

**Does Good Economics Make for Good Politics?  
Evidence from Indian States<sup>1</sup>**

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**Abstract:** The proposition that voters reward incumbent governments that perform well economically is considered received wisdom in many democracies. We examine this hypothesis in India, a developing democracy where scholars have found limited evidence of economic voting. Using a unique state-level panel dataset covering the years 1980–2012, we find that there is no relationship between growth and electoral performance in the aggregate. However, since 2000, there do appear to be increasing electoral returns to governments that deliver higher rates of economic growth. The positive returns to growth are much larger than those to improved law and order, while inflation has no clear impact. The results suggest a significant shift in Indian voter behavior.

## Introduction

The proposition that good economics makes for good politics is considered received wisdom in many democratic countries.<sup>2</sup> In the words of one scholar, “the notion that voters judge democratic governments by how well they manage the economy has taken on the ring of an incontrovertible social scientific fact.”<sup>3</sup> Indeed, many scholars, policy analysts, and commentators live by American political strategist James Carville’s now famous maxim from the 1992 U.S. presidential campaign: “It’s the economy, stupid!” The idea that politicians rise or fall on the basis of whether the economy performed well under their watch has a natural appeal because it fits neatly with prevailing notions of democratic accountability and retrospective voting.<sup>4</sup>

In light of this conventional wisdom, it is striking that the large social science literature that has examined the claim that voters reward incumbent governments that preside over periods of positive economic performance is decidedly mixed.<sup>5</sup> Some studies find a positive association<sup>6</sup>, others find no relationship<sup>7</sup>, while several recent studies detect contingent effects of the economy on election outcomes.<sup>8</sup>

This study aims to test the boundaries of this argument in a context where many scholars have perceived that the economy has historically played second fiddle to other factors: India. For the majority of the almost seven decades following India’s Independence in 1947, studies of electoral behavior in the world’s largest democracy have found that voters in India typically prioritize factors other than good economic performance when evaluating incumbent governments.<sup>9</sup> These factors include caste or religious concerns<sup>10</sup>; patronage and clientelism<sup>11</sup>; or fiscal transfers.<sup>12</sup>

By reputation, Indian voters are notorious for throwing governments out for reasons that remain elusive, even to veteran scholars. A former Congress Union minister once lamented to a journalist that the expectations of an average Indian voter are excessively high and “frighteningly” unrealistic, thus making it difficult for incumbents to match expectations.<sup>13</sup> Unlike many advanced democracies, such as the United States, where incumbents possess a distinct advantage when it comes to reelection,<sup>14</sup> India’s fickle voters have traditionally been at least as likely to vote governments out as they are to retain them.<sup>15</sup> This has led some scholars to speak of the adverse “costs of ruling.”<sup>16</sup>

Nevertheless, some observers of Indian politics embrace the belief that, with the passage of time, good economics does increasingly make for good politics. The economist Arvind Subramanian summed up this belief in the growing meritocratic nature of Indian elections, writing in 2009: “Since independence, many Indian voters have reflexively ejected politicians from office even when they had compiled decent records in power...Recently, though, Indian voters have started to reward good performance, especially in state-level politics.”<sup>17</sup>

At least four pieces of evidence support such assessments. First, in recent years India has seen several ruling parties come to power at the state level that both campaign on a developmental plank and manage to construct “rainbow coalitions” of disparate caste and religious communities in support of their vision. For instance, in 2010, voters in Bihar, a state long known for the salience of identity-based divisions, re-elected Chief Minister Nitish Kumar on the back of wide-ranging support from the

upper, intermediate, and lower castes as well as Muslims.<sup>18</sup> In his first term, Kumar delivered impressive governance and development gains in a state thought to be in short supply of both. Reflecting on his government's 2010 reelection, Kumar stated that Bihar was witnessing a "*nayi kahani*" (new beginning) in which "voters had to choose between progress or antiquated politics...the people whose strategies were based on caste and religion have been left disappointed."<sup>19</sup>

Similarly, the Samajwadi Party (SP) won an outright majority in the Uttar Pradesh assembly in 2012 on a platform that spurned parochial identity-based divisions in favor of programmatic policies to improve development in another of India's poorest states. Analysts argued that this electoral platform helped the SP win substantial votes from communities outside of its core base and, indeed, along the entire caste hierarchy.<sup>20</sup> These electoral developments suggest that perhaps narrow, parochial interests are gradually giving way to more programmatic agendas, even in ethnically polarized states.

Second, both voters and analysts view national electoral trends in increasingly economic terms as well. The Congress Party-led United Progressive Alliance's (UPA's) resounding reelection in 2009 having delivered the fastest growth rates India has experienced in its recorded history was taken as evidence of the growing importance of economic factors in elections. Yet just as economic factors may have catapulted the Congress to victory in 2009, scholars similarly believe they were responsible for its undoing in 2014. Indeed, the final two years of the UPA's term in office coincided with India's slowest rates of economic growth in a quarter century—a key driver of the abysmal electoral performance of the Congress Party in the 2014 general election.<sup>21</sup> In

contrast, the opposition Bharatiya Janata Party (BJP) exploited the souring economy to tout the economic track record its prime ministerial candidate, Narendra Modi, the former chief minister of Gujarat. Survey evidence from the 2014 National Election Study conducted by the Centre for the Study of Developing Societies found that voters identified economic issues as the most important determinants of how they behaved on Election Day.<sup>22</sup>

A third piece of evidence in support of the notion that voters in India are rewarding incumbents who deliver better economic outcomes comes from a recent empirical analysis of the 2009 general elections. In that study, Poonam Gupta and Arvind Panagariya uncover a significant, positive association between economic growth and the electoral prospects of incumbent candidates.<sup>23</sup> The higher the rate of growth in a given state, the authors find, the larger the proportion of the ruling party's candidates who win their seats to Parliament.

Finally, there is some evidence that reflexive anti-incumbency is on the decline, opening space for consideration of economic performance. At the state-level, figures compiled by two recent studies indicate that state governments are now reelected with increasing frequency, at least when compared to the 1990s.<sup>24</sup> The 1990s were an especially tumultuous decade in Indian politics as the number of parties contesting Indian elections rose dramatically thanks to the regionalization and fragmentation of the political system, amply demonstrated by uninterrupted coalition government in Delhi between 1989 and 2014.<sup>25</sup> According to Yogendra Yadav and Suhas Palshikar, the reelection rate of state governments steadily increased between 1989 and 2008, from a

low of 23 percent between 1989-1998 to 38 percent in 1999-2003, and up to 54 percent between 2004-2008.<sup>26</sup> More recently, Sanjay Kumar, Shreyas Sardesai and Pranav Gupta conducted a more exhaustive analysis, compiling data on 320 state elections held between 1951 and 2012.<sup>27</sup> These authors find that incumbent retention was very high in the initial years of the Indian republic, hovering around 85 percent between 1951 and 1966. This figure steadily declined and, in the 1990s, hit a low of 27 percent. Since 1999, reelection rates have steadily increased. This reversal of the anti-incumbency trend, combined with the emergence of a growing number of state chief ministers highly touted for their “good governance” credentials and subsequently richly rewarded by voters in their respective states, further suggests a shift toward economic voting.<sup>28</sup>

This paper aims to revisit the relationship between economic and political performance in the Indian context by focusing on the electoral returns to economic growth among India’s 18 major states from 1980 to 2012. Our inquiry has two overarching aims. First, we empirically examine the relationship between state-level rates of economic growth and the electoral fortunes of incumbent state governments. This is a test of what Mark Kayser calls the “canonical view” of the economic vote, or the idea that voters evaluate incumbent governments by retrospectively assessing their performing on broad economic aggregates (what the literature refers to as “sociotropic” voting).<sup>29</sup> Second, we incorporate a temporal dimension into our analysis in order to assess for the first time the emerging belief that Indian voters are *increasingly* rewarding governments who deliver higher economic growth. Thus, we add a new variable to the literature on contingent economic voting: time. Given the

aforementioned arguments about the “changing” nature of the Indian voter, we disaggregate the relationship between economics and politics by time period (in our case, decade).

Our analysis yields several interesting findings. First, there is no overall relationship between growth and electoral performance when we look at the entirety of the three decades under study. However, when compared to prior decades, in the 2000s there is marked evidence of positive electoral returns to governments that deliver higher growth. Finally, the positive electoral returns to growth are larger than those to improved law and order, while inflation has no significant association with electoral performance. Taken together, our findings support those arguing that the Indian voter is weighing broad economic factors more heavily than in the past.

The remainder of this analysis is organized as follows. In the next section, we briefly add depth to our review of the literature on economic voting. We then describe the data used in our analysis. We follow with some descriptive findings about the relationship between economic growth and electoral performance before turning to more systematic regression analysis, including several checks to ensure the robustness of our findings. We then expand our inquiry by considering alternative performance metrics, namely law and order and inflation. We conclude with some thoughts on the implications of our findings and some ideas for further research.

## **Literature review**

The literature exploring the linkages between economics and elections is vast, with one review stating that, as of 2000, there were more than 300 articles and books on the topic from a diverse array of countries.<sup>30</sup> Although there is a widespread belief that good economics and good politics proceed hand in hand, the empirical evidence is appreciably more nuanced.

### *Scholarly consensus?*

Much of the literature on economics and elections derives its theoretical foundations from early works on rational economic voting authored by scholars such as Anthony Downs and later by John Ferejohn and Morris Fiorina.<sup>31</sup> Many of the seminal empirical contributions to this literature date back to the 1960s and 1970s and primarily address elections in the United States. For instance, in a widely cited study, Ray Fair found that incumbent American presidents enjoy significant electoral advantages after periods of relative economic success.<sup>32</sup> Since then, scholars have built on the insights drawn from the American experience to test hypotheses related to economic voting in other advanced as well as developing or transitional democracies. The evidence from advanced industrial democracies generally supports the economic voting hypothesis.<sup>33</sup> In the words of one study examining individual-level data from 10 Western European democracies, quite simply: “voters reward governments for good economic performance and punish them for bad.”<sup>34</sup>

Thanks to repeated findings of this kind, the notion that good economics makes for good politics has become “part of scholarly and popular lore”; the only problem,



notes Christopher Anderson, is that this claim is “only intermittently borne out by the facts.”<sup>35</sup> For starters, the evidence from advanced democracies is not unambiguously positive.<sup>36</sup> Furthermore, the relatively few studies that have explored the economic voting hypothesis in the developing world have revealed very mixed results.<sup>37</sup> But here too, contradictory findings abound. An analysis of 12 Latin American countries carried out by Michael Lewis-Beck and Maria Celeste Ratto found “highly significant, even strong, sociotropic retrospective economic effects on the incumbent vote.”<sup>38</sup> Capping the confusion, an empirical examination of 350 election campaigns in 74 democracies finds a significant positive effect of growth on reelection in new democracies and poorer old democracies, but not in advanced industrial democracies.<sup>39</sup>

### *Contradictory evidence*

There are many possible reasons why consistent findings have proven elusive in the academic literature. For starters, there is no agreement among scholars on what the “correct” metrics are, either for measuring electoral performance or the state of the economy.<sup>40</sup> Regarding the former, some scholars have looked at binary election outcomes (reelection or not) while others have measured changes in vote or seat share. Regarding the economy, there is a debate in the literature as to whether voters respond to aggregate measures of economic performance (“sociotropic voting”) or their own personal economic conditions (“pocketbook voting”).<sup>41</sup> Even within these two schools of thought, there are debates about the best metrics to use.<sup>42</sup>

In addition, scholars have documented numerous obstacles hindering voters from holding politicians to account on the basis of the economy. Christopher Anderson divides these constraints into two categories: individual and institutional.<sup>43</sup> At the individual level, voters might face informational barriers or cognitive challenges—i.e., isolating and processing “objective” information on the economy.<sup>44</sup> Research also shows that voters often filter identical information about the economy through their own partisan or personal biases.<sup>45</sup> At an institutional level, voters can struggle with assigning credit or blame for economic conditions due to the lack of clarity about which political actor or branch of government is chiefly responsible.<sup>46</sup> Furthermore, several studies suggest that voters frequently impose steep punishment on leaders when economic growth starts to falter under their care, but only modestly reward them for positive economic news.<sup>47</sup>

Although the existing literature on the highly contingent nature of economic voting does not explore this possibility, another potential source of contingency is time. That is, it is plausible that economic voting is not an intrinsic feature of democracies per se, but emerges over time only as and when certain facilitating conditions emerge. Although information might be one such factor, there could be several others such as political competition, structural economic conditions, or shifts in the salience of identity politics. Indeed, this is precisely the conjecture made by those who argue that Indian voters have only recently transitioned to a new equilibrium in which economics are given greater priority.

