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# Economic governance: Does it make or break a dominant party equilibrium? The case of India

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## Abstract
Why do voters re-elect the same party for prolonged periods of time even when there are reasonable alternatives available? When and why do they stop doing so? Based on a quantitative analysis of elections between 1972 and 2014, we test the significance of 'economic governance' for the continuance and fall of one-party dominance. With data from India we show that, under a command economy paradigm, a national incumbent party sustains its dominance by playing politics of patronage, but in a marketized economy, state governments gain considerable scope in managing their economic affairs. This enables different state parties to create a stable pattern of support in states. As state-level effects cease to aggregate at the national level, the party system fragments. However, such an aggregation can re-emerge if a single party consistently delivers in the states which it governs.

## Keywords
Party system, India, Indian politics, economic governance, patronage politics, federalism

## Introduction

The dominance of a single political party in a federal democracy is often attributed to one or a combination of the following six factors: the party's ability to perform as an internally factionalized catch-all party; the influence of charismatic leadership (political agency) in popularizing a party across multiple levels of the state; the failure of opposition parties to coordinate their actions; the effect of institutional rules, especially a majoritarian electoral system and economic centralization on prolonging single party dominance; the successful framing of ideology and social identity; or the ability to engage in vote-buying and clientelistic machine politics.

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When dominant parties fail, a systemic change in the party system ensues. Thus, one of the pointers for the long-pondered puzzle of party system change should lie in the factors which induce the breakdown of the so-called 'dominant party equilibrium.' In this article, we seek to explain such a breakdown using the case of India. Until 1989, India was a textbook example of a dominant party system. Between 1989 and 2014 the Indian party system became much more fragmented, requiring the formation of multi-party coalition governments at the centre. Generally, scholars of Indian politics and elections have attempted to explain party system shifts since 1952 with reference to sociological (Hansen, 1999; Jaffrelot, 2002) or institutional factors (Chhibber and Kollman, 2004; Sridharan, 2002). Indeed, explanations that focus on institutional factors, such as electoral rules and federalism or sociological cleavages, help us to understand some aspects of party system change in India at certain points in time. Yet, in isolation, they do not provide us with a comprehensive rationale for party system shifts between 1952 and 2014. For instance, social cleavage theory cannot account for the persistence of a one-party dominant system at the national level for so many decades after independence even though India has been ethnically, linguistically and religiously highly diverse since its inception in 1947. Similarly, institutional theory cannot explain why the two institutions – the electoral system and the federal character of the state – purported to work in conjunction with one another to produce coalition governments at the national level and bipolar systems at the state level (Sridharan, 2002) after the 1990s but not before. Furthermore, these accounts cannot explain the single party parliamentary majority for the Bhartiya Janata Party (BJP) in the 2014 national elections.

In this article, we argue that party scholars, while attributing party system change at the Indian national level to sociological or institutional explanations, have overlooked the pivotal role of prevailing patterns of economic governance. Although scholars have found a positive relationship between economic growth and overall re-election prospects in the 2000s (Gupta and Panagariya, 2014; Vaishnav and Swanson, 2015), a more durable connection between economic governance and party system change has not yet been established. The essence of economic governance lies in the resource strategies adopted by national incumbents to build up and sustain an electoral following in national and subnational politics. Our conceptualization of economic governance explicitly assumes that economic policies are inevitably tailored to the prevailing economic paradigm (command economy or market economy) which a ruling party seeks to support. This happens because an economic paradigm in any period of time reflects the discursive dominance of a particular path of development over the alternative discourse (Sharma, 2011). While configuring different sets of resource strategies or economic policies pursued by political incumbents at different times, we pay closer attention to the 'incentive structures' underpinning alternative economic paradigms. For instance, a command economy paradigm, which rests on *centralized planning*, provides disproportionately more incentives than a free market economic paradigm for a national ruling party to monopolize public resources and bind both voters and political elites to the party's cartel via economic patronage (Magaloni, 2006; Parikh and Weingast, 1997). The role of such incentive structures has been largely overlooked in the literature on party system change in India.

