appendix C.

Economic Voting Using Individual-Level Survey Data

In the previous section we showed evidence of economic voting using data at the electoral constituency level. One difficulty confronting us is that while the theory we offer is about individual-level political choices that voters make in weakly institutionalized party-systems, our constituency-level analysis used place-based variation in party rerunning patterns, macroeconomic conditions, and incumbent vote-share. In order to address potential concerns about ecological fallacy in our analysis, as well as to devise a more direct test of how party institutionalization and economic evaluation shape voter calculations, we use data from the 2004 National Election Study (NES), conducted in the aftermath of the parliamentary elections of 2004. The NES has data on a random sample of 27,189 electors from across the Indian states. The outcome of interest is whether or not an individual voted for the incumbent party in their parliamentary constituency (PC).

The main explanatory variable is the rerunning patterns of incumbent politicians, coded at the PC level.[36] The survey asked questions about respondents' perceptions of the economy. One question explicitly asked respondents' about their personal economy, providing a measure of egotropic economic voting.[37] Another question asked respondents about the economy in the country as a whole, providing a measure of sociotropic economic voting. To avoid post-justification bias that may be associated with such subjective measures, we

[36] See appendix A.2 for further information about the data.

[37] "During the past five years, has your financial situation improved, worsened, or has it remained the same?"

continue to use *Lagged rainfall deviation* as an exogenous proxy for the state of the local economy.

Table 5 shows the output from MLM models examining the association between incumbent politicians' rerunning patterns and voter's propensity to vote for the incumbent party in their PC. Individuals are nested in PCs. At the PC level, the majority (238, or 66%) of incumbent politicians reran for the same party, 22 (6%) ran for another party, and 101 (28%) did not rerun. When we nest individuals in PCs we consequently have little power for the category of incumbents running for another party. In these models we have therefore collapsed *Incumbent rerunning for another party* and *Incumbent does not rerun* into a single category: *Other party/not rerunning*. This change gives us a bit more power for the estimates, but does not substantially change the size or direction of the coefficients (see table C.8 in the appendix).

In model 1 in table 5, we show the association between the state of the economy and voters' propensity to vote for the incumbent party in the PC. The state of the economy is measured as 1 if respondents said that their personal economy had "worsened" over the past five years and 0 otherwise. If voters voted on the basis of the economy we should expect a negative coefficient, which we do in fact see in the model.

In model 2, we include an indicator for whether the incumbent politician reran for the same party, an interaction term between the economy and the rerunning patterns of the incumbent politician, and also other individual-level controls: indicators for the person voted for the incumbent party in the previous election, for whether the voter was a man or a woman, the community of the person (Muslim/Scheduled Caste/Scheduled Tribe/Other), and whether they lived in a rural or urban area. Based on our theoretical discussion, we should expect to observe a clearer pattern of economic voting (a bigger negative coefficient) in PCs where the incumbent politician ran for re-election for the same party and we should expect the interaction term to be positive because the tendency to punish the incumbent party is attenuated if it runs a new candidate. These are exactly the patterns we see in

model 2 with a negative and significant association between the perception of the economy voting for the incumbent party in places where the incumbent politician reran and a positive interaction—indicating a weaker pattern of economic voting—where the incumbent did not rerun or reran for another party. The interaction terms is significant at the 10% level and is robust to excluding "don't know" responses from the data.

Table 5: Propensity to Vote for the Incumbent Party in the PC, NES 2004

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Personal economy		National economy		Rainfall deviation	
Economy doing badly	-0.26^{***}	-0.36^{***}	-0.33^{***}	-0.31^{***}	0.04	$-0.11^{\dagger}$
	(0.05)	(0.07)	(0.04)	(0.05)	(0.05)	(0.07)
Other/not rerunning		-0.24^{*}		-0.32^{*}		-0.51^{**}
		(0.11)		(0.13)		(0.18)
Economy × other/not rerun		$0.20^{\dagger}$		$0.17^{\dagger}$		0.24^{*}
		(0.11)		(0.09)		(0.11)
Constant	-0.65^{***}	-1.54^{***}	-0.46^{***}	-1.40^{***}	-0.75^{***}	-1.45^{***}
	(0.05)	(0.08)	(0.06)	(0.09)	(0.08)	(0.12)
N respondents	17640	17640	17640	17640	17640	17640
N PCs	361	361	361	361	361	361
Control variables	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*

Note: Multilevel logit models. The individual level data are nested in PCs. Control variables: Vote for the incumbent in the previous election, woman/man, Muslim/SC/ST/other and Urban/Rural.
† significant at $p < .1$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

In models 3 and 4 we run the same models, but with the view of the national economy as an indicator of the economy. Here, we coded the economy as doing well if they said that "prosperity has come" and worse otherwise. The pattern is very similar, though in this case the interaction term is not robust to excluding "don't know" responses from the data.