## *Studies of India*

When it comes to India, it is surprising how few studies of economic voting there have been given that the country is home to one-sixth of the world's population. One of the first empirical studies, to our knowledge, is a 2001 paper by Stuti Khemani.<sup>48</sup> Using data from 14 Indian states over the period 1960-1992, the author finds—contrary perhaps to the received wisdom on India—that voters in state elections reward incumbent parties for state-level economic growth (averaged over their entire term in office). More recently, Poonam Gupta and Arvind Panagariya find a significant, positive association between a state's economic growth and the electoral prospects of candidates from the ruling party of that state in the 2009 national-level parliamentary elections.<sup>49</sup> Specifically, the authors find that 85 percent of the incumbent party's candidates in “high-growth” states won reelection in 2009. In contrast, on average, those in “medium-growth” and “low-growth” states won only 52 and 40 percent of the seats they contested, respectively. However, neither Khemani's pooled analysis nor Gupta and Panagariya's cross-sectional examination consider the issue of temporal variation. This is something we model explicitly in the analyses below.

### **Data and methodology**

Our approach in this paper is to focus on economic growth and electoral performance at the state-level. We concentrate on the state-level for several reasons. First and most obvious, India is a federal parliamentary system comprised of 29 states and seven union territories.<sup>50</sup> States are further divided into assembly constituencies,

each governed by first-past-the-post, single-member district electoral rules. India's federal design allows us to exploit the tremendous variation on economic and political outcomes across states while holding institutional and electoral design features constant.<sup>51</sup> Second, under India's federal constitution, states are empowered with considerable authority to oversee a wide array of day-to-day matters of governance. Indeed, available survey evidence suggests that Indian voters look to the state, rather than to the national or local levels, when it comes to addressing most critical governance tasks.<sup>52</sup> Finally, there is an established body of research arguing that India's states are *the* primary venues for electoral contestation. Over time, national elections have become "derivative," while state elections are increasingly "principal."<sup>53</sup>

We draw our primary data in this study from two sources: election statistics compiled by the independent Election Commission of India (ECI) and data on economic growth assembled by the Reserve Bank of India (RBI). Our focus is on the 18 major states of India, which today account for roughly 93 percent of the country's population.

On election-related parameters, we create a dataset of all state elections taking place during this period using raw data provided by the ECI. For each state, we collect data on the party-wise breakdown of seats and votes in each state assembly election. We code the sitting incumbent party (or coalition) for each election using information gathered from secondary sources, including special election-related articles from *Economic and Political Weekly*, a leading Indian social science journal.<sup>54</sup> Where necessary, we supplement this with information from other sources on Indian elections.<sup>55</sup> Given the fragmented nature of India's coalition politics, in many instances it

is not immediately obvious which party or parties are considered to be “incumbents.” Indeed, in a small minority of cases, the incumbent was unidentifiable and we treat those observations as missing.<sup>56</sup> All told, our sample contains information on 128 state elections, of which we are unable to determine incumbency for five elections.<sup>57</sup>

### *Measuring electoral performance*

We are interested in three measures of electoral performance, our dependent variable. The simplest, but also the bluntest, is a binary indicator of whether the incumbent government was reelected (*reelect*). However, due to India’s winner-take-all electoral design, we also use two alternative indicators—changes in overall share of the valid vote (*vote share*) and the share of seats won in the state assembly (*seat share*) by the incumbent—as additional measures of electoral performance. These latter measures are better suited to gauging the mood of the electorate since ruling parties can suffer significant declines in votes or seats yet emerge victorious given the distortions induced by India’s winner-take-all electoral design.

Indeed, as **Figure 1** demonstrates, over half of state governments winning reelection suffer declines in vote share, seat share, or sometimes both. On the flip side, there are a handful of instances of governments failing to win reelection who actually increase vote share, seat share, or both. If governments uniformly won or lost reelection by gaining (or losing) seats and votes, all of our observations would be located in the top right or bottom left quadrants. Those areas are where the bulk of our observations are located, but there are plenty of exceptions.

For instance, one clear outlier in this regard is the incumbent Congress government in Haryana, which in the 2009 elections saw its seat share fall by 30 percent and its vote share decline by more than 7 percent. However, this decline did not prevent the party from forming the new government; although it fell seven seats short of an outright majority, Congress cobbled together a group of independent legislators to stake claim to the government. On the opposite end of the spectrum sits the 1987 election in Kerala, where the incumbent Congress-led United Democratic Front gained both votes and seats but managed to lose the election nevertheless on account of that state's complex coalition math.<sup>58</sup>

**[INSERT FIGURE 1 HERE]**

### *Measuring economic performance*

As far as the economy is concerned, this study relies on the “objective” measure of per capita Net State Domestic Product (NSDP) growth. Growth in NSDP is a useful summary indicator of the state of the macro-economy, and tracks with the general notion that Gross Domestic Product (GDP) is the “foremost” indicator for use in economic voting studies.<sup>59</sup> Furthermore, absent longitudinal household survey data on economic perceptions, it is difficult to explore economic evaluations of a more subjective nature.<sup>60</sup>

A second advantage of focusing on growth is that it allows for direct comparison with the results of Poonam Gupta and Arvind Panagariya.<sup>61</sup> Unlike their study, however,

we focus exclusively on the states and assemble panel data in order to take advantage of variation over time *within states*. Panel data is important because we are interested in testing the common claim that Indian voters are *increasingly* rewarding the growth performance of governments. Our choice of time period (1980-2012) and states (India's 18 major states) is largely a practical one: while economic data is readily available for earlier years, compiling and coding electoral data is more cumbersome.<sup>62</sup> Furthermore, several states came into existence in the middle of the period of under study, which makes it extremely difficult to construct historical data prior to their creation.

Finally, there is much more variation in electoral competition at the state-level in recent decades as the era of Congress Party dominance weakened considerably. Focusing on the past three decades provides us with a rich variation in political and economic characteristics.

To measure growth, we rely on time series data on per capita NSDP compiled by Utsav Kumar and Arvind Subramanian.<sup>63</sup> This dataset uses data from the RBI but standardizes the annual figures so that they are consistently measured using 2004-05 rupees and use a common 2004-05 base year. We bring their dataset up to the present with RBI figures and then calculate annual NSDP per capita growth figures.<sup>64</sup>

### *Taking time seriously*

In the analysis that follows, we divide the overall time period into three roughly decadal phases: the 1980s (1980-1989), 1990s (1990-1999), and 2000s (2000-2012). This is a crude yet straightforward method of segmenting the data to explore the changing

dynamics in the relationship between growth and electoral performance over time. The 1980s represent the pre-liberalization period when the Congress government at the center began to implement pro-business reforms that helped stimulate the economy and roll back the “Hindu rate of growth.”<sup>65</sup> While it was no longer the single dominant party at the state-level, as Yogendra Yadav has argued, Congress was “the natural party of governance, the pole around which electoral competition was organized.”<sup>66</sup>

During the late 1980s and early 1990s, India experienced structural breaks in its political and economic trajectories. In 1991, the Indian economy suffered a severe balance-of-payments crisis that paved the way for path-breaking liberal economic reforms.<sup>67</sup> The period also witnessed a strong anti-Congress wave appearing in north India and the rise of the non-Congress National Front government in Delhi, brought to power in 1989. At the state level, there was a tremendous churning underway in the social base of support for political parties with hitherto marginalized communities asserting themselves via new political configurations under the banner of caste empowerment.<sup>68</sup> It was during this post-1989 period that states became the principal venues for political contestation in India. Thus, India’s “Third Electoral System” was born in which state assemblies discovered a new autonomy and political competition took on a discernibly federal character.<sup>69</sup>

The economic reforms of 1991 helped to sustain high rates of economic growth, which surged to new heights during the boom years-between 2003 and 2011of the early 2000s.<sup>70</sup> Politically, states continued to dominate the national political



conversation and by 2004, the transformative potential of the third electoral system had peaked, though many of its attributes appear very much in place even today.<sup>71</sup>

### **Do voters reward growth?**

In this section we turn to the question at the heart of our inquiry: whether voters electorally reward incumbent state governments that deliver economic growth. We begin our analysis by examining broad patterns of electoral performance at the state level as well as variation in growth rates. Next we examine results from a series of regressions in which we estimate the effect of economics on elections using a pooled sample. We conclude this section by conducting analyses in which we allow the impact of growth on incumbent performance to vary by decade.

#### *Broad patterns of performance at the state level*

**Figure 2a** looks at overall reelection rates during the study period. In all, just 35 percent of state governments are re-elected over the entire sample period. In other words, six out of 10 state governments are voted out when they stand for reelection. When we disaggregate the data by time period, we see significant variation in reelection rates (**Figure 2b**). In the 1980s, 45 percent of state governments won reelection. This number dropped precipitously in the 1990s to 21 percent. Between 2000 and 2012, the reelection rate rebounded; roughly 43 percent of state governments were re-elected during these years. These figures track the findings of two recent studies, which are described above.<sup>72</sup>

**[INSERT FIGURE 2a HERE]**

**[INSERT FIGURE 2b HERE]**

We see a similar picture if we move beyond a binary measure of reelection and focus instead on the change in vote and seat shares obtained by the incumbent state government. In the pooled sample, the median incumbent government suffers a 4.9 percentage point decline in vote share and 21 percentage point decline in overall seat share when facing reelection. Again, we see interesting variation when we disaggregate by decade. In the 1980s, the median incumbent party seeking reelection suffered a 4.5 percentage point decline in vote share and a 14.3 percentage point decline in seat share. Both of these declines increased in size during the 1990s only to shrink in the 2000s. However, between 2000 and 2012, the median incumbent state government still experienced a decline in vote and seat share (by 3.3 and 17.2 percentage points, respectively). This is true even if we restrict our attention to state governments that won reelection. Of the 18 state governments winning reelection since 2000, they have on average seen their vote and seat shares decline by 1.6 and 3.6 percentage points, respectively.

Returning to the simple, binary reelection measure, there is interesting state-level variation as well. For instance, Tamil Nadu, Kerala, and Himachal Pradesh represent one extreme where state politics are consistently marked by anti-incumbency. In stark contrast, in the state of West Bengal, the Left Front proved

electorally dominant for more than three decades, from 1977 to 2011. Gujarat, under the BJP, is another example (still ongoing) where the electorate has repeatedly rewarded the incumbent state government in recent elections.

When it comes to the economy, there is an unmistakable increase in average growth rates over time, as one would expect (**Figure 3**). For the 1980s, the mean per capita growth rate averaged over a government's tenure was 1.34 percent (standard deviation: 2.99). This more than doubled in the 1990s to 3.51 percent (standard deviation: 2.61) and grew even further in the 2000s to 4.64 percent (standard deviation of 2.75). Yet as the plot shows, there is a significant degree of variation in growth rates, even within the same time period.

**[INSERT FIGURE 3 HERE]**

#### *Pooled analysis*

Turning to the relationship between economics and elections, we first examine this association by looking at a series of bivariate correlations between each of our three measures of electoral performance and the growth of per capita NSDP, averaged over the government's tenure in office (**Figure 4**).<sup>73</sup> In the pooled sample, there is little evidence of any relationship between electoral performance and growth. There does appear to be a slight positive association between the growth rate and changes in vote share, but the relationship is not statistically significant. Conversely, there is a negative

association between the binary reelection variable and growth performance, but this too is insignificant.

**[INSERT FIGURE 4 HERE]**

Our next step is to examine the relationship in a multivariate regression context.

We estimate a series of regressions using the following specification:

$$Y_{it} = \alpha_i + \gamma_t + \beta_0 + \beta_1 X_{it} + Growth_{it} + \epsilon_{it}$$

Recall, our unit of analysis is the state government's term in office—we have data on 123 total terms (dropping the five government terms for which we cannot determine incumbency).<sup>74</sup> Our outcome of interest is electoral performance, measured either in simple binary terms (win/lose reelection) or by the change in vote/seat share. We include a state fixed effects term,  $\alpha_i$ , to account for time invariant characteristics of states (i.e., we are interested in estimating the relationship between growth and electoral performance after taking into account differences between states in terms of their initial conditions). In addition, we control for time trends by including indicator variables,  $\gamma_t$ , for the 1980s and 2000s (using the 1990s as the reference category). This will account for temporal shocks commonly felt by all states in India. However, we also include controls for possible confounding variables to capture the effect of time-varying characteristics.<sup>75</sup> We discuss these variables below. Our primary variable of interest, of

course, is the per capita growth rate averaged over the entirety of the government's tenure. We estimate all models using Ordinary Least Squares with robust standard errors, relying on a linear probability model when the outcome is binary in nature.<sup>76</sup>

We begin with a baseline specification that includes state fixed effects and controls for the time trend. As we saw in the bivariate correlations above, the regression results in **Table 1** (Columns 1-3) show that there is almost no relationship between growth and electoral performance in the aggregate sample, irrespective of the outcome variable employed. We next introduce a control for per capita net state domestic product (NSDP) to control for a state's level of income. We believe it is important to include the level of overall economic development, in addition to the rate of economic growth, to the extent voter behavior in rich versus poor states might differ. As Columns 4-6 show, there is a slightly negative relationship between growth and electoral outcomes, but the effect is statistically insignificant.