Drawing from comparative research on theories of economic patronage in a context of single party dominance (Greene, 2007, 2010; Magaloni, 2006) and a large empirical literature on the relationship between economic performance and elections (for a review, see Lewis-Beck and Stegmaier, 2008; for evidence on the impact of a declining economy on the downfall of a hegemonic regime, see Reuter and Gandhi, 2011), we demonstrate the centrality of 'economic governance' as a source of long-term party system stability and change in India. We operationalize this variable along two axes – a *patronage* axis and a *performance* axis. The politics of patronage not only binds voters through economic patronage, enabling the ruling party to win legislative majorities in national and state elections despite powerful social cleavages, but also keeps political

opposition fragmented by ensuring that potential opposition supporters derive benefits from the ruling party's public policies. The strategy, in short, is to place the states under the political and fiscal tutelage of national incumbents and to pre-empt opposition support through economic patronage. On the other hand, the politics of developmentalism (which we call the *performance* axis) tracks economic performance, especially in areas that improve the material quality of the life of voters. This is a strong predictor of government popularity and works overtime to silence political opposition (Aytaç, 2018; Reuter and Gandhi, 2011).

The argument we make and the evidence on which it is based advance the literature by explicitly identifying those mechanisms which are most likely to explain the persistence or demise of a dominant party equilibrium in a multilevel electoral system operating under centralizing and decentralizing economic paradigms. In what follows we first present the theoretical and conceptual framework and use it to explain the causal mechanism at the core of our analysis. Next, we formulate hypotheses which enable us to test our central argument for the case of India. Finally, we present our analysis and discussion before we conclude.

## Economic governance and one-party dominance: The conceptual framework

Before explaining the precise measures of economic governance used in this study, we briefly explain how we have developed it for the specific purpose of explaining the decline of the Congress hegemony and the subsequent rise of a previously second party, the BJP, to political dominance. We synthesize insights from the following three theoretical frameworks recently advanced in the literature on electoral authoritarianism: (a) the resource theory of hegemonic party dominance (Greene, 2007), (b) the punishment regime thesis of hegemonic party survival (Magaloni, 2006) and (c) the economic performance theory of the fall of hegemonic parties (Reuter and Gandhi, 2011).

Greene's resource theory states that political dominance, or the reproduction of electoral support, depends on the ability of a ruling political party to 'create a large public sector and politicize the public bureaucracy' (Greene, 2007: 27). The key to hegemony is a central government's control over fiscal resources which it can deploy for partisan electoral purposes. Greene (2010: 2) states that the decline and fall of dominant parties is 'not due to social or institutional changes, nor is it due to socio-economic modernization, globalization, or the diffusion of democratic norms; rather, the worldwide wave of state retrenchment has diminished dominant parties' access to the resources they need to remain in power.' Greene (2007) hints at the applicability of the resource theory to explain the relative decline of the Congress Party in India.

Magaloni's punishment regime is a system in which citizens play an active role in sustaining the dominant party equilibrium because 'they are constrained by a series of strategic dilemmas that compel them to remain loyal to the regime' (Magaloni, 2006: 19). Diaz-Cayeros et al. (2004) introduced the notion of 'tragic brilliance' to depict this property of hegemonic party systems. Specifically, 'the localities that fail to support the incumbent party receive lower fiscal transfers' (Diaz-Cayeros et al., 2004: 1). The dominant parties fail when an irreversible economic crisis and a paradigm shift from a command economy to a market economy permanently diminishes their ability to reward supporters and punish opponents. Magaloni (2006) suggests that the theory of Single Party Dominance can be applied to explain the rise (and fall) of a wide range of democratic dominant party systems from the PRI in Mexico to the LDP in Japan, the Christian Democrats in Italy, and the Congress Party in India.

Although both Greene and Magaloni pay implicit attention to economic crises while exploring how and why the loss of patronage occurs, economic performance, in and of itself, is considered extraneous, so long as dominant parties can monopolize public resources (Greene, 2007, 2010) and

keep alive the fear of economic punishment in a context of prevailing uncertainty about the competence of opposition parties to handle future economic performance (Magaloni, 2006: 81). Performance based theories of elections, on the other hand, are more explicit in emphasizing the importance of economic outcomes per se for electoral results. Reuter and Gandhi (2011: 3), for instance, demonstrate that poor economic performance provides elites with a platform around which they can mobilize support to challenge hegemonic parties in elections. Thus, the authors show that hegemonic parties endure so long as national income continues to rise.

Synthesizing the insights from the aforementioned literature, we demonstrate the centrality of two factors: (a) the economic paradigm and its associated incentive structure and (b) the manner in which the party responds to the set of incentives available to it, especially in terms of designing specific economic policies (economic patronage versus economic development). The interplay between the dominant economic paradigm and policy choices, emanating from those paradigms, lays the foundation of what we call 'economic governance.' In short, economic governance primarily constitutes a national ruling party's response to the incentives provided by a given economic paradigm.