Finally, in models 5 and 6 we look at the pattern for *Lagged rainfall deviation*. Here, too, the coefficients move in the directions we should expect. In the model without an interaction term, the rainfall deviation variable is positive and insignificant at conventional levels. Once we include the interaction with rerunning patterns, the coefficient flips and grows larger, and it is significant at the 10% level. As expected, we also see a strong, positive, and statistically significant interaction between rainfall deviation and rerunning patterns. Across all these three indicators of the economy, the individual-level patterns are consistent with what we observe in the AC-level data.

Conclusions

Economic voting is a well-established phenomenon in advanced industrial democracies. In democracies in the developing world, however, the link between economic outcomes and the vote is not as clear cut. In this paper we have argued that party system institutionalization, and in particular, the extent to which parties and candidates maintain stable electoral alliances from one election to the next, is key to understanding voting patterns. Whereas stable party-candidate linkages are assumed in much of the literature on elections and voting, studies from across the world document weak linkages. In some countries parties regularly split, merge, or change their names. In others, legislative floor-crossing is rampant. And in still others, such as in the Indian states, parties change their candidates from election to election and incumbent politicians often end up running against the incumbent party. From a voter's perspective, this results in confusing electoral options making it unclear whom to reward or punish for economic performance in office.

Using constituency-level data from the Indian states, individual-level data from the National Election Studies of 2004, and data on rainfall, nighttime light, and government jobs, we show that where incumbent politicians reran for the same party there was evidence of economic voting. Importantly, our findings are robust to alternative measures of party institutionalization at the local level, which seek to alleviate concerns about the endogeneity of candidate selection to economic performance.

Our findings have several implications for studies of voting behavior and of democratic accountability. Our work contributes to a growing literature that shows how performance in office may be obscured by contextual factors. This shapes democratic accountability: when parties routinely change candidates for reasons unrelated to performance in office (such as wealth and muscle power) or if candidates switch parties from election to election—as happens in much of the world—voters will be unable to use elections to hold candidates and parties accountable for performance in office. Recent experimental studies have shown that providing voters with information about politicians' honesty or effort was not associated with

voters internalizing that information in politically consequential ways (Dunning et al., 2019). Our findings suggest that robust party-candidate linkages might be an important channel through which voters become informed about politicians and are able to meaningfully use that information on election day.

India is often cited as an example of volatile voting patterns and anti-incumbency voting. Our results suggest that these patterns may be a function of weakly institutionalized parties. Studying the institutional underpinnings of incumbency presents a fruitful avenue for future research. Finally, although Indian voters are sometimes stereotyped as voting their identity more than their interests, our findings demonstrate that given stable electoral alternatives and clear party-candidate linkages, voters in India make their vote choice on the basis of the performance of the incumbent party.

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Party System Institutionalization and Economic Voting: Evidence from India

Francesca R. Jensenius*and Pavithra Suryanarayan†

Appendix

- A. Data and coding of variables
- B. Additional figures
- C. Robustness checks
- D. Note on related research

*University of Oslo, email: f.r.jensenius@stv.uio.no
†Johns Hopkins University, email: psuryan1@jhu.edu

Appendix A Data and Coding of Variables

A.1 Assembly Constituency-level Data

The main dataset in this paper uses electoral returns and information about the rerunning patterns of candidates in India's state assembly constituencies. The election data is a subset of the elections data that was downloaded from the website of the Election Commission of India (ECI), scraped, and cleaned by Jensenius (2017). The dataset we use here covers electoral contests in more than 3,700 state assembly constituencies (electoral districts) in India between 1986 and 2007, or information about 96 state assembly elections held in 23 Indian states.[1] The state elections included in the sample are listed in Table A.1.

The election data include information about each constituency in each election, the number of electors and the number of voters. There is also information about each of the candidates running for election in each constituency, their party, gender, and the number of votes that they received. Based on this we created the following variables:

Votes for the incumbent party: For each election we identified the vote share for the political party that had won in the previous election. Parties that remained the same, but changed name or label in the ECI data were treated as the same party.[2] The incumbent party ran for re-election in about 87% of the constituencies (and was among the top five contenders in 86% of the constituencies). If the incumbent party did not run for re-election we assign it a vote share of 0, but our findings are robust to excluding these cases.

Vote share for incumbent lagged: The vote share for the winning party in the previous election in the constituency.

[1] These are almost all the elections held during this period, with the exception of Arunachal Pradesh (due to missing data), Jammu and Kashmir (due to a delimitation of electoral boundaries in 1996), Uttarakhand (because of a delimitation in 2001), and a few elections that are missing for Northeast India.

[2] This applies to different abbreviations for AIADMK (ADK, ADMK), as well as CPM and CPI(M) in Kerala and West Bengal between 2001 and 2006. Since we start the data in 1986, our data does not include the transition from BJS to BJP nor the splits and name changes of the Congress Party in the 1970s and early 1980s.