We estimate a final series of regressions, adding a vector of political control variables. For instance, we control for the alliance/party affiliation of the incumbent to account for differences in partisan preferences. Because political coalitions in India are typically fluid and this, in turn, might impact the ability of voters to assign credit (or blame) for government performance, we control for whether incumbent government is a coalition.<sup>77</sup> We also control for whether the year of election coincides with a national election and whether the state government is aligned with the central government to account for the possibility, as the literature suggests, that voters might filter their electoral decisions through the prism of national politics.<sup>78</sup> We also control for whether

President's Rule immediately precedes the election, which could make it more difficult for voters to determine the identity of the "incumbent" party or parties.<sup>79</sup> Finally, we control for the number of years that have elapsed since the previous election to account for "honeymoon" and "anti-incumbency" effects.<sup>80</sup> After controlling for these factors, in addition to the previous set of controls, the coefficient on the growth variable remains negative and statistically insignificant (Columns 7-9).

**[INSERT TABLE 1 HERE]**

*Is the economics-elections relationship changing?*

At this point, we explicitly model the temporal variation we expect to see in the data. That is, we explore whether there electoral returns to growth are changing over time—more specifically, whether there are increasing returns in the post-2000 period, as scholars have hypothesized and a growing evidence base would suggest. Again, we start by plotting the bivariate correlations between growth and electoral performance, but this time disaggregating the relationship by time period (1980s, 1990s and 2000s). The results, contained in **Figure 5**, are stark. Beginning with changes in seat share (**Figure 5a**), there is a slightly negative relationship between electoral performance and growth in the 1980s: state governments producing faster rates of economic growth tended to lose seats when it came time for reelection, despite the higher level of economic success incumbents generally enjoyed during that period. The linear best fit line is actually difficult to determine given the numerous outliers discernable toward the

bottom of the figure; these are instances where governments were badly punished by the electorate across the board (seemingly irrespective of growth).<sup>81</sup> This negative relationship actually intensified significantly in the 1990s, and then reversed in the 2000s—showing a *positive* correlation. However, none of these bivariate relationships are significant at conventional levels.

Next we look at the relationship between growth and the change in vote share (**Figure 5b**). Vote share is a finer gauge of the electorate's mood because the translation of votes to seats is highly dependent on the vagaries of India's first-past-the-post electoral design.<sup>82</sup> For instance, a party may capture 40 percent of the vote share in a state but if that vote is spread too thinly across constituencies it will not translate into a proportional share of seats in the state assembly. The patterns we saw using changes in seat share are largely reproduced when we examine changes in vote share, with one small difference. We see a modest, positive association between growth and the change in seat share in the 1980s (although, again, it is insignificant), but this becomes negative and significant in the 1990s ( $p < .05$ ). However, in the 2000s, we see a positive and significant correlation ( $p < .05$ ). Finally, we explore the relationship between growth and elections using the binary indicator of reelection. The results reaffirm, quite starkly, the overall pattern: a weak association in the 1980s, a negative correlation in the 1990s ( $p < .10$ ), and increasing electoral returns to growth in the 2000s ( $p < .10$ ) (**Figure 5c**).

**[INSERT FIGURE 5 HERE]**

These graphical depictions are merely bivariate correlations; they do not control for differences between states or over time. To account for these factors, we return to a regression context and systematically test for differences. We adopt the baseline specification from the previous pooled analysis, with state fixed effects and decadal indicator variables, but now include an interaction between growth and the decadal indicator variables. In other words, we explicitly allow for the relationship between growth and electoral success to vary by decade. In **Table 2**, we see that the coefficient on the interaction term in the 2000s is positively and strongly related to our measures of electoral performance. This relationship holds across models and even after we control for various confounding factors.

**[INSERT TABLE 2 HERE]**

These effects intensify in substantive terms when we control for per capita income (Columns 4-6) and the full set of political control variables (Columns 7-9). In order to assess the substantive significance of these results, one needs to calculate both the direct and indirect effects of the interaction. We do this by calculating the marginal effects of a change in growth on electoral performance (**Figure 6**), holding continuous control variables at their mean value and binary ones at the modal value.<sup>83</sup> The dark line represents the size of the effect and the dotted lines are the 95 percent confidence intervals. The effect is significant and positive with 95 percent confidence when the



confidence intervals do not overlap with zero, denoted here by the horizontal line at zero.

**[INSERT FIGURE 6 HERE]**

As depicted in **Figure 6**, a one percentage point increase in a state's growth rate is associated with a 5.3 percentage point decline in seat share during the 1990s but a 3.3 percentage point *increase* in the share of seats in the 2000s ( $p < .10$ ). There continues to be a strongly negative association between growth and vote share changes in the 1990s ( $p < .01$ ) but only a modestly positive, but insignificant, growth effect on vote share in the 2000s). However, there is a significant, positive relationship between growth and overall reelection prospects: a one percentage point increase in a state's growth rate is associated with a 7.6 percent increase in the likelihood of a government being re-elected the 2000s ( $p < .01$ ). A marginal growth increase continues to have no effect in the 1980s and a negative one in the 1990s ( $p < .01$ ). Thus, across all three measures of electoral performance, the positive electoral returns to economic growth do appear to be a recent phenomenon. We can graphically depict the marginal effects in a slightly different way to demonstrate that the positive electoral effects of growth in the post-2000 period hold for different values of economic growth. **Figure 7** illustrates that as growth increases, the positive effects on electoral outcomes are unmistakable for a range of growth values across all three outcome variables.

**[INSERT FIGURE 6 HERE]**

**[INSERT FIGURE 7 HERE]**

### *Control variables*

With respect to the control variables, a few patterns emerge worth mentioning. First, per capita income is negatively associated with reelection, though this effect is statistically insignificant. Broadly, there are no major differences in voter behavior based on the state's income level. Second, relative to administrations led by regional parties, Congress, BJP and Left-led governments perform more poorly when up for reelection. These differences are statistically significant when looking at changes in seat share, although of mixed significance when looking at other election indicators. Whether a ruling administration is comprised of a coalition of parties or not seems to have little impact on electoral prospects. When President's Rule immediately precedes an election, the prospects for ruling parties greatly decline; this is not surprising because the central government typically invokes Article 356 when there has been some sort of political crisis or governance breakdown in the states. Finally, when a state ruling party is allied with the party (or parties) in power in Delhi, the incumbent state ruling party typically fares better during reelection (insofar as changes to votes and seats are concerned). There is no effect of the control variable capturing the years since the previous election, but there are some signs that when state and national elections are held concurrently, state incumbent parties stand to benefit (particularly with regard to the binary reelection variable).

### *A new pattern*

To sum up, there is no evidence of an overall relationship between growth and electoral performance when we look at the aggregate time period from 1980 to 2012. This pooled analysis, however, overlooks the dynamic nature of economic voting in India. Once we allow the relationship between economics and elections to vary by time period, we find clear evidence of increasing and significant electoral returns to higher growth in the 2000s. These effects are unique to the 2000s; growth has no positive electoral returns in the 1980s and often quite negative impacts on incumbent performance in the 1990s. Specifically, when we calculate the marginal effects of an extra unit of growth on electoral outcomes, we find evidence of a positive association between growth and two out of three measures of electoral performance, namely reelection and the share of seats won by the incumbent party/coalition. There is a positive, significant association between higher growth and changes in vote share, although the effect is not statistically significant. These findings are robust to state fixed effects (which control for unobserved variation across states), controls for a decadal time trend, and a wide variety of control variables. To be clear, our results do not suggest that economic success makes reelection a lock—far from it. The positive effects we find are, in absolute terms, relatively modest. Nevertheless, the fact that voters no longer appear to be punishing incumbents for growth by *reducing* their seat and vote share represents an important shift.

### **Robustness**

In this section, we conduct a number of tests to check the robustness of our core result. These include accounting for the endogenous nature of election timing as well as possible measurement error in our growth variable. We also address the hypothesis that voters react to economic performance in the year immediately prior to the election and concerns related to reverse causation.

### *Election timing*

One potential weakness of the analyses presented thus far relates to the nature of electoral timing. Typically, unscheduled elections occur when a government coalition falls apart, a government loses a confidence vote, or the government decides that conditions are propitious to exact electoral gains by holding an early vote. In all three instances, the timing of elections is endogenous: when an election is actually held could itself be correlated with the state of the economy. In our sample, roughly 30 percent of elections are unscheduled. To address this, we estimate a series of regressions in which we restrict our attention to only scheduled elections (i.e., those instances when elections took place according to a pre-determined, or exogenous, schedule). For ease of interpretation, we report the marginal effects in **Table 3**. There are positive and significant electoral returns to increased growth in the post-2000 era, when using either the seats or binary reelection measure. We find no such effects for the period prior to the 2000s and we also fail to find any significant impact on vote share for all three periods.

**[INSERT TABLE 3 HERE]**

### *Alternative measures of growth performance*

As a second test, we experiment with two alternative measurement strategies. First, we measure the growth rate in absolute, rather than per capita, terms. The results obtained are in line with our earlier findings (**Appendix Table 4**). A marginal increase in growth is associated with a seat share increase of 3.2 percentage points ( $p < .01$ ), 1.1 percentage point increase in vote share ( $p < .10$ ), and an 8 percent boost in reelection probabilities ( $p < .01$ ). In addition, we also create a relative growth variable, which subtracts the all-India median growth rate from the state's own growth rate. The resulting variable says something about how fast a given state is growing relative to the general trend in India at any given time. We do not find evidence (see **Appendix Table 5**) that relative growth rates matter for the electorate. There is no statistically significant relationship between how well a state is growing in relative terms and incumbent performance. The one exception is the 1990s, when better relative growth is once again highly negatively associated with electoral performance.

### *Pre-election year effects*

Finally, some scholars of economic voting—operating on the theory that voters have short memories and therefore vote only based on the most recently available information—argue that the state of the economy in the immediate preelection period rather than the entirety of a government's tenure is what really matters for voters.<sup>84</sup> However, the existing scholarship on India is somewhat mixed on this score. For instance, Gupta and Panagariya found few differences in the positive relationship

between growth and incumbency when comparing growth in the two years prior to the election versus the average over the entire term.<sup>85</sup> Khemani, on the other hand, found modest evidence of the opposite effect in state elections; her results indicated that the effect of economic growth on electoral performance may be marginally more significant over the entire term rather than during the year preceding the election.<sup>86</sup> Our results, found in **Appendix Table 6**, indicate that short-run growth just prior to the election is associated with positive electoral returns though, in statistical terms, it does not outweigh the incumbent's aggregate growth performance averaged over its full tenure.

#### *Reverse causation*

A final concern related to our analyses involves reverse causation. For instance, what if a government's electoral popularity has an impact on economic outcomes, rather than the other way around? From a statistical standpoint, refuting this alternative causal logic would require an instrumental variables approach or a natural experiment. Without resorting to such techniques, there are several reasons we believe this concern is not a major one. For starters, electoral popularity usually refers to a relatively fixed moment in time. Even great success in a given election is unlikely to sustain economic performance for the subsequent five years. Second, our results still hold after restricting the sample to scheduled elections. With unscheduled elections, it is possible that some omitted third factor (say, a major corruption scandal) could both affect electoral performance and economic growth. This is less of a concern when elections are held on their regularly scheduled timetable. Finally, in addition to including state fixed effects

(which allows us to leverage the variation *within* states over time) we also control for a host of political control variables that could influence economics and elections. Our results remain strong even after subjecting them to these additional constraints. Taken together, these facts enhance our confidence in the robustness and directionality of our results.

### **Alternative performance indicators**

Thus far, our analysis finds consistent evidence in favor of the hypothesis that there are, since the dawn of the 2000s, increasing electoral returns to faster economic growth. The next step in our inquiry is to examine the impact of two other indicators of “performance,” namely inflation and law and order.

#### *Inflation*

Inflation is an example of an economic indicator other than growth that could have resonance with voters, given its relation to consumer prices and purchasing power of households. High inflation is often thought of as a tax on the poor, and thus it might hold special relevance for India given its very large population living below the poverty line. With regards to inflation, the findings in the retrospective voting literature are mixed, lending tentative support for the idea that voters may punish inflation, depending on the context. Two widely cited studies find some evidence that inflation negatively impacts reelection prospects in developed democracies.<sup>87</sup>

In spite of inflation's effect on pocketbooks, it would not be surprising if Indian voters do not respond strongly to changes in the inflation rate when voting in state elections as there is little in practical terms that state governments can do to manage inflation. Inflation is a subject largely within the purview of the central government, which oversees monetary policy. In line with this argument, Khemani's study finds that national officials in India can be held responsible for inflation leading up to the election, but local officials are not systematically affected.

Notwithstanding this fact, there is a social science literature that suggests voters often punish politicians for shocks over which they have no control. In a well-known study, Christopher Achen and Larry Bartels find that U.S. voters often punish their leaders electorally for droughts, floods and even shark attacks that occur while they are at the helm.<sup>88</sup> A related article by Shawn Cole, Andrew Healy and Eric Werker reports similar findings from the Indian case.<sup>89</sup>

Ideally, we would like to utilize state-wise Consumer Price Inflation (CPI) data for the period under study. Unfortunately, this data is not available to us in a consistent series for the entire period. Hence, we use data on the state domestic product (SDP) deflator, from which we can construct a measure of the average change in inflation during a government's tenure in office.<sup>90</sup> We then interact this variable with each of the decade dummies. **Table 4** presents the regression results. After calculating the marginal effects (not shown here), we find no statistically significant association between changes in state-level inflation and electoral performance, in aggregate or by decade.