The state-led economic paradigm, which rests on centralized planning, provides incentives to the national ruling party to pursue either developmental goals or partisan goals via centralized economic authority and a monopoly over public resources. Findings from prior research developed in the context of Mexico (Greene, 2007; Magaloni, 2006) and Argentina (Gordin, 2010) show that the dominant parties generally follow the latter route. They employ their control over public resources to bind both voters and political elites to their party's cartel via economic patronage.

Conversely, the market-led paradigm makes deployment of central economic authority for politicization of public resources a forgone possibility. This paradigm cannot be effectively operationalized to bind voters to a cycle of resource dependence. At the same time, the free market economy paradigm is inherently decentralizing because it reduces the discretionary resources to which the centre has access and cedes space to the market (Stiglitz and Greenwald, 2003). This provides incentives for state-level incumbents (either belonging to a national party or a state party) to demonstrate the value of their economic program to voters in their own jurisdictions and to create a stable pattern of electoral support. This naturally intensifies political competition for the control of state office, making states principal sites of political contestation. Thus, as better economic performance at the state level ensues regardless of national economic performance, it becomes difficult for the national ruling party to maintain dominance regardless of how its party performs in the individual states, particularly when it must compete with state-based parties that may have stronger foundations in grassroots politics. The most likely scenario, in this situation, is one in which different states elect representatives who belong to different and often state-specific or regional parties. Consequently, the national party system as a whole is pushed into a more fragmented direction, giving rise to a situation where a coalition of parties forms the national government and different parties rule different states.

Yet, a more decentralized free market economy does not rule out the re-emergence of a dominant party altogether. In fact, our conceptual framework helps us explore the conditions under which a dominant party may *still* arise and build up a dominant position in the *absence* of a command economy. The rise of a political party as a dominant political force in the country is possible, provided such a party consistently delivers good economic performance in the states which it governs, even prompting the media to label those states as 'reform' leaders. This 'demonstration effect' would induce voters in other states to support this party in their own state election and also in national elections. In other words, the only manner in which a national party can strengthen its party–voter linkage while operationalizing a market economy paradigm is by credibly claiming ownership over the issue of economic reform and over the so-called 'development card.'

# Economic governance and party dominance: The case of India

India is a federal parliamentary democracy comprising 29 states, six union territories, and one National Capital Territory (Delhi). Each state is divided into parliamentary constituencies which elect MPs for the lower house of parliament, the Lok Sabha. Each Lok Sabha constituency is divided into state legislative assembly constituencies, which elect MLAs (Members of the Legislative Assembly) for the lower house of the state legislature, the Vidhan Sabha. The party which wins a majority of seats in the Vidhan Sabha selects its leader as the Chief Minister (CM). Similarly, the leader of the party with the highest number of parliamentary (Lok Sabha) constituencies becomes the Prime Minister (PM). It is important to note that, for a particular state, the party winning the highest number of Lok Sabha constituencies within the state can be different from the party that manages to form the government at the centre. When this happens for most of the states, the election results from different states fail to aggregate at the national level, giving rise to a coalition government. Otherwise, if the same party receives high support in parliamentary elections across most of the states, state-level results aggregate at the national level, producing a one-party majority at the centre. For this reason, as we will see, while testing the impact of state-level economic indicators on the performance of national incumbents in national elections, we consider the seat share of both the party winning the highest number of Lok Sabha seats overall (which then forms the government at the centre—the PM's party) and the party winning the highest number of Lok Sabha seats in a particular state—the MPs' party, which may or may not be the same as the PM's party (see online supplementary Appendix-II, Table 2 at: journals.sagepub.com/home/ips).

From the first general elections in 1952 until 1989, the Congress Party governed the centre (except between 1977 and 1979) and most, though not all, of the states. Jawaharalal Nehru, India's first PM, persuasively rallied support behind centralized planning. Given a reasonably good economic performance during this period, the Indian National Congress managed to achieve back-to-back electoral victories in the 1952, 1957 and 1962 Lok Sabha elections. The general and state assembly elections in 1967 were held under the leadership of Indira Gandhi, Nehru's daughter and successor. These elections took place in the context of a worsening economic situation resulting in popular discontent which then spilled over into political violence. The party lost 78 parliamentary seats and eight state assembly elections in 1967. Although Congress no longer garnered outright majorities in all states in elections between 1967 and 1989, it still managed to gain majorities in the Lok Sabha. This period was marked by particularistic politics where the states which elected opposition governments were openly discriminated against in terms of the flow of grants for various national development schemes (Sharma, 2017).