Table A.1: State-elections included in our dataset and analysis

State	Elections included in the dataset
Andhra Pradesh	1989 1994 1999 2004
Assam	1991 1996 2001 2006
Bihar	1990 1995 2000 2005 2005.5
Chhattisgarh	1990 1993 1998 2003
Gujarat	1990 1995 1998 2002 2007
Haryana	1987 1991 1996 2000 2005
Himachal Pradesh	1990 1993 1998 2003 2007
Jharkhand	1990 1995 2000 2005
Karnataka	1989 1994 1999 2004
Kerala	1987 1991 1996 2001 2006
Madhya Pradesh	1990 1993 1998 2003
Maharashtra	1990 1995 1999 2004
Manipur	1990 1995
Meghalaya	1988 1993 1998
Nagaland	1987 1989 1993 1998
Orissa	1990 1995 2000 2004
Punjab	1992 1997 2002 2007
Rajasthan	1990 1993 1998 2003
Sikkim	1989 1994 1999
Tamil Nadu	1989 1991 1996 2001 2006
Tripura	1988 1993 1998
Uttar Pradesh	1989 1991 1993 1996 2002 2007
West Bengal	1987 1991 1996 2001 2006

Electors: The number of eligible voters in a constituency. Because voters do not have to self register this is an estimate for the number of people living in the constituency. Constituencies had been redrawn with a similar population size in the early 1970s but were not changed until 2008. Throughout the period covered by our data there are therefore large differences in population (and number of eligible voters) across the constituencies.

Turnout lagged: The number of voters divided by the number of electors in the previous election in the constituency.

Margin of Victory lagged: The difference in the vote share of the winning candidate and runner-up in the previous election in the constituency.

To create variables for the rerunning patterns of politicians, the top five candidates in each constituency were manually coded as rerunning if they had been among the top five candidates in the same constituency in the previous election as well. For the 79,254 candidates that we coded manually in this way we recorded their position in the election and whether they ran again for the same party. We chose to use the top five candidates because the vast majority of votes across constituencies go to the top five candidates (the median is 99%).

We opted to look for rerunning patterns only within the same constituency because of the difficulty of identifying people by name in other constituencies. There are always many candidates with similar names in a given state, and if someone runs in another constituency for another party it is hard to know whether it is the same person. Additonally, Jensenius (2017, p. 111) has shown that very few MLAs run for re-election in a different constituency. It is also hard to know whether a candidate is the same as someone with the same name who ran several elections earlier. Our coding choices minimize erroneous coding of candidates as rerunning when they are in fact not rerunning, but underreport how many candidates were in fact running again.

Considerable efforts were made to ensure data reliability. For most states, the work of coding rerunning patterns was done by two different data companies, and the data were compared and corrected until the two versions corresponded. In cases where the coders were in doubt, we went through the coding ourselves—in practice, for ten of the states in the dataset. After that, the most reliable coder was tasked with finishing the rest of the data.

Based on this work, the following variables were created to measure party system institutionalization:

Incumbent rerunning: For each constituency-election we coded whether the incumbent politician was rerunning for same party, for another party or was not found among the top five candidates.

Electoral Switching: For each constituency-election we calculated the weighted average

of the number of candidates that reran for a new party: $Electoral\ Switching = \sum_{i=1}^{N} \frac{S_{i,t} * v_{i,t-1}}{V_{t-1}}$. In the formula, $S_{i,t}$ is an indicator for whether a candidate i was a switcher in that election, $v_{i,t-1}$ is the vote share of candidate i in the previous election, and V_{t-1} is the sum of the votes across the top five candidates in the constituency, N, in the previous election. We chose to weigh the constituency-level measure by the vote-share of the candidate in the previous election because it is likely of more political importance both for parties and for voters if the incumbent candidate—or other candidates with a high vote-share—changes party label. This variable was created for each election and also for the previous elections (lagged).

Weak party organization: This is a measure based on the qualitative coding of the internal organization of parties in India's 15 largest states that was coded at the state level for each election between 1967 and 2004 by Chhibber, Jensenius and Suryanarayan (2014). We used the measure at the constituency-election level, by assigning a 1 if the incumbent party in that constituency-election was considered "weak" at the state level in the previous election and 0 otherwise.

To measure the state of the economy at the local level, we used three measures:

Lagged rainfall deviation: This variable is based on monthly gridded precipitation and temperature data produced by the Indian Meteorological Department (Rajeevan et al. 2005, Srivastava, Rajeevan and Kshirsagar 2009), converted to yearly district-wise figures by area-weighted averaging over grid points falling within a given district (Blakeslee and Fishman 2014). Following, Cole, Healy and Werker (2012) we used these data to calculate the absolute deviation of normalized rainfall from the optimum (which they find to be 1 standard deviation above the district mean): $\mid \frac{Rain_{dt} - \overline{Rain_{dt}}}{S_d} - 1 \mid$. In our data, this variable runs from 0 to about 4.5, where 0 signifies good rainfall and higher values means unusually high or low rainfall. The sample size is somewhat reduced in the models where we include this variable because not all district names

merged correctly.

Change in government jobs 1998-2005: This variable is from the Indian Economic Censuses of 1998 and 2005. It captures the change between 1998–2005 in the share of the population in a constituency holding government jobs in public sector companies and administrative offices. It is created based on variables taken from the replication files for Asher and Novosad (2017).