[INSERT TABLE 4 HERE]

### *Law and order*

Finally, we explore the relationship between the law and order situation in a state and electoral performance. Given the well-documented examples of insecurity in many parts of India ranging from Maoist violence to routinized criminal activity, voters might be sensitive to a government's ability to maintain law and order. Under the constitution, public safety is a state subject so there is *prima facie* reason to believe that state governments have policy tools at their disposal to control the extent of crime in the state. Unfortunately, crime data collected by governments is notoriously problematic given the incentives to underreport. One measure that scholars believe is relatively reliable is the murder rate, since even governments (especially democratically elected ones) find it difficult to hide dead bodies.<sup>91</sup> We employ annual murder data collected by the National Crime Records Bureau (NCRB) and compiled by the Center for Systemic Peace until 2007.<sup>92</sup> We refer to recent volumes of the NCRB's annual *Crime in India* reports to bring this data series up to the present. We then take the annual murder rate per every one million citizens in a given state, which we can use to create (as with growth and inflation) an average indicator for each government term. In our regressions, we compare the average murder rate of a government to the murder rate under the prior government. This measure captures the change in the murder rate within states from one government to the next. Finally, we interact this variable with the decade dummies.

**Table 5** displays the regression results. In the pooled analysis, we find inconsistent evidence that the change in the per capita murder rate has an impact on elections. The coefficients are positive but very small, indicating that a higher murder rate is associated with improved performance; with the exception of the model using vote share, the effects are not significant. When we interact the murder rate with period dummies, we find some evidence that—compared to the 1980s and 1990s—voters in the 2000s reward state governments that manage to lower the murder rate. Calculating marginal effects (not shown here), we find a one-unit increase in the murder rate is linked with a 0.83 percent decline in seat share in the 2000s ( $p < .01$ ) and small *increases* in the previous decades. This is a statistically significant, though small (in substantive terms) effect. However, we do not find similar effects in the 2000s for the other two electoral outcomes. On the flip side, prior to the 2000s, in some specifications a rise in the murder rate is actually linked to a slight improvement in performance. Thus, the broad trend seems to be moving in a better direction, where voters appear to no longer reward underperformance on law and order.

**[INSERT TABLE 5]**

As an additional test, we evaluate the association between growth and electoral performance, controlling for inflation and the murder rate. The results (available on request) are in line with our general findings. To sum up, we find no relationship between inflation and election prospects and only modest evidence of a

negative connection between the murder rate and electoral performance in the 2000s. At least as far as the three “governance” variables under study here are concerned, growth seems to matter most for Indian voters in state elections.

## **Conclusion**

This paper finds support for the idea that Indian voter behavior—insofar as state elections are concerned—shifting significantly. When we review pooled data from the last three decades of state elections in India’s major states, we find no evidence of a statistically meaningful relationship between growth and electoral performance. At first glance, this seems to support the scholarly consensus that suggests that Indian voters typically focus on personal or parochial issues when deciding whom to vote for rather than broader issues of the economy. However, the picture changes when we look at the dynamic relationship between growth and elections; we find significant electoral returns to governments that deliver higher growth in the post-2000 period. Our results, therefore, lead us to conclude that the Indian voter is increasingly rewarding good economic performance, as a growing body of evidence seems to suggest. In other words, in the current era of Indian politics it appears that good economics can make for good politics.

The positive returns to growth we detect remain intact even after controlling for confounding variables and state fixed effects, restricting our attention to scheduled elections, and experimenting with different definitions of economic growth. Furthermore, the electoral rewards to growth appear to be larger than those to

improved law and order, while there is no impact of inflation on election outcomes. To the extent Indian voters have increasingly become “economic voters,” the vast literature on representation and democratic accountability suggests this is an overall net positive. As one recent review of economic voting stated: “The economic vote, in short, is the best hope for demonstrating that voters hold leaders accountable in democracies.”<sup>93</sup>

As researchers, we believe further investigation is needed in order to construct a definitive explanation for why incumbent state governments are being rewarded at the ballot box for higher growth rates in the last decade. However, we conclude our inquiry with some speculative thoughts on the reasons underlying this shift.

In our view, there are three likely explanations for the recent shift in Indian voter behavior; none of these are mutually exclusive. For starters, until the economic downturn marking the final years of the UPA-II government, virtually all Indian states grew faster than they had in either the 1980s or 1990s. Fewer than 10 percent of state government terms in the 1980s—and roughly one-third in the 1990s—witnessed better than five percent growth while over 50 percent of state administrations enjoyed such growth between 2000 and 2012. It is possible that this growth take-off has triggered what some have referred to as the “revolution in rising expectations,” or the transformational potential of rapid growth. The knock-on effects of rapid growth are likely to be so substantial for most, if not all, segments of society that the impact is likely to be qualitatively different from high or better-than-average growth rates.<sup>94</sup>

While the rate of growth has unquestionably quickened for all states, it is also possible that governments are doing a better job of ensuring that the effects of growth reach more segments of the population. In other words, perhaps states are not only delivering more growth in recent years but they are also delivering it “better” than they used to. Indeed, data released by the Planning Commission of India revealed that poverty declined dramatically between 2004–05 and 2011–12.<sup>95</sup> The percentage of persons living below the poverty line stood at 37.2 percent in the former period and came down to 21.9 percent by 2011–12. In roughly seven years, 138 million Indians were lifted out of poverty (following the Tendulkar methodology for calculating poverty).<sup>96</sup>

While this has intuitive appeal given the prevailing narrative of India’s economic reforms over the last twenty years, our data do not allow for an empirical test of this hypothesis. We believe that a better qualitative understanding of the nature of economic growth and how it has been distributed in Indian society would help illuminate the dynamic behavior of voters over the last thirty years.

A second potential driver of the shift in voter behavior is the stark increase in political competition over the past three decades. For instance, 55 parties contested India’s first general election in 1952, a number that fell to just 16 five years later by the time of the second general election. By 2014, the total number of parties contesting national elections stood at 464, an increase of 28 percent from 2009. At the same time, the effective number of parties gaining representation steadily grew while margins of victory plummeted.<sup>97</sup>

This increase in competition, we believe, may have contributed to a tighter link between vote choice and economic outcomes as voters today have a greater number of credible “exit” options. This, in turn, tracks with our consistent finding that electoral returns to economic growth are more pronounced when using the binary “reelect” and seat share variables rather than vote share. One potential interpretation of this disparity is that the effect of economic growth is felt most keenly in competitive elections, with the vote share numbers padded by constituencies where one party dominates no matter how well or poorly the incumbent performs. These observations lead us to believe the effect of growth on electoral outcomes is likely to be more pronounced in competitive elections. Testing this hypothesis will be a valuable addition to the work we have done here.

A final possibility is the increasing importance of the states to India’s overall governance. Over the past several decades, power has increasingly been decentralized in India’s federal system so that the states today exert much greater autonomy and control over the performance of the regional economy. This process was, of course, critically aided by the liberal economic reforms of the early 1990s. A greater awareness among voters of the state government’s role when it comes to the functioning of the local economy might be linked to the use of state-level growth as an evaluative criterion for incumbent performance. If voters do not believe that state politicians control their own economic fortunes, they will be less likely to hold state governments accountable for their growth performance. To the extent voters recognize the primacy of state politics, we expect to see them paying greater attention to state elections compared to

national elections. Indeed, some scholars have argued that, “the emergence of the state as the principal locus of political choice has meant that electoral participation at the state level is higher than the national level.”<sup>98</sup> Of course, as with all things in India, there is considerable variation across states (as well as over time). However, the turnout trends are suggestive of the idea that voters have a greater engagement with the politics at the state level—and that this engagement has increased over time.<sup>99</sup>

These three hypotheses underlying the shift toward economic voting—that states began experiencing rapid growth (and perhaps more widespread growth) in the decade of the 2000s; that political competition has increased; and that states are achieving new prominence with respect to the economy—are, by no means, mutually exclusive. Together, they suggest that Indian voters are responding to the structural changes that have spurred and attended their country’s economic rise over the last twenty years, even if they are not responding all at once.

Looking ahead, a number of questions remain to be answered. First, further research is needed to evaluate whether the existence of retrospective economic voting is linked to a decline in the salience of identity politics. For instance, is it the case that voters are increasingly evaluating governments according to their performance rather than questions of caste or religion? This remains an open question; it is possible, for instance, that new leaders continue to wield both good governance and identity politics, albeit in a more sophisticated combination.<sup>100</sup>

Second, one should not overlook the fact that even with the uptick in rewards for incumbents in recent years, reelection remains the exception rather than the rule. A

more nuanced understanding of the threshold conditions under which Indian voters are willing to consider reelecting a government would be a useful complement to these findings.

Finally, considering our findings that law and order outcomes appear to weigh on the minds of voters (albeit in a very modest fashion), it would be useful for researchers to examine the links between elections and additional measures performance of “good governance.” As sources of data about voter attitudes and behavior become increasingly available, social scientists should continue to think creatively about ways to apply that data to generate a better understanding about when and how voters take the performance of the government into account when at the ballot box.

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<sup>3</sup> Christopher J. Anderson, “The End of Economic Voting? Contingency Dilemmas and the Limits of Democratic Accountability,” *Annual Review of Political Science* Vol. 10 (2007), pp. 271–96.

<sup>4</sup> Anthony Downs, *An Economic Theory of Democracy* (New York: Harper and Row, 1957); Morris P. Fiorina, *Retrospective Voting in American National Elections* (New Haven: Yale University Press, 1981).

<sup>5</sup> Christopher J. Anderson, “The End of Economic Voting?”



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- <sup>11</sup> Philip Keefer and Stuti Khemani, "Why Do the Poor Receive Poor Services?" *Economic and Political Weekly*, Vol. 39, No. 9 (February 2004), pp. 935–43.
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- <sup>25</sup> Adam Ziegfeld, “Coalition Government and Party System Change: Explaining the Rise of Regional Political Parties in India,” *Comparative Politics* Vol. 45, No. 1 (October 2012), pp. 69–87.
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- <sup>27</sup> Sanjay Kumar, Shreyas Sardesai, and Pranav Gupta., “The Weakening of Electoral Anti-Incumbency.”
- <sup>28</sup> Ruchir Sharma, “The Rise of the Rest of India,” *Foreign Affairs* Vol. 92, No. 5 (September/October 2013). The celebrated regional politicians Sharma highlights run the gamut in terms of region, party and political

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base—be it the Congress Party’s Sheila Dixit in New Delhi; Narendra Modi of the Bharatiya Janata Party (BJP) in Gujarat; or Odisha’s Naveen Patnaik of the Biju Janata Dal (BJD).

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<sup>35</sup> Christopher J. Anderson, “The End of Economic Voting?”

<sup>36</sup> Mark A. Kayser, “The Elusive Economic Vote.”

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<sup>39</sup> Adi Brender and Allan Drazen, “How do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries,” *American Economic Review*, Vol. 98, No. 5 (December 2008), pp. 2203–20. Using data for 160 countries—including democracies and autocracies—

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between 1963 and 2001, a more recent paper by Burke finds that more rapid economic growth increases the short-run likelihood that national leaders will retain their positions. See Paul J Burke, "Economic Growth and Political Survival," Australian National University Working Paper No. 2011/06 (2011).

<sup>40</sup> Raymond M. Duch, "Comparative Studies of the Economy and the Vote," in Carles Boix & Susan Stokes eds., *The Oxford Handbook of Comparative Politics* (New York: Oxford University Press, 2009).

<sup>41</sup> Gregory B. Markus, "The Impact of Personal and National Economic Conditions on the Presidential Vote: A Pooled Cross-Sectional Analysis," *American Journal of Political Science* Vol. 32, No. 1 (February 1988), pp. 137–154.

<sup>42</sup> For instance, if voters care more about national economic performance than their own personal situation, do they care more about growth or inflation? And should scholars look at objective indicators concerning the state of the economy or the subjective impressions that voters have of economic performance? See Christopher J. Anderson, "The End of Economic Voting?"

<sup>43</sup> Christopher J. Anderson, "The End of Economic Voting?"

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<sup>48</sup> Khemani, "Decentralization and Accountability"

<sup>49</sup> Poonam Gupta and Arvind Panagariya. "Growth and Election Outcomes in a Developing Country." Using post-poll survey data, K.C. Suri finds that both sociotropic and pocketbook considerations significantly influenced voter behavior in India's 2009 parliamentary elections. See K.C. Suri, "The Economy and Voting in the 15th Lok Sabha Elections," *Economic and Political Weekly* Vol. 44, No. 39 (September 2009), pp. 64–70. Nirmala Ravishankar, using data from multiple national, post-poll surveys, finds that voters reward incumbents for good economic performance and punish them for outcomes perceived to be poor. Furthermore, she finds support for both sociotropic as well as pocketbook forms of economic voting. Nirmala Ravishankar, "The Cost of Ruling."

<sup>50</sup> In 2014, India added a twenty-ninth state, Telangana, which was carved out of the erstwhile state of Andhra Pradesh. Its emergence occurred after the period under study here, so we focus on undivided Andhra Pradesh.