Although a huge body of literature deals with the unusual nature of the exceptionally long period of Congress dominance in India, surprisingly few authors explicitly attribute its replacement with a regionalized multi-party system to the disappearance of the *centralizing* (state-led) *economic paradigm* that enabled the Congress Party to dominate in the face of powerful social cleavages and keep opposition fragmented. Conversely, not much thought has been given to how the decisive shift towards a decentralizing (market-led) paradigm in 1991 might have dealt the final blow to the Congress System in 1996 and sustained a regionalized multi-party coalition system since then— paradoxically contributing to the recent rise of the BJP.

In this article we argue that a comprehensive understanding of the rise and demise of the dominant party equilibrium in India requires a systematic examination of the role of economic governance in this regard. Voters sanction economic performance and patronage differently under different economic paradigms. The shift from a command to a liberalized economy and the different incentives which this shift generated among national and subnational party elites and voters explains the replacement of the dominant party equilibrium with a more pluralized party system.

During the state-led or 'command economic paradigm' voters generally rewarded the national incumbent party for economic patronage as well as economic performance (or sanctioned it for economic mal-performance). Until 1967, when Congress controlled the vast majority of state governments and dominated the central government, the party applied a statist developmental model which placed a strong emphasis on using the resources of the state to achieve economic growth and human development. However, facing up to considerable losses in the states in the 1967 (national and state assembly) elections on the back of an economic recession, Congress sought to restore and consolidate its electoral support in national and subnational politics by resorting to a partisan control model (or economic patronage). In contrast with the earlier statist development period, state resources were now more visibly used to reward subnational incumbents of the same party and punish subnational incumbents in national opposition. Thus, one party dominance in this period took the form of two variants: a stable pattern of dominance (1952–1966) and a strained pattern of dominance (1967–89), reflecting the differential impact of endogenous political incentives and the strategic choices of national and subnational incumbents.

The gradual weakening of the centralizing economic paradigm which accelerated during the mid-1980s, reached a tipping point in 1990–91 when a severe balance of payments crisis pushed India into adopting a liberalized economic paradigm. Liberalization caused a fundamental change in the endogenous political incentives and provided a huge stimulus to national and subnational incumbents to reconsider their strategic choices. Regional political elites understood that the centre was going to be permanently deprived of its exclusive power over the state economies.

Whereas during the command economy era national, and not state, incumbents were held responsible for and thus 'owned' the issue of economic governance, under liberalization that responsibility shifted to subnational (or state) governments which could wield their enhanced state autonomy to prove their economic competence. National incumbents became weakened in their capacity to influence subnational economies, for example, by directing investment through licensing or by continuing a punishment–rewards regime. In contrast, subnational governments acquired more space to court inward investment and approach global credit markets (Mukherji, 2014). In fact, the rise of the Indian states in arenas of economic decision-making since liberalization is widely acknowledged (Bagchi, 2003; Chelliah, 2003; Rudolph and Rudolph, 2001). The resultant spin-off opportunities for state incumbents to deliver economic development and create independent political support bases in their respective states fuelled the rise of state-based parties. Aspiring politicians experienced a strong incentive to join or form state parties, whereas national parties were forced to seek alliances with state parties in order to form a central government. (On the reinforcing effect of central coalition government on the rise of regional parties see Ziegfeld, 2016.) This paved the way for the emergence of a system of regionalized multi-party coalitions at the centre, where the two main national parties, the Indian National Congress and the BJP, had to adopt strategies to form pre-poll alliances to capture power.

We argue that, with state governments gaining considerable scope in managing their economic affairs, the role of economic performance of national (polity wide) parties in states governed by them has assumed critical significance: a national party could credibly claim ownership over the issue of economic reform and overall discourse regarding economic development by performing well in those states in which the party controlled political power. Quite interestingly, in this scenario, the BJP won an absolute majority of seats in Lok Sabha elections held in 2014 pushing India's party system closer to a dominant party equilibrium once more.

This article offers an explanation, based on the changing patterns of economic governance, of the mechanism by which India's party system changed from one-party dominance to the coalition system in the 1990s and closer to one-party dominance since the 2014 general elections.