Nighttime light in election year: This variable was developed by Asher and Novosad (2017). It is the log of the sum of annual nighttime light pixels overlapping with a constituency during the year an election is held. The griddled annual nighttime light data were downloaded from the website of the National Oceanic and Atmospheric Administration and matched to constituency polygons from ML-Info and to election year. A number of studies use nighttime light as a high-resolution measure of economic growth, especially in contexts where other types of economic data are relatively sparse (Chen and Nordhaus 2011, Henderson, Storeygard and Weil 2012). For instance, Wu et al. (2018), show that nighttime light was highly correlated to sub-national GDP, both at the provincial and prefecture level, in China. One issue with this indicator, however, is that it may be picking up electricity supply rather than changes in economic activity. However, Asher and Novosad (2017) find that political factors at the constituency-level predict the night lights measure but not the available supply of electricity. This gives us some confidence that nighttime light, similar to the government jobs measure, is a reasonable proxy for a local economic indicator that politicians have some control over.

Table A.2 provides summary statistics for all the variables just described—with the exception of the rerunning variables, which are categorical. These are summarized in figure 1 in the main paper.

Table A.2: Summary Statistics for Included Variables

	N	Min.	Max.	Median	Mean
Votes incumbent party	16,587	0.0	98.2	35.5	30.9
Vote share for winner lagged	16,587	0.0	98.3	48.2	47.3
Electors	16,587	2,782	1,593,907	154,357	159,905
Turnout lagged	16,584	1.1	100.0	65.5	64.4
Margin of victory lagged	16,584	0.0	96.6	10.6	14.0
Lagged rainfall deviation	14,322	0.0	4.5	1.1	1.2
Nighttime light in election year	7,508	0.0	4.2	1.8	1.8
Government jobs, change 1998–2005	2876	-13.2	81.3	0.1	0.2