<sup>51</sup> Of course, by focusing on the state-level, researchers can also greatly expand the number of observations they have to analyze. See Richard M. Snyder, "Scaling Down: The Subnational Comparative Method," *Studies in Comparative International Development* Vol. 36, No. 1 (Spring 2001), pp. 93-110.

<sup>52</sup> Pradeep Chhibber, Sandeep Shastri, and Richard Sisson, "Federal Arrangements and the Provision of Public Goods in India," *Asian Survey* Vol. 44, No. 3 (May/June 2004), pp. 339-52.

<sup>53</sup> Here we borrow the terminology of Yadav and Palshikar. See Yadav and Palshikar, "Between Fortuna and Virtu."

<sup>54</sup> David Butler, Ashok Lahiri, and Prannoy Roy, *India Decides: Elections 1952-1991* (New Delhi: Living Media India Limited, 1996); Sandeep Shastri K.C. Suri, and Yogendra Yadav, *Electoral Politics in Indian States: Lok Sabha Elections in 2004 and Beyond* (New Delhi: Oxford University Press, 2009).

<sup>55</sup> As an additional check, we cross-reference our data on incumbency with data from <http://www.worldstatesmen.org/>.

<sup>56</sup> In cases where the identity of the incumbent is indeterminate, we have excluded these observations from the dataset.

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<sup>57</sup> A list of elections included in the dataset can be found in Appendix Table 3

<sup>58</sup> “Kerala Says No to Communalisation of Politics,” *Economic and Political Weekly* Vol. 22, No. 14 (April 1987), p. 581.

<sup>59</sup> Michael S. Lewis-Beck, “Introduction,” in Helmut Norpoth, Michael S. Lewis-Beck, & Jean-Dominique Lafay, eds., *Economics and Politics: The Calculus of Support* (Ann Arbor: University of Michigan Press, 1991).

<sup>60</sup> K.C. Suri, “The Economy and Voting in the 15th Lok Sabha Elections.”

<sup>61</sup> Poonam Gupta and Arvind Panagariya, “Growth and Election Outcomes in a Developing Country.”

<sup>62</sup> We begin our analysis in 1980 because the first elections following the end of Emergency Rule (i.e., those occurring between 1977–1980) were so influenced by the dynamics of that period that the results are best treated as *sui generis*. Additionally, coding incumbency, seat, and vote share changes for those elections is very difficult, because the Emergency interrupted the tenure of the previous electoral victors.

<sup>63</sup> Utsav Kumar and Arvind Subramanian, “Growth in India’s States in the First Decade of the 21st Century: Four Facts,” *Economic and Political Weekly*, Vol. 47, No. 3 (January 2012), pp. 48-57.

<sup>64</sup> We are grateful to Utsav Kumar and Arvind Subramanian for sharing this data with us.

<sup>65</sup> Atul Kohli, *Poverty amid Plenty in the New India* (New York: Cambridge University Press, 2012); Dani Rodrik and Arvind Subramanian, “From ‘Hindu Growth’ to Productivity Surge: The Mystery of the Indian Growth Transition,” International Monetary Fund Working Paper (2004).

<sup>66</sup> Yogendra Yadav, “Electoral Politics in the Time of Change: India’s Third Electoral System,” *Economic and Political Weekly* Vol. 34, no. 34/35 (August 1999), pp. 2393-9.

<sup>67</sup> Arvind Panagariya, *India: The Emerging Giant* (New York: Oxford University Press, 2008).

<sup>68</sup> Christophe Jaffrelot, *India’s Silent Revolution: The Rise of the Low Castes in North Indian Politics* (New Delhi: Permanent Black, 2003).

<sup>69</sup> Yogendra Yadav, “Electoral Politics in the Time of Change: India’s Third Electoral System.” India’s first electoral system coincides with the period from the first general elections of 1952 until 1967, with the second picking up then and ending in 1989.

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<sup>70</sup> Utsav Kumar and Arvind Subramanian, “Growth in India’s States in the First Decade of the 21st Century: Four Facts.”

<sup>71</sup> Yogendra Yadav and Suhas Palshikar, “Between Fortuna and Virtù.” However, there is a debate (as yet unresolved) as to whether the 2014 national election, which saw the BJP gain an outright majority of seats in the Lok Sabha, constitutes the dawn of a new, “fourth” electoral system. See Milan Vaishnav and Danielle Smogard, “A New Era in Indian Politics?” Carnegie Endowment for International Peace (2014), <http://carnegieendowment.org/2014/06/10/new-era-in-indian-politics>. Access date: July 1, 2015.

<sup>72</sup> Yogendra Yadav and Suhas Palshikar, “Between Fortuna and Virtù”; Sanjay Kumar, Shreyas Sardesai, and Pranav Gupta, “The Weakening of Electoral Anti-Incumbency.”

<sup>73</sup> In calculating an administration’s average per capita growth rate, we omit the year of its election.

<sup>74</sup> The number of observations is often slightly less than 123 due to the fact that we were not always able to determine the precise changes in vote and seat shares from one election to the next (i.e., due to mid-term party splits or mergers). For instance, we have 119 and 120 observations when relying on the votes and seats outcome variables, respectively

<sup>75</sup> Details about our coding as well as summary statistics can be found in Appendix Tables 1 and 2.

<sup>76</sup> There is a debate in statistics about whether researchers should use a probit or logit model when working with binary dependent variables or a linear probability model (LPM). For ease of interpretation and analysis, we use a LPM in this paper when our outcome is dichotomous.

<sup>77</sup> G. Bingham Powell, Jr., *Elections as Instruments of Democracy: Majoritarian and Proportional Visions* (New Haven: Yale University Press, 2000).

<sup>78</sup> Nirmala Ravishankar, “The Cost of Ruling: Anti-Incumbency in Elections.”

<sup>79</sup> Under Article 356 of the Constitution, the President of India has the authority to place the state government under central government control. This typically happens when the state government is unable to dispense of its constitutional responsibilities because of a hung assembly or dissolution of a coalition. However, there are numerous instances of the center invoking President’s Rule for largely

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political reasons. See Anoop Sadanandan, "Patronage and Decentralization: The Politics of Poverty in India," *Comparative Politics* Vol. 44, No. 2 (January 2012), pp. 211-28.

<sup>80</sup> Nirmala Ravishankar, "The Cost of Ruling: Anti-Incumbency in Elections"; Yogendra Yadav and Suhas Palshikar, "Between Fortuna and Virtu."

<sup>81</sup> Many of these observations occurred in the early 1980s when Janata Party governments were roundly routed by the Congress as part of the pro-Indira wave that swept across India.

<sup>82</sup> Rein Taagepera and Matthew S. Shugart, *Seats and Votes: The Effects and Determinants of Electoral Systems* (New Haven: Yale University Press, 1991).

<sup>83</sup> This means that all binary controls are set to zero, with the exception of the "INC\_alliance" variable, which is set to one.

<sup>84</sup> Andrew J. Healy and Gabriel S. Lenz, "Substituting the End for the Whole: Why Voters Respond Primarily to the Election-Year Economy," *American Journal of Political Science* Vol. 58, No. 1 (January 2014), pp. 31-47.

<sup>85</sup> Poonam Gupta and Arvind Panagariya, "Growth and Election Outcomes in a Developing Country."

<sup>86</sup> However, Khemani did find that voters in national elections were more likely to respond to growth taking place the year prior to the election as opposed to over the government's tenure as a whole. See Stuti Khemani, "Decentralization and Accountability: Are Voters More Vigilant in Local than in National Elections?"

<sup>87</sup> Kaare Strom and Seymour Martin Lipset, "Macroeconomics and Macropolitics: The Electoral Performance of Democratic Governments"; Adi Brender and Allan Drazen, "How do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries." Note that for Brender and Drazen, this reverses the relationship between rewards for growth and development, where they found an effect in less developed countries but not in more advanced democracies.

<sup>88</sup> Christopher H. Achen and Larry M. Bartels, "Blind Retrospection: Why Shark Attacks are Bad for Democracy," Vanderbilt Center for the Study of Democratic Institutions Working Paper (2013).



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<sup>89</sup> Shawn Cole, Andrew Healy, and Eric Werker, “Do Voters Demand Responsive Governments? Evidence from Indian Disaster Relief” *Journal of Development Economics* Vol. 97, No. 2 (March 2012), pp. 167-81.

Using a panel dataset of Indian state elections, the authors find that voters often punish the incumbent party for adverse weather events that are beyond its control.

<sup>90</sup> We are grateful to Poonam Gupta for sharing this data with us.

<sup>91</sup> Steven I. Wilkinson, “Data and the Study of Indian Politics,” in Niraja Gopal Jayal and Pratap Bhanu Mehta, eds, *The Oxford Companion to Politics in India* (New Delhi: Oxford University Press, 2012).

<sup>92</sup> Center for Systemic Peace, *Dataset on Crime in India: Riots, Murders, and Dacoity, 1954–2006*,

<http://www.systemicpeace.org/inscrdata.html>. Access date: July 1, 2015.

<sup>93</sup> Mark A. Kayser, “The Elusive Economic Vote.”

<sup>94</sup> The economist Arvind Panagariya has explicitly invoked this line of thinking to explain the reasons certain states in India are exhibiting lower rates of anti-incumbency in recent years: “People at all levels, especially the poor, had discovered that unlike during the first four decades of independence, rapid improvement in the economic fortune was possible.” See Arvind Panagariya, “Is Anti-Incumbency Really Pass?” *Economic Times*, May 28, 2009.

<sup>95</sup> Planning Commission of India, “Press Note On Poverty Estimates, 2011-12,” July 22, 2013,

[http://planningcommission.nic.in/news/pre\\_pov2307.pdf](http://planningcommission.nic.in/news/pre_pov2307.pdf). Access date: July 23, 2013.

<sup>96</sup> Planning Commission of India, “Press Note On Poverty Estimates, 2011-12.”

<sup>97</sup> Milan Vaishnav and Danielle Smogard. 2014. “A New Era in Indian Politics?”

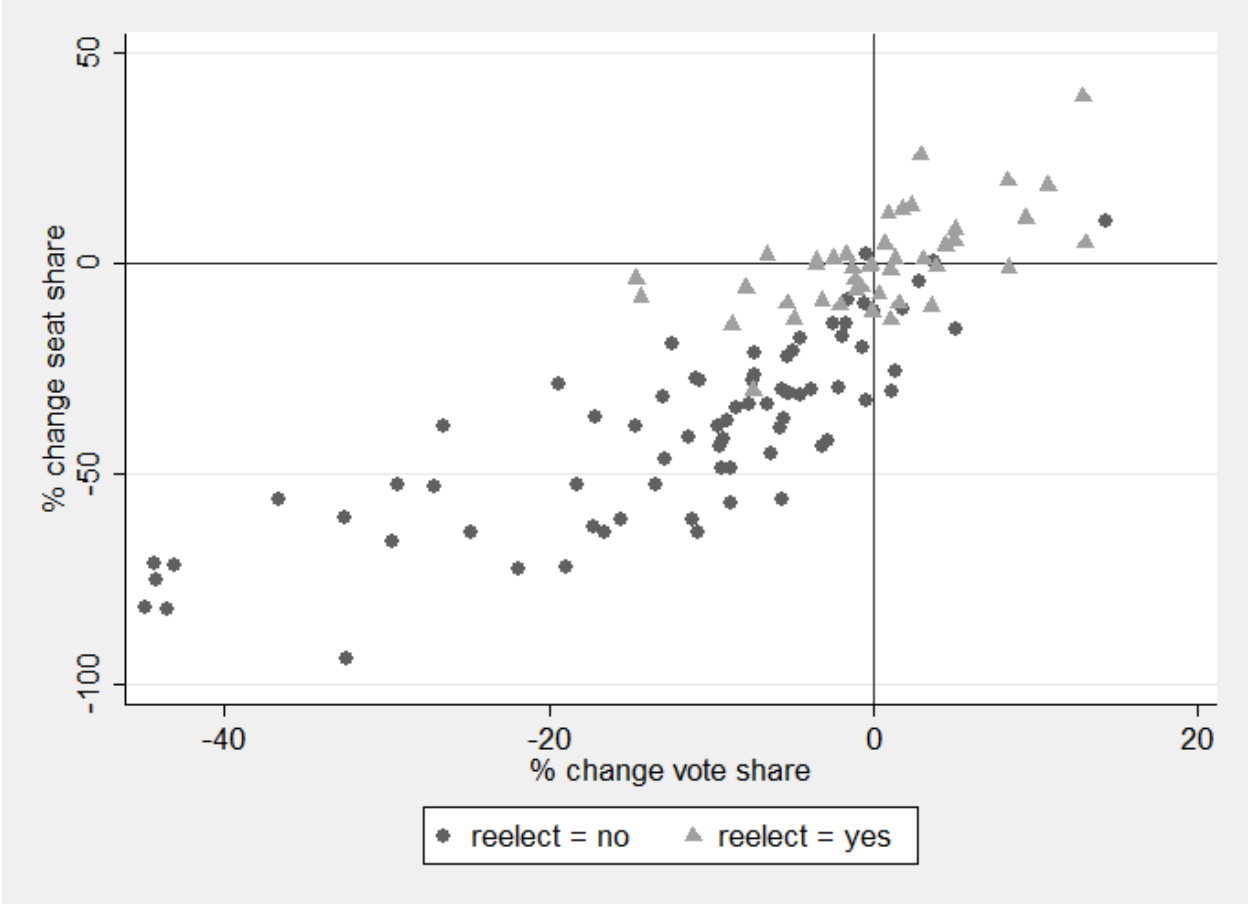
<sup>98</sup> Yogendra Yadav and Suhas Palshikar, “Between Fortuna and Virtue: Explaining the Congress’ Ambiguous Victory in 2009.”