## Data and hypotheses

To test our argument, and the analytical narrative which underpins it, we proceed in two steps. In a first step we test whether the Congress Party of India used economic patronage (via the tactical distribution of grants) to establish a so-called 'punishment regime' up to 1989. Could this 'punishment regime' be sustained during the minority and coalition governments after 1991? Next, we study whether economic patronage boosted the electoral performance of the national and subnational incumbents during both periods (pre- and post-liberalization). In concert, we also test Reuter and Gandhi's thesis regarding the effect of economic performance on electoral outcomes. Thus, our economic governance hypothesis includes variables of economic patronage and performance because we assume that: (a) the success of a punishment regime is predicated on good economic performance (real per capita growth and development); and (b) a rational voter in a democracy is not only compelled by her personal cost–benefit analysis (pocketbook voting) but also impelled by the economic development of their region of residence or the nation itself (sociotropic voting).

We test the tactical distribution hypotheses (the tendency of dominant parties to use public resources for partisan goals) in India's states over a 42-year period (from 1972 to 2014). We test the effect of economic governance on electoral outcomes in national and state assembly elections across the states for the same period. Our dataset uses social and economic data (national and state) and electoral data (national or general and state elections) from 14 major states of India, which account for 95% of the Indian population. The unit of analysis has two dimensions: cross-section (14 major states) and time-series (1972–1989 and 1991–2014). We employ multiple linear regression to analyse time-series cross-sectional data using the panel procedure. We provide two distinctive regression models (see online supplementary Appendices I and II at: journals.sagepub.com/home/ips), one linked to test the tactical distribution hypothesis, the other to test the effect of economic governance on electoral performance.

The '*tactical distribution hypothesis*' considers the relationship between states' political affiliation and the per capita disbursement of discretionary grants, controlling for other factors that are known to influence the distribution of grants, namely: per capita income; rural population; life expectancy; voter turnout; and election years. The literature so far suggests that a national incumbent party employs discretionary funds to disproportionately favour the states which it rules at the expense of opposition-led states. However, we assume that the potential to deploy funds strategically should be higher in a command than in a market-led economy. Thus, we test the given hypothesis separately for the command economy period (1972–89) and the market economy era (1991 onwards):

**H$_1$:** Grants will vary positively with the control of the state executive (CM) by the same party as the national executive (PM's party)

The '*economic governance hypothesis*' considers the relationship between economic patronage, economic performance, and electoral outcomes, calculated on the basis of national and state incumbents' percentage of seats in national parliamentary and state assembly elections. Since the PM's party at a given time is made up of MPs elected from within all Indian states—which can send similar or different *sets of* parties to the Lok Sabha during a particular election cycle—the state-wise election performance of 'national incumbents' in subsequent elections is measured in two ways: the performance of the PM's party and the performance of the party which occupies the highest number of Lok Sabha seats in specific states—'the MPs' party'—which can be different for each state. Our dataset shows that during the pre-1991 period, the MPs' party was different from the PM's party in just 27% of observations, while the frequency increased to 55% in the post-1991 period (see Figure 1 and online supplementary Appendix II: Table 2 at: journals.sagepub.com/home/ips)

We take the distribution of discretionary grants as an indicator of economic patronage, and estimate its effect on incumbents' seat share, separately from economic performance. The impact of patronage is measured via a change in per capita discretionary grants during an incumbent's term in office. The impact of economic performance is measured via a change in the per-capita net state domestic product. To eliminate the effect of economic growth achieved at the cost of human development and general well-being, we control for human development indicators (HDIs) (literacy and life expectancy) and urbanization, a critical indicator for lifting people out of poverty. To eliminate the effect of 'debt-driven' economic growth, we incorporate revenue deficit (lack of fiscal prudence) as a control variable. The control variables are of interest in their own right, as they help to better understand economic performance outcomes.

Since the empirical literature which focuses on tactical distribution generally upholds the finding that central governments distribute funds to their counterparts in states to maximize re-election prospects of (a) own-party subnational incumbents in state-level elections and (b) its own party in national elections (in which all states participate), we attempt to explore whether such tactical distribution indeed brings the intended results. Further, we suspect that the potential of such a policy should vary substantially under the command economy and the market economy systems. Thus, we test the given hypothesis separately for the command economy period (1972–89) and the market economy era (1991 onwards):

> **H$_{2a:}$** Growth in per capita aggregate grants received by a state will have a significant positive effect on the seat share of the national and subnational incumbents in subsequent national and subnational elections respectively.