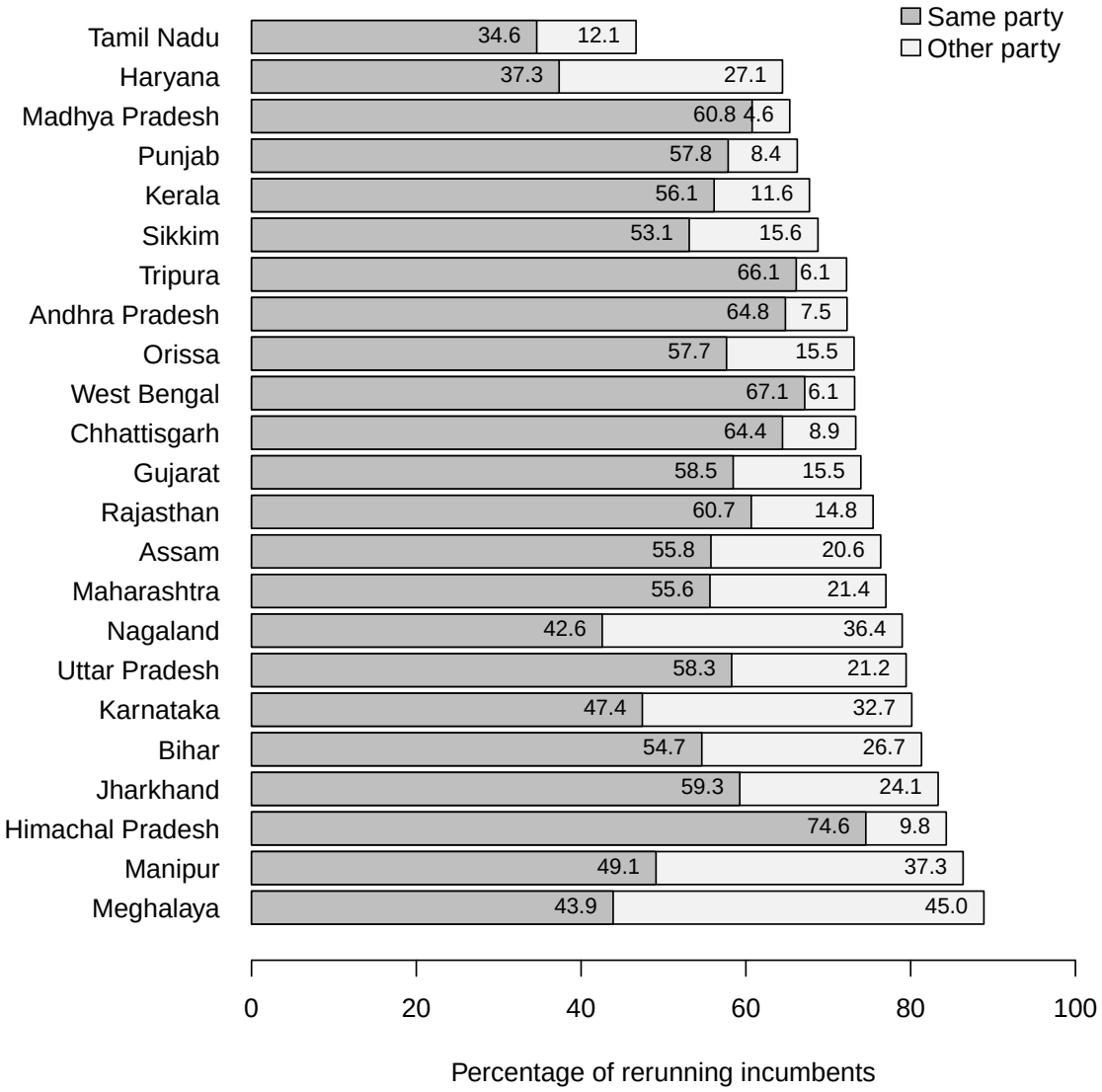
A.2 National Election Study Data

The 2004 National Election Study (NES) was conducted by Lokniti, Center for the Study of Developing Societies, New Delhi in the aftermath of the parliamentary elections of 2004. The study consists of individual-level structured interviews with a random sample of 27,189 electors from across the Indian states. The survey was conducted in 22 languages, and census data from the 2001 Indian census was used to ensure that there was adequate representation of ethno-linguistic communities in the states with a particular focus on ensuring sufficient sampling from marginalized groups such as scheduled castes and tribes. See www.lokniti.org for further information about the survey.

To look at the importance of party-candidate linkages, we coded the rerunning patterns of the top five politicians in each parliamentary constituency. This was done in the same way as in the state assembly level data described above. These data were merged into the survey data.

Appendix B Additional Figures

Figure B.1: Rerunning Patterns for Politicians Across Indian States, 1986–2007



Appendix C Robusness checks

Figure C.1: Vote Share for the Incumbent Party Given Bad Rainfall, Alternative Measures of Party System Institutionalization