<sup>99</sup> Milan Vaishnav, “Five Trends Shaping India’s Voting Landscape,” Carnegie Endowment for International Peace, 2013, <http://carnegieendowment.org/2013/09/10/five-trends-shaping-india-s-voting-landscape>.

Access date: July 1, 2015.

<sup>100</sup> Sanjay Kumar and Rakesh Ranjan, “Bihar: Development Matters,” *Economic and Political Weekly* Vol. 44, No. 39 (September-October 2009), pp. 141-4.

Figure 1: Comparative measures of electoral performance



Note: Each dot represents the incumbent party's performance in a discrete state election.

Figure 2a: Aggregate state-level reelection rates, 1980-2012

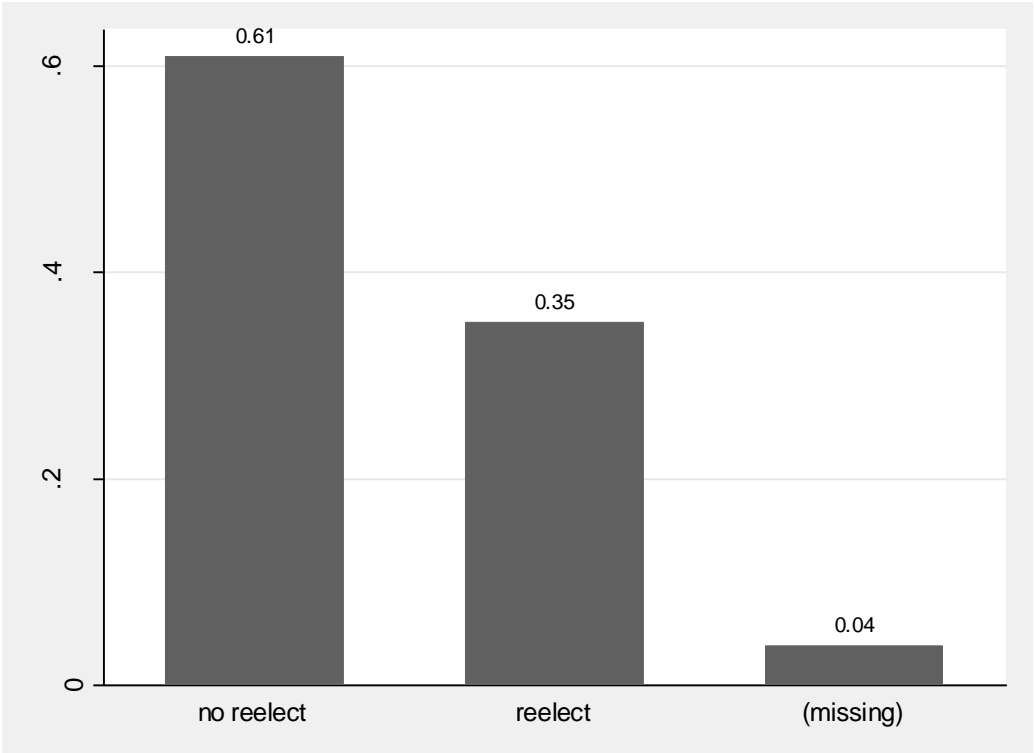


Figure 2b: Decadal state-level reelection rates, 1980-2012

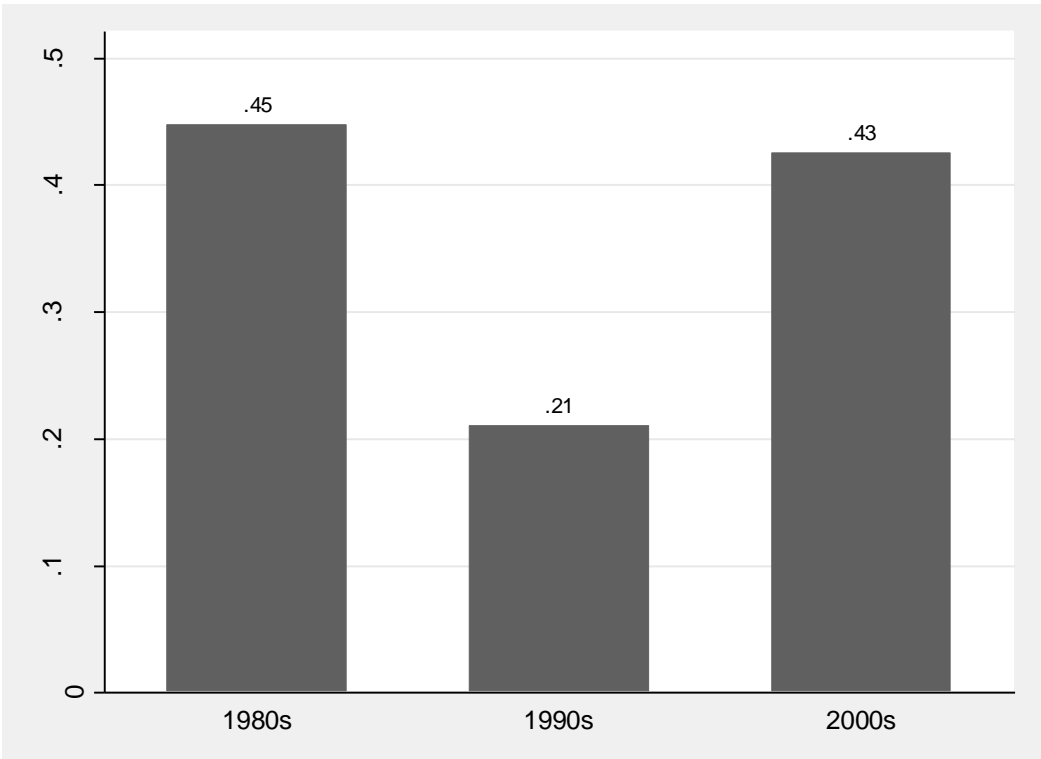
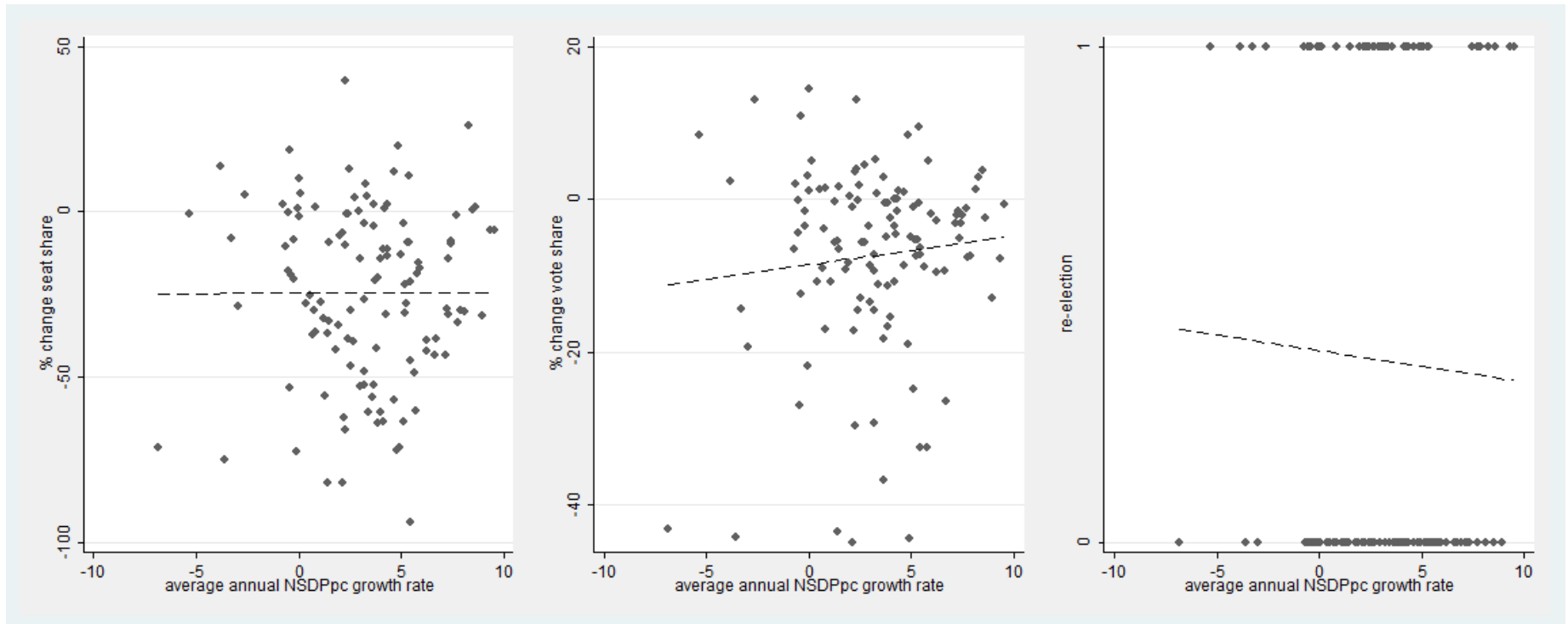


Figure 3: Decadal average per capita growth performance, 1980-2012



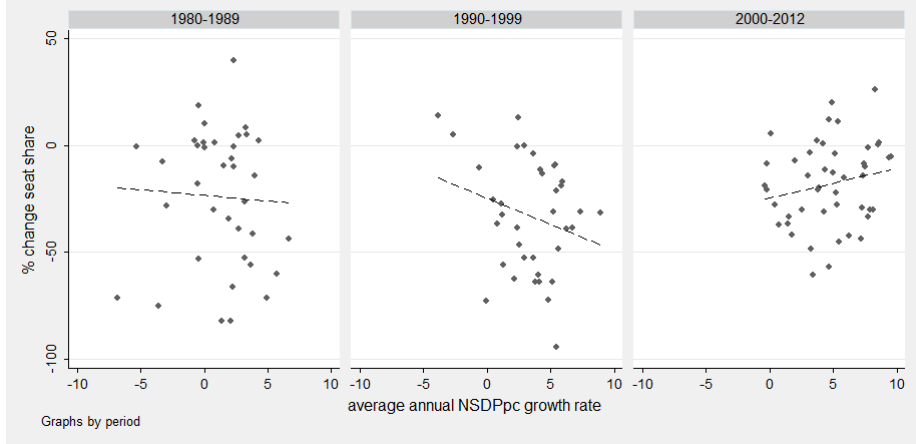
Note: Y-axis is the average annual per capita NSDP growth rate during a government's tenure.

Figure 4: Electoral returns to economic growth, 1980-2012

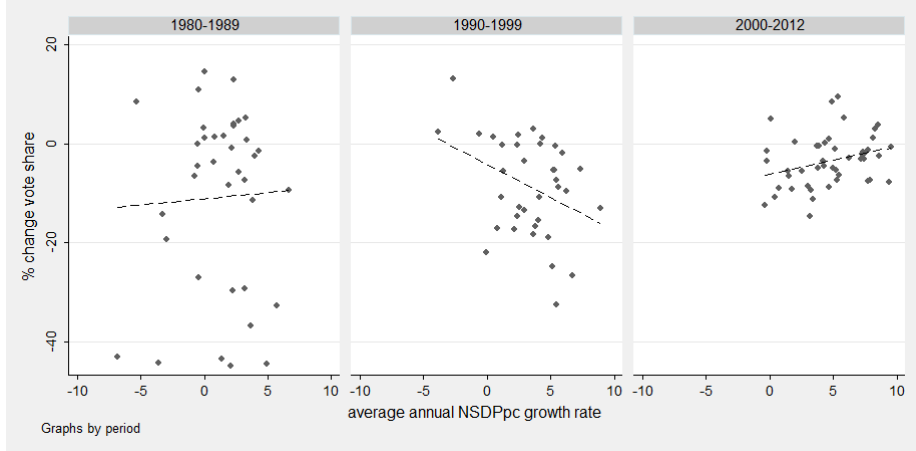


Note: X-axis is the average annual per capita NSDP growth rate during a government's tenure.