Theories of retrospective voting based on economic outcomes assume that better economic performance will improve the re-election prospects of national and subnational incumbents. However, since the choices of voters depend on who they hold responsible for improving or worsening their economic life (Becher and Donnelly, 2013; Gupta and Panagariya, 2014), we suspect national incumbents to benefit more during the centralized command economy era (given the central government's control over public resources) than in the free market economy era. Thus, we test the following hypothesis separately for the command economy period (1972–89) and the market economy era (1991 onwards):

> **H$_{2b:}$** Improvements in state-level economic indicators will have a significant positive effect on the seat share of national and subnational incumbents in subsequent national and subnational elections respectively.

## Results and analysis

### *The tactical distribution hypothesis: What drives the distribution of discretionary grants?*

We find that evidence for the tactical distribution hypothesis (H$_1$) is strong and significant for the period of centralized planning (1972–1989). In this period $CM_{affil}$ states (led by CM sharing the federal PM's party affiliation) received approximately 36% more aggregate grants in comparison with opposition-ruled states. In contrast, in the market economy era (1991–2013) support for the tactical distribution hypotheses is not significant. This signals the PM's party's inability to direct resources towards affiliated states in this period.

In seeking to understand why economic patronage prevailed in the command period and became much weaker in the liberalization phase, we contrast the incentive structures of the national incumbents under a command or planned economy versus a free market economy. As explained in previous sections, while the latter paradigm limits opportunities to reward party loyalty by indulging in the tactical distribution of grants, the former provides national incumbents with incentives to extend state patronage as a means to build party dominance in the face of rising public and party-political opposition. In the aftermath of setbacks in the 1967 elections and the subsequent split of the party in 1969 PM Indira Gandhi decided to respond to the perverse incentives provided by the centrally planned command economy paradigm and opened the survival kit of socialism (Sharma, 2011). Certainly, Mrs Gandhi tried to take ownership of issues related to social welfare, but this remained subservient to her politics of patronage. She also decided to de-link parliamentary and state assembly elections from 1971 onwards and to suspend organisational elections within the Congress Party after 1972. This enabled Mrs Gandhi to assert her dominance within the party (Swenden and Toubeau, 2013). Therefore, until 1989, the central government used its public resources to starve opposition-ruled states while rewarding affiliated states with more funds (Sharma, 2017).

However, the operationalization of centralized planning along the *patronage* axis pushed the Indian economic system into a vicious circle of inefficiency, which ultimately forced the Congress government to abandon its punishment–reward tactics. Disbursements to various interest groups continued to increase (often emerging from middle-rank peasants who had benefited from the commercialization of agriculture) and this reduced the surplus available for public capital formation. The command economy model and the punishment–reward regime with which it had been associated started to fade away when the compulsions of fiscal consolidation required rationalizations of such wasteful spending. Overall, it became increasingly difficult for the centre to feed a vast network of privilege and patronage by increasing budgetary transfers to the states and by periodically re-scheduling and writing off loans afterwards. The deteriorating trend across a range of fiscal indicators deprived the Congress-led central government of funds for public investment which it could use to bind voters to its political cartel. The stage for a full-blown economic crisis in 1991 was set. In its wake, the central government pursued intensive liberalization reforms which gave a clear message to regional elites that the centre was going to be permanently deprived of its exclusive power over state economies and rendered the relationship between discretionary grants and affiliation to the PM's party much weaker, as highlighted in Table 1.

### The economic governance hypothesis: Does economic patronage/performance matter for election outcomes?

Table 2 presents the results of our economic governance hypothesis. We estimate the impact of the predictor variables on seat share of the PM's party, the CM's party and the party controlling the highest number of parliamentary constituencies within a state (MPs' party).

During the command economy era, we find statistical proof for the economic governance hypotheses ($H_2$), that is, the positive effect of per capita receipts from discretionary grants and economic performance (as measured by changes in a state's net domestic product) on the electoral performance of the PM's party and the CM's party in subsequent national and subnational elections. We also observe a positive relationship between these predictors and outcome variables for the party holding the most parliamentary seats within a state.