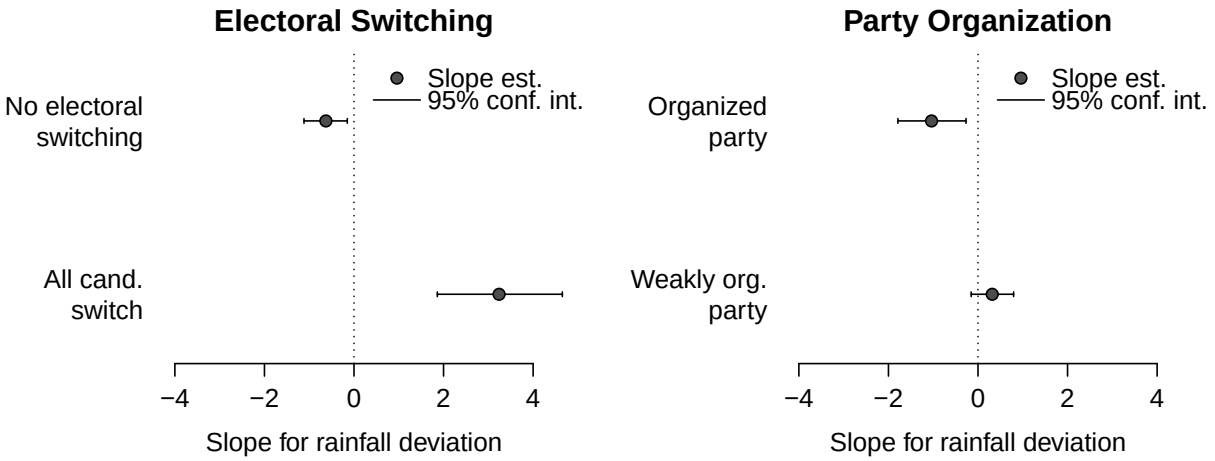


Figure C.2: Vote share for the Incumbent Party Given a Good Economy

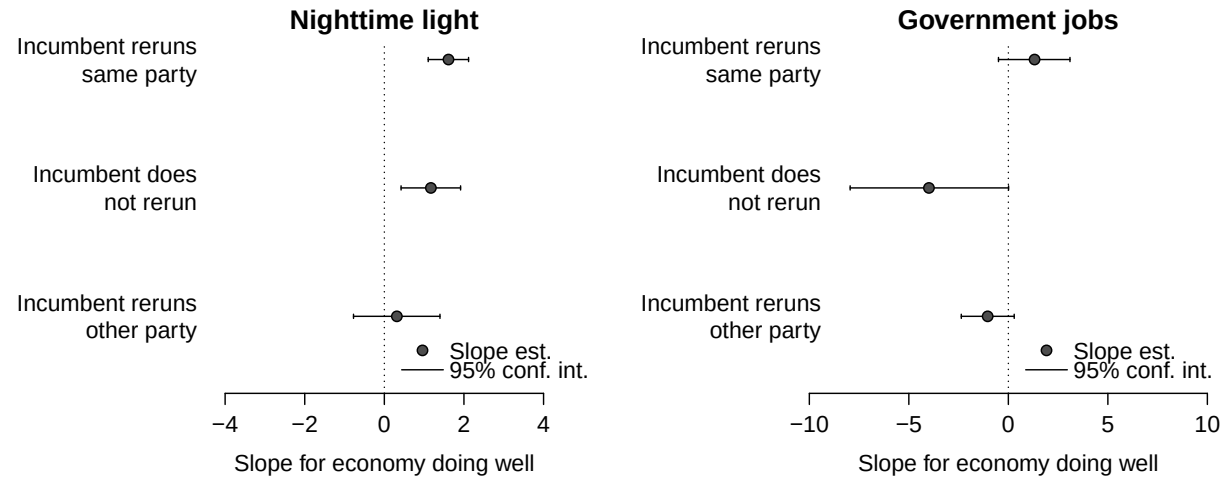


Table C.1: Vote Share for the Incumbent Party Given Rerunning Patterns of Politicians (1986–2007), OLS Specification

	Vote share	Vote share	Vote share	Vote share
Lagged Rainfall Deviation	0.2	0.1	−0.4	−0.6*
	(0.2)	(0.2)	(0.3)	(0.3)
Incumbent did not rerun		−9.5***	−10.6***	−10.4***
		(0.3)	(0.6)	(0.6)
Incumbent switched party		−26.2***	−28.3***	−28.1***
		(0.4)	(0.7)	(0.7)
Rainfall × did not rerun			0.9*	0.9*
			(0.4)	(0.4)
Rainfall × switched party			1.8***	2.1***
			(0.5)	(0.5)
Constant	46.7***	51.8***	52.5***	49.6***
	(1.3)	(1.2)	(1.2)	(1.2)
State and Year Fixed Effects	*Y*	*Y*	*Y*	*Y*
Control variables	*N*	*N*	*N*	*Y*
N AC-years	14,322	14,322	14,322	14,319
R-squared	0.2	0.4	0.4	0.4
adj. R-squared	0.2	0.4	0.4	0.4

Note: OLS models with year and state fixed effects. Control variables included in model 4 are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC.

*$significant\ at\ p < .05$; **$p < .01$; ***$p < .001$

Table C.2: Vote Share for the Incumbent Party Given Rainfall Deviation and Rerunning Patterns of Politicians (1986–2007), by alignment with the party of the Chief Minister and Prime Minister

	MLA aligned with CM	MLA not aligned with CM	MLA aligned with PM	MLA not aligned with PM
Lagged Rainfall Deviation	−0.2	−1.4***	−1.3**	−0.4
	(0.3)	(0.4)	(0.5)	(0.3)
Incumbent did not rerun	−6.9***	−12.9***	−6.9***	−10.5***
	(0.7)	(1.0)	(1.2)	(0.6)
Incumbent switched party	−18.9***	−30.6***	−16.1***	−28.2***
	(0.9)	(1.0)	(1.9)	(0.7)
Rainfall × did not rerun	1.3**	−0.0	2.0*	0.4
	(0.5)	(0.7)	(0.8)	(0.4)
Rainfall × switched party	1.2	1.7*	2.1	1.7***
	(0.7)	(0.7)	(1.3)	(0.5)
Constant	34.9***	40.1***	42.1***	37.1***
	(2.5)	(1.6)	(2.4)	(1.8)
State, year, AC Random Effects	*Y*	*Y*	*Y*	*Y*
Control variables	*Y*	*Y*	*Y*	*Y*
N AC-years	7,430	6,102	2,606	11,713

Note: Linear multilevel regression models, where constituency-year observations are nested in states, constituencies and years. The few incumbent parties that did not run for re-election are included and assigned 0% of the vote. Control variables are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC.
* significant at $p < .05$; ** $p < .01$; *** $p < .001$

Table C.3: Vote Share for the Incumbent Party Given Rainfall Deviation, India 1986–2007, controlling for year and election number

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Controlling for year			Controlling for election number		
Lagged Rainfall Deviation	0.0	−0.1	−0.7**	−0.0	1.6	−0.7**
	(0.2)	(0.5)	(0.2)	(0.2)	(1.0)	(0.2)
Year	0.2	0.1	0.1			
	(0.2)	(0.2)	(0.2)			
Rainfall × year		0.0				
		(0.0)				
Incumbent did not rerun			−10.3***			−10.3***
			(0.6)			(0.6)
Incumbent switched party			−27.9***			−27.9***
			(0.7)			(0.7)
Rainfall × did not rerun			0.9*			0.9*
			(0.4)			(0.4)
Rainfall × switched			2.1***			2.1***
			(0.5)			(0.5)
Election number				2.6***	3.0***	1.1
				(0.7)	(0.7)	(0.6)
Rainfall × Election number					−0.3	
					(0.2)	
Constant	28.7***	28.9***	37.4***	15.9***	14.0**	32.1***
	(2.9)	(3.0)	(2.4)	(4.3)	(4.5)	(3.5)
State, year, AC Random Eff.	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
Control variables	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
N AC-years	14,319	14,319	14,319	14,319	14,319	14,319

Note: Linear multilevel regression models, where constituency-year observations are nested in states, constituencies and years. The few incumbent parties that did not run for re-election are included and assigned 0% of the vote. Control variables are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC. The year variable is set to start in 1986, the election number gives the number of elections held since the 1970s delimitation.