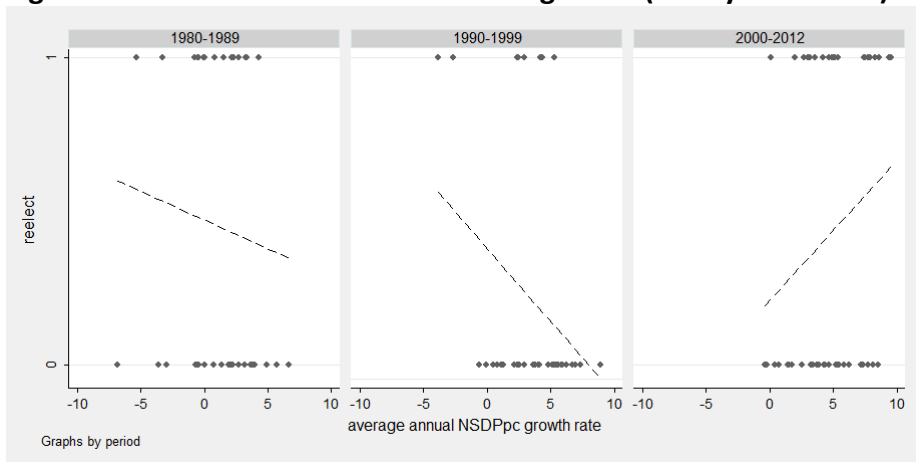
**Figure 5a: Electoral returns to economic growth (change in seat share)**



**Figure 5b: Electoral returns to economic growth (change in vote share)**

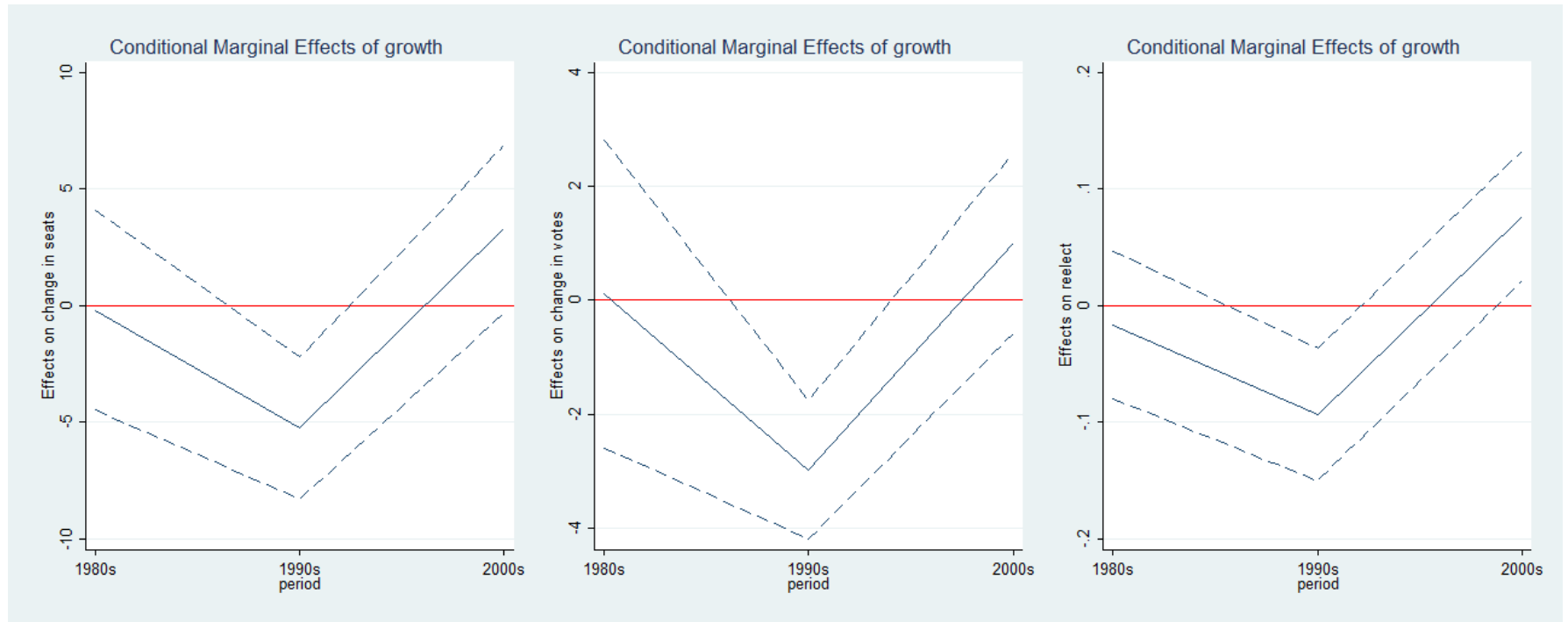


**Figure 5c: Electoral returns to economic growth (binary reelection)**



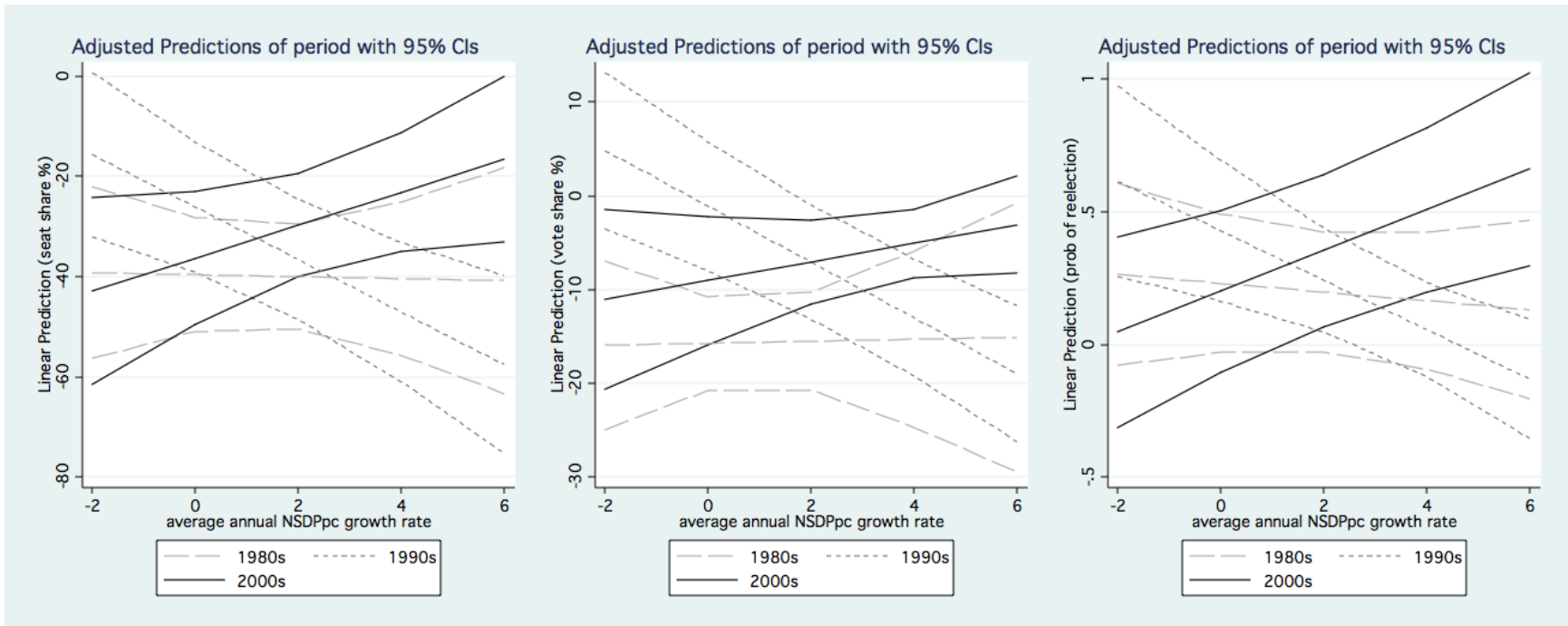
Note: X-axis is the average annual per capita NSDP growth rate during a government's tenure.

Figure 6: Marginal effects of growth on electoral performance, by decade



Note: The dashed lines represent 95 percent confidence intervals. When they do not include zero, the effects are statistically significant.

Figure 7: Electoral returns for range of growth values, by decade



Note: X-axis is the average annual per capita NSDP growth rate during a government's tenure.



**Table 1: Determinants of incumbent performance**

VARIABLES	(1) DV: change_seats	(2) DV: change_votes	(3) DV: reelect	(4) DV: change_seats	(5) DV: change_votes	(6) DV: reelect	(7) DV: change_seats	(8) DV: change_votes	(9) DV: reelect
log_nsdpc				7.91 [0.66]	3.38 [0.75]	0.15 [0.53]	10.33 [0.90]	7.20 [1.70]	0.11 [0.42]
INC_alliance							-10.27* [-2.01]	-3.82 [-1.28]	-0.09 [-0.88]
BJP_alliance							-12.92* [-2.06]	-7.16 [-1.69]	-0.14 [-1.03]
Left_alliance							-11.81** [-2.67]	-4.48* [-1.94]	-0.34** [-2.18]
incum_coalition							7.82 [0.90]	-0.19 [-0.04]	0.01 [0.05]
national_election							6.75 [1.12]	0.59 [0.21]	0.21* [2.04]
pr_precedes							-10.34** [-2.22]	-6.00** [-2.53]	-0.32** [-2.86]
aligned_hard							10.32* [1.99]	7.92*** [3.28]	0.03 [0.28]
years_since_last							-2.41 [-0.86]	-1.59 [-1.05]	-0.02 [-0.37]
growth_pc	0.00 [0.00]	-0.12 [-0.25]	-0.00 [-0.19]	-0.36 [-0.32]	-0.28 [-0.43]	-0.01 [-0.49]	-1.09 [-1.08]	-0.73 [-1.35]	-0.02 [-1.47]
1980s	10.48 [1.59]	-2.61 [-0.98]	0.27*** [3.89]	12.27* [1.78]	-1.86 [-0.72]	0.30*** [3.62]	10.04 [1.61]	-2.51 [-0.89]	0.24*** [2.96]
2000s	15.32** [2.82]	5.33* [1.98]	0.23* [2.10]	12.32** [2.17]	4.04 [1.62]	0.17 [1.14]	12.98* [1.74]	2.81 [0.79]	0.24 [1.52]
Observations	120	119	123	120	119	123	120	119	123
R-squared	0.07	0.07	0.07	0.07	0.08	0.07	0.18	0.21	0.17
Number of states	18	18	18	18	18	18	18	18	18

The figures in brackets are robust t-statistics. All models include state fixed effects. For period effects, 1990s is the reference category.

\* p < .10, \*\* p < .05, \*\*\* p < .01

**Table 2: Determinants of incumbent performance, with state-period interactions**

VARIABLES	(1) DV: change_seats	(2) DV: change_votes	(3) DV: reelect	(4) DV: change_seats	(5) DV: change_votes	(6) DV: reelect	(7) DV: change_seats	(8) DV: change_votes	(9) DV: reelect
log_nsdpc				-9.14 [-0.57]	-2.45 [-0.49]	-0.22 [-0.68]	-16.36 [-1.04]	-4.12 [-0.80]	-0.45 [-1.53]
INC_alliance							-11.22** [-2.59]	-4.54* [-1.82]	-0.12 [-1.02]
BJP_alliance							-12.24** [-2.35]	-6.40 [-1.62]	-0.14 [-1.12]
Left_alliance							-12.66*** [-3.19]	-5.42** [-2.90]	-0.35** [-2.25]
incum_coalition							7.23 [0.96]	-1.31 [-0.27]	-0.01 [-0.06]
national_election							10.07 [1.63]	2.04 [0.73]	0.27** [2.78]
pr_precedes							-18.77*** [-4.08]	-10.51*** [-4.12]	-0.45*** [-3.63]
aligned_hard							11.58*** [2.92]	8.51*** [3.83]	0.07 [0.66]
years_since_last							-2.41 [-1.03]	-1.64 [-1.27]	-0.02 [-0.45]
1980s	0.58 [0.07]	-8.78** [-2.21]	0.12 [0.91]	-2.07 [-0.21]	-9.49** [-2.31]	0.05 [0.30]	-13.47 [-1.48]	-14.62*** [-3.19]	-0.20 [-1.15]
2000s	-4.09 [-0.60]	-2.88 [-0.98]	-0.18 [-1.07]	-3.17 [-0.48]	-2.63 [-0.91]	-0.16 [-0.93]	-10.21 [-1.14]	-7.94* [-1.81]	-0.23 [-1.07]
growth_pc	-2.93** [-2.55]	-1.78*** [-3.47]	-0.05** [-2.22]	-2.76** [-2.41]	-1.73*** [-3.24]	-0.05* [-1.96]	-5.24*** [-3.38]	-2.97*** [-4.78]	-0.09*** [-3.21]
growth_pc*1980s	3.00 [1.20]	2.21 [1.40]	0.03 [0.68]	3.06 [1.21]	2.23 [1.41]	0.04 [0.70]	5.03** [2.24]	3.08** [2.27]	0.08 [1.57]
growth_pc*2000s	4.96*** [4.13]	2.24*** [4.26]	0.10*** [3.47]	5.57*** [3.05]	2.40*** [3.71]	0.11*** [3.33]	8.53*** [3.73]	3.97*** [4.30]	0.17*** [4.35]
Observations	120	119	123	120	119	123	120	119	123
R-squared	0.12	0.12	0.13	0.13	0.12	0.14	0.28	0.32	0.30

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Number of states	18	18	18	18	18	18	18	18	18
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The figures in brackets are robust t-statistics. All models include state fixed effects. For period effects, 1990s is the reference category.