* significant at $p < .05$; ** $p < .01$; *** $p < .001$

Table C.4: Vote Share for the Incumbent Party Given Rainfall Deviation and Rerunning Patterns of Politicians (1986–2007), sub-divided into ACs with and without INC incumbents

	Vote share INC incumbent	Vote share INC incumbent	Vote share Not INC incumb.	Vote share Not INC incumb.
Lagged rainfall deviation	1.0*	−0.4	−0.0	−0.6*
	(0.4)	(0.5)	(0.3)	(0.3)
Incumbent did not rerun		−11.0***		−9.9***
		(1.0)		(0.7)
Incumbent switched party		−34.3***		−24.9***
		(1.2)		(0.8)
Rainfall × did not rerun		0.2		1.0*
		(0.7)		(0.5)
Rainfall × switched party		3.0***		1.3*
		(0.9)		(0.6)
Constant	31.7***	41.3***	28.9***	36.5***
	(2.1)	(1.5)	(2.3)	(1.8)
State, year, AC Random Eff.	*Y*	*Y*	*Y*	*Y*
Control variables	*N*	*Y*	*N*	*Y*
N AC-years	4,005	4,005	10,317	10,314

Note: Linear multilevel regression models, where constituency-year observations are nested in states, constituencies and years. The few incumbent parties that did not run for re-election are included and assigned 0% of the vote. Control variables included in models 2 and 4 are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC.
* significant at $p < .05$; ** $p < .01$; *** $p < .001$

Table C.5: Vote Share for the Incumbent Party Given Rainfall Deviation and Rerunning Patterns of Politicians (1986–2007), by share of agricultural laborers in the population

	0th - 25th percentile	25th -50th percentile	50th - 75th percentile	75th - 100th percentile
Lagged Rainfall Deviation	−0.4	−0.3	−0.9	−1.0*
	(0.6)	(0.6)	(0.5)	(0.5)
Incumbent did not rerun	−9.7***	−9.0***	−11.6***	−9.1***
	(1.2)	(1.3)	(1.2)	(1.1)
Incumbent switched party	−28.2***	−24.5***	−28.1***	−27.2***
	(1.4)	(1.5)	(1.4)	(1.4)
Rainfall × did not rerun	1.0	−0.5	2.2**	0.2
	(0.9)	(1.0)	(0.8)	(0.8)
Rainfall × switched party	2.3*	0.2	1.9	3.0**
	(1.0)	(1.1)	(1.0)	(1.0)
Constant	37.5***	35.8***	37.5***	39.2***
	(1.5)	(1.8)	(2.2)	(3.0)
State, year, AC Random Eff.	*Y*	*Y*	*Y*	*Y*
Control variables	*Y*	*Y*	*Y*	*Y*
N AC-years	3,162	3,103	3,105	3,225

Note: Multilevel regression models, where constituency-year observations are nested in states, constituencies and years. Control variables are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC. The proportion of agricultural laborers in the constituency in 1986 is imputed based on AC-level estimates of the census variable "agricultural labourers" from 1971 and 2001, taken from Bhavnani and Jensenius (2015).
$^{*}significant\ at\ p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table C.6: Vote Share for the Incumbent Party Given Rainfall Deviation and Rerunning Patterns of Politicians (1986–2007), sub-divided by type of industry (75th-100th percentile)

	Cultivators	Agricultural laborers	Livestock, forestry, fishing	Mining & quarrying	Manufacture processing, services	Construction	Trade & commerce	Transport, storage, comm.	Other services
Lagged Rainfall Deviation	-1.2^{**}	-1.0^{*}	-1.9^{***}	-1.3^{**}	-1.4^{**}	-1.4^{**}	-1.0	-1.1^{*}	-1.6^{**}
	(0.5)	(0.4)	(0.4)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Incumbent did not rerun	-8.4^{***}	-8.9^{***}	-12.2^{***}	-10.3^{***}	-10.3^{***}	-9.5^{***}	-8.5^{***}	-9.0^{***}	-9.2^{***}
	(1.2)	(1.1)	(1.1)	(1.2)	(1.1)	(1.2)	(1.2)	(1.2)	(1.2)
Incumbent switched party	-27.0^{***}	-28.5^{***}	-34.2^{***}	-30.4^{***}	-33.4^{***}	-32.5^{***}	-30.3^{***}	-31.4^{***}	-30.3^{***}
	(1.3)	(1.4)	(1.4)	(1.5)	(1.5)	(1.7)	(1.6)	(1.6)	(1.6)
Rainfall × did not rerun	1.3	-0.1	1.4	0.4	0.2	-0.1	-0.6	-0.9	-1.1
	(0.8)	(0.8)	(0.7)	(0.8)	(0.8)	(0.9)	(0.9)	(0.9)	(0.8)
Rainfall × switched party	2.7^{**}	2.4^{*}	2.6^{*}	0.9	3.8^{***}	2.4^{*}	0.2	0.7	0.3
	(0.9)	(1.0)	(1.0)	(1.1)	(1.1)	(1.2)	(1.2)	(1.2)	(1.2)
Constant	34.8^{***}	39.3^{***}	41.7^{***}	40.5^{***}	41.8^{***}	42.1^{***}	40.6^{***}	41.0^{***}	42.1^{***}
	(1.7)	(2.0)	(1.7)	(1.5)	(1.3)	(1.6)	(1.4)	(1.4)	(1.3)
State, Year, and AC REs	Y	Y	Y	Y	Y	Y	Y	Y	Y
Control variables	Y	Y	Y	Y	Y	Y	Y	Y	Y
N AC-years	3,354	3,418	3,518	3,381	3,345	3,263	3,207	3,231	3,276

Note: Multilevel regression models, where constituency-year observations are nested in states, constituencies and years. Control variables are vote share for the incumbent party in the previous election, the number of electors in the constituency in the same election, the electoral turnout and margin of victory in the previous election, and the reservation status of the AC. Each column runs the model for the subset of the data in the 75th-100th percentile of the given industry according to the Census of India 1971. AC-level estimates of the census variables are taken from Bhavnani and Jensenius (2015).

$^{*}significant\ at\ p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table C.7: The effect of *Lagged Rainfall Deviation* in contexts with more or less electoral switching

	High-switching state	Low-switching state	High-switching constituency	Low-switching constituency
Lagged Rainfall Deviation	1.2^{***}	-1.6^{***}	0.9^{*}	-0.6^{*}
	(0.4)	(0.3)	(0.4)	(0.3)
Constant	26.1^{***}	38.0^{***}	22.2^{***}	36.4^{***}
	(2.3)	(4.7)	(1.8)	(1.7)
State, Year, and AC Random Effects	*Y*	*Y*	*Y*	*Y*
Control variables	*Y*	*Y*	*Y*	*Y*
N AC-years	7,232	7,087	4,557	9,762

Note: Multilevel regression models, where constituency-year observations are nested in states, constituencies and years. States are split into whether they have an above or below median rate of incumbents switching to another party at the state level. Constituencies are split into whether they are above or at the median of *Electoral Switching* (0).
$^{*}significant\ at\ p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table C.8: Propensity to Vote for the Incumbent Party, NES 2004, Full Coding of Rerunning Variable

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Personal economy		National economy		Rainfall deviation	
Economy	-0.26^{***}	-0.35^{***}	-0.33^{***}	-0.31^{***}	0.04	-0.11
	(0.05)	(0.07)	(0.04)	(0.05)	(0.05)	(0.07)
Incumbent reruns for other party		$-0.43^{\dagger}$		-0.72^{**}		-0.60
		(0.22)		(0.27)		(0.43)
Incumbent does not rerun		$-0.20^{\dagger}$		$-0.25^{\dagger}$		-0.48^{**}
		(0.12)		(0.13)		(0.18)
Economy × Other Party		0.09		0.44^{*}		0.14
		(0.24)		(0.21)		(0.28)
Economy × Not Rerunning		$0.21^{\dagger}$		0.12		0.25^{*}
		(0.12)		(0.10)		(0.12)
Constant	-0.65^{***}	-1.54^{***}	-0.46^{***}	-1.40^{***}	-0.75^{***}	-1.45^{***}
	(0.05)	(0.08)	(0.06)	(0.09)	(0.08)	(0.12)
N respondents	17640	17640	17640	17640	17640	17640
N PCs	361	361	361	361	361	361
Control variables	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*

Note: Multilevel logit models. The individual level data are nested in PCs. Control variables: Vote for the incumbent in the previous election, woman/man, Muslim/SC/ST/other and Urban/Rural.
† significant at $p < .1$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Appendix D Note on related research

In a related paper on the determinants of electoral party switching (Jensenius and Suryanarayan 2019), we argue that electoral switching in the Indian states to a large extent arises from differences in the organizational capacity (internal institutionalization) of parties and the strength of their ties to specific social groups (external institutionalization). Whereas parties and candidates may have incentives to change alliances opportunistically in response to short-term factors such as a weak economy, we should observe more such behavior in contexts of weaker party system institutionalization. We first show that electoral switching is more prevalent in Indian state assembly constituencies with weakly organized parties—a constituency-level measure of the internal institutionalization of parties based on the work of Chhibber, Jensenius and Suryanarayan (2014). Second, using data on land inequality and educational inequality from the Indian 1971 Census, we show that electoral switching was more prevalent in places with weaker social cleavages—arguably places conducive to weaker links between parties and particular social groups. We find that places with higher land inequality and places with higher educational inequality (a proxy for caste-based inequality in India) had weaker electoral party switching.

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