\* p < .10, \*\* p < .05, \*\*\* p < .01

**Table 3: Marginal effects of growth on electoral performance for scheduled elections**

*a) Change in seat share*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	3.02	3.71	0.81	0.42
1990s	-0.41	2.45	-0.17	0.87
2000s	3.41	1.89	1.80	0.07

*b) Change in vote share*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	2.81	2.37	1.18	0.24
1990s	-1.35	1.15	-1.18	0.24
2000s	1.17	0.84	1.39	0.17

*c) Change in re-election probability*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	0.06	0.04	1.39	0.17
1990s	-0.05	0.06	-0.80	0.43
2000s	0.09	0.03	3.19	0.00

**Table 4: Effect of inflation on incumbent performance**

VARIABLES	(1) inflation DV: change_seats	(2) inflation DV: change_votes	(3) inflation DV: reelect	(4) inflation DV: change_seats	(5) inflation DV: change_votes	(6) inflation DV: reelect
log_nsdpc	3.02 [0.33]	2.42 [0.59]	-0.12 [-0.60]	0.41 [0.05]	0.81 [0.22]	-0.15 [-0.74]
years_since_last	-4.36 [-1.30]	-2.59 [-1.42]	-0.05 [-0.70]	-4.41 [-1.37]	-2.57 [-1.45]	-0.05 [-0.79]
INC_alliance	-9.80 [-1.71]	-3.10 [-0.99]	-0.03 [-0.27]	-8.68 [-1.29]	-2.86 [-0.79]	-0.00 [-0.02]
BJP_alliance	-11.18 [-1.65]	-5.88 [-1.35]	-0.10 [-0.70]	-9.02 [-1.05]	-5.15 [-1.02]	-0.05 [-0.30]
Left_alliance	-10.89** [-2.38]	-3.64 [-1.57]	-0.26 [-1.64]	-10.28** [-2.13]	-3.49 [-1.34]	-0.25 [-1.41]
incum_coalition	6.24 [0.71]	-0.86 [-0.21]	-0.01 [-0.06]	3.06 [0.31]	-3.32 [-0.71]	-0.06 [-0.28]
national_election	3.29 [0.59]	-0.94 [-0.34]	0.18* [1.89]	2.88 [0.55]	-1.46 [-0.57]	0.18* [1.95]
pr_precedes	-10.22 [-1.73]	-5.78* [-1.85]	-0.27* [-2.00]	-8.72 [-1.42]	-4.86 [-1.51]	-0.25* [-1.76]
aligned_hard	9.40* [1.75]	7.22** [2.84]	0.04 [0.37]	9.91* [1.91]	7.85*** [3.31]	0.04 [0.43]
1980s	10.89 [1.69]	-2.34 [-0.73]	0.21** [2.29]	21.30 [0.81]	-2.11 [-0.16]	0.51 [1.03]
2000s	8.32 [1.00]	0.63 [0.14]	0.38** [2.43]	-4.66 [-0.22]	-11.67 [-1.14]	0.22 [0.53]
avg_inflation	-1.78 [-1.23]	-0.86 [-1.30]	0.00 [0.16]	-1.86 [-0.80]	-1.34 [-1.19]	0.01 [0.26]
avg_inflation*1980s				-1.27 [-0.44]	-0.09 [-0.06]	-0.04 [-0.69]
avg_inflation*2000s				2.92 [0.98]	2.32 [1.69]	0.04 [0.72]
Observations	115	114	118	115	114	118

R-squared	0.21	0.23	0.16	0.23	0.26	0.18
Number of states	17	17	17	17	17	17

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The figures in brackets are robust t-statistics. All models include state fixed effects. For period effects, 1990s is the reference category.

\* p < .10, \*\* p < .05, \*\*\* p < .01

**Table 5: Effect of murder rate on incumbent performance**

VARIABLES	(1) murder DV: change_seats	(2) murder DV: change_votes	(3) murder DV: reelect	(4) murder DV: change_seats	(5) murder DV: change_votes	(6) murder DV: reelect
log_nsdpc	3.15 [0.37]	0.80 [0.22]	-0.06 [-0.38]	5.78 [0.75]	1.31 [0.37]	-0.06 [-0.35]
years_since_last	-1.45 [-0.58]	-0.91 [-0.65]	-0.01 [-0.24]	-3.07 [-1.62]	-1.33 [-1.02]	-0.03 [-0.58]
INC_alliance	-2.23 [-0.44]	0.39 [0.15]	0.03 [0.35]	-1.00 [-0.21]	0.97 [0.38]	0.06 [0.59]
BJP_alliance	6.64 [0.98]	4.09 [1.20]	0.07 [0.43]	8.43 [1.32]	4.97 [1.39]	0.11 [0.73]
Left_alliance	-4.67 [-1.00]	0.45 [0.17]	-0.28** [-2.14]	-2.68 [-0.64]	1.35 [0.55]	-0.24 [-1.62]
incum_coalition	5.96 [0.97]	-1.86 [-0.57]	0.02 [0.11]	6.07 [0.92]	-2.12 [-0.60]	0.03 [0.12]
national_election	10.15* [1.88]	1.78 [0.70]	0.26*** [2.95]	7.56 [1.28]	0.82 [0.31]	0.21* [2.01]
pr_precedes	-2.87 [-0.38]	-2.65 [-0.63]	-0.18 [-1.18]	-3.82 [-0.54]	-2.58 [-0.63]	-0.17 [-1.09]
aligned_hard	1.13 [0.29]	3.18 [1.51]	-0.11 [-1.04]	1.43 [0.36]	3.42 [1.60]	-0.10 [-0.86]
1980s	21.37*** [3.21]	3.11 [1.33]	0.37*** [3.17]	21.90*** [3.80]	3.06 [1.59]	0.36*** [3.31]
2000s	16.41** [2.87]	5.70* [1.98]	0.34** [2.45]	11.64** [2.12]	4.54 [1.61]	0.30** [2.31]
change_murder_pc	0.16 [1.21]	0.13** [2.28]	0.01 [1.22]	0.44** [2.21]	0.18** [2.31]	0.01 [1.00]
change_murder_pc*1980s				2.21 [1.67]	0.98 [1.49]	0.06** [2.58]
change_murder_pc*2000s				-1.27*** [-3.97]	-0.26* [-2.05]	-0.01 [-1.00]
Observations	108	107	110	108	107	110

R-squared	0.25	0.16	0.21	0.33	0.21	0.27
Number of states	18	18	18	18	18	18

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The figures in brackets are robust t-statistics. All models include state fixed effects. For period effects, 1990s is the reference category.

\* p < .10, \*\* p < .05, \*\*\* p < .01



# APPENDIX

## Appendix Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
change_seats_percent	120	-24.55	26.49	-94.02	39.71
change_votes_percent	119	-7.35	12.28	-44.90	14.40
reelect	123	0.37	0.48	0.00	1
growth_pc	128	3.28	3.08	-6.85	9.55
growth_absolute	128	5.15	3.09	-4.13	11.52
preelection_growth_pc	128	4.45	6.52	-17.39	20.07
relative_growth_pc	128	0.92	1.72	-6.38	8.40
avg_inflation	123	7.55	2.96	1.91	18.97
change_murder_pc	115	0.03	11.89	-66.42	64.31
log_nsdpc	128	9.83	0.53	8.89	11.42
years_since_election	128	4.56	1.21	1	10
INC_alliance	128	0.41	0.49	0	1
BJP_alliance	128	0.24	0.43	0	1
Left_alliance	128	0.08	0.27	0	1
incumb_coalition	125	0.23	0.42	0	1
national_election	128	0.45	0.50	0	1
pr_precedes	127	0.24	0.43	0	1
aligned_hard	125	0.42	0.49	0	1
scheduled_election	128	0.69	0.47	0	1

## Appendix Table 2: Coding details

**change\_seats\_percent:** Percentage change in share of seats won by incumbent.

**change\_votes\_percent:** Percentage change in share of votes won by incumbent.

**reelect:** Binary indicator of incumbent reelection.

**growth\_pc:** Average per capita growth rate during incumbent tenure, omitting year first elected.

**growth\_absolute:** Average growth rate during incumbent tenure, omitting year first elected.

**preelection\_growth:** Per capita growth rate in year prior to election year.

**relative\_growth\_pc:** Average per capita growth rate during incumbent tenure, omitting first year elected, minus the median growth rate of all states in the dataset during this period.

**avg\_inflation:** Average level of GDP deflator during incumbent tenure, omitting first year elected.

**change\_murder\_pc:** Change in per capita murder rate (normalized by 1 million population) from previous government to current government.

**log\_NSDP\_pc:** Natural log of per capita net state domestic product (NSDP).

**years\_since\_election:** Number of years since previous state election was held.

**INC\_alliance:** Binary indicator of incumbent government headed by Indian National Congress.

**BJP\_alliance:** Binary indicator of incumbent government headed by Bharatiya Janata Party.

**Left\_alliance:** Binary indicator of incumbent government headed by Communist Party of India or Communist Party of India (Marxist).

**Regional\_alliance:** Binary indicator of incumbent government headed by state party.

**incum\_coalition:** Binary indicator of incumbent government ruling as a coalition of parties.

**national\_election:** Binary indicator of national election year.

**pr\_precedes:** Binary indicator of whether President's Rule (Article 356) is operative prior to elections.

**aligned\_hard:** Binary indicator of whether incumbent is also a part of the national ruling alliance.

**scheduled\_election:** Binary indicator of election held as per pre-ordained schedule.

**Appendix Table 3: State elections in the dataset**

<b>State name</b>	<b>Election years</b>
Andhra Pradesh	1983, 1985, 1989, 1994, 1999, 2004, 2009
Assam	1983*, 1985, 1991, 1996, 2001, 2006, 2011
Bihar	1980, 1985, 1990, 1995, 2000, 2005 (Feb)*, 2005 (Oct), 2010
Delhi	1993*, 1998, 2003, 2008
Gujarat	1980, 1985, 1990, 1995, 1998, 2002, 2007, 2012
Haryana	1982, 1987, 1991, 1996, 2000, 2005, 2009
Himachal Pradesh	1982, 1985, 1990, 1993, 1998, 2003, 2007, 2012
Jammu and Kashmir	1983, 1987, 1996, 2002, 2008
Karnataka	1983, 1985, 1989, 1994, 1999, 2004, 2008
Kerala	1980, 1982, 1987, 1991, 1996, 2001, 2006, 2011
Madhya Pradesh	1980, 1985, 1990, 1993, 1998, 2003, 2008
Maharashtra	1980, 1985, 1990, 1995, 1999, 2004, 2009
Odisha	1980, 1985, 1990, 1995, 2000, 2004, 2009
Punjab	1980, 1985, 1992*, 1997, 2002, 2007, 2012
Rajasthan	1980, 1985, 1990, 1993, 2003, 2008
Tamil Nadu	1980, 1984, 1989, 1991, 1996, 2001, 2006, 2011
Uttar Pradesh	1980, 1985, 1989, 1991, 1993, 1996*, 2002, 2007, 2012
West Bengal	1982, 1987, 1991, 1996, 2001, 2006, 2011

\* Identity of incumbent indeterminate

**Appendix Table 4: Effect of absolute growth on incumbent performance**

*a) Change in seat share*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	-0.86	2.21	-0.39	0.70
1990s	-4.57	1.51	-3.02	0.00
2000s	3.20	1.30	2.47	0.01

*b) Change in vote share*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	-0.06	1.41	-0.04	0.97
1990s	-2.59	0.61	-4.23	0.00
2000s	1.07	0.60	1.77	0.08

*c) Change in reelection probability*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	-0.03	0.03	-0.86	0.39
1990s	-0.09	0.03	-3.07	0.00
2000s	0.08	0.02	4.09	0.00

## Appendix Table 5: Effect of relative growth on incumbent performance

### a) Change in seat share

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	-1.31	2.19	-0.60	0.55
1990s	-5.56	1.59	-3.50	0.00
2000s	0.18	2.15	0.08	0.94

### b) Change in vote share

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	-0.26	1.33	-0.19	0.85
1990s	-3.00	0.73	-4.13	0.00
2000s	0.12	0.91	0.13	0.90

### c) Change in reelection probability

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	-0.03	0.04	-0.89	0.38
1990s	-0.09	0.03	-3.06	0.00
2000s	0.05	0.04	1.50	0.14

**Appendix Table 6: Effect of preelection growth on incumbent performance**

*a) Change in seat share*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	0.78	0.77	1.01	0.31
1990s	0.38	0.65	0.58	0.56
2000s	1.14	0.68	1.66	0.10

*b) Change in vote share*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	0.50	0.37	1.36	0.17
1990s	0.12	0.39	0.30	0.76
2000s	0.51	0.24	2.14	0.03

*c) Change in re-election probability*

	<b>dy/dx</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
1980s	0.00	0.01	0.01	0.99
1990s	0.03	0.02	1.66	0.10
2000s	0.03	0.01	2.28	0.02