The regressions suggest that, during the command economy era, the strategy of the national ruling party to employ discretionary grants to reward affiliated states and starve opponents (Table 1) neatly translated into proportional improvements in seat shares for the national and subnational

**Table 1.** Tactical distribution of discretionary grants (aggregate) in the command (1972–89) and market economy era (1991–2014).

| Variables | Aggregate discretionary grants per capita (log) | | |
|---|---|---|---|
| | Period | (β) | t − stat |
| $CM_{affil}$ | 1972–1989 | 0.3627** | (2.98) |
| (*dummy*) | 1991–2014 | 0.1044 | (0.85) |
| *NSDP per capita (log)* | 1972–1989 | 1.120*** | (5.45) |
| | 1991–2014 | 0.740** | (2.75) |
| *Rural Population (log)* | 1972–1989 | 0.038 | (0.15) |
| | 1991–2014 | 0.062 | (0.24) |
| *Life Expectancy* | 1972–1989 | 0.072** | (2.20) |
| | 1991–2014 | 0.094** | (2.74) |
| *Literacy rate* | 1972–1989 | 0.042*** | (3.28) |
| | 1991–2014 | 0.060*** | (3.26) |
| *Voter Turnout* | 1972–1989 | 1.844** | (2.77) |
| | 1991–2014 | 0.941** | (2.38) |
| *Constant* | | −14.209** | (−2.79) |
| *R-sqr* | | 0.904 | |
| *Dfres* | | 13 | |
| *N* | | 547 | |

*$p<0.10$, **$p<0.05$, ***$p<0.01$.

incumbent parties (Table 2). The data also show that, in the centralized planning context of the command economy, the central government is fully capable of claiming credit and reaping electoral rewards from its allocation strategies when the economy grows and development indicators (life expectancy and literacy) improve. Thus, despite the increasing fragmentation of the party landscape in the states since 1971, successive elections returned the Congress Party to power with comfortable majorities in the national parliament (except between 1977 and 1979), consolidating the one-party-dominant nature of the national party system.

During this period, in the majority of states, the CMs and the MPs were affiliated with the PM's party (the Congress Party for almost the entire period). This shows up in the regression results where the benefits of economic governance are shared by all the three categories. Indeed, the purpose of the tactical distribution of grants was to gain a foothold in state politics, and to create incentives for office-seeking local politicians to use the Congress Party label.

In contrast, Table 2 shows that the positive association between discretionary grants and electoral performance does not hold during the market economy era (1991–2014). Higher discretionary grants do not strengthen the electoral performance of the PM's party or the MPs' party in subsequent national elections, and their association with the electoral performance of a CM's party in subsequent subnational elections is also relatively weak. Similarly, and as expected, state governments, rather than the centre, take credit for good economic performance. We observe a statistically significant positive impact of improved access to health and education, poverty reduction, and fiscal management on electoral performance of the CM's party. There also appears to be a sharing of the electoral reward for urbanization between the CM's party and the PM's party. This is so because urbanization policies in India are known to derive from the central government (although state governments are constitutionally empowered to develop their own urbanization policies). This indicates that voters expected subnational incumbents to exploit the possibilities opened by reforms to bring about rapid improvements

**Table 2.** Impact of economic patronage and economic performance on seat share.

| | Command economy 1972–1989 | | | Market economy 1991–2014 | | |
|---|---|---|---|---|---|---|
| | Seat share of incumbent parties | | | | | |
| | National elections | | State elections | National elections | | State elections |
| | PM's party | MPs' party | CM's party | PM's party | MPs' party | CM's party |
| | b/t | b/t | b/t | b/t | b/t | b/t |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *Economic patronage* | | | | | | |
| Discretionary Grants per capita | 0.488*** (2.95) | 0.535*** (3.29) | 0.191** (2.28) | 0.022 (0.23) | 0.083 (1.30) | 0.007*** (3.98) |
| *Economic performance* | | | | | | |
| NSDP per capita | 2.094*** (3.44) | 1.769*** (2.83) | 2.004*** (5.80) | −0.890 (−0.95) | 1.228** (2.30) | 0.17 (0.43) |
| Life Expectancy | 0.185* (1.73) | 0.08 (0.82) | 0.071 (1.05) | 0.115 (1.30) | 0.103 (0.71) | 0.129** (2.33) |
| Literacy Rate | 0.432* (1.81) | 0.228 (0.65) | 0.214 (1.43) | 0.086 (0.85) | 0.141** (2.01) | 0.086** (2.03) |
| Rural Population Growth | −0.128 (−0.01) | −15.046 (−0.66) | 6.122 (0.51) | −12.557** (−1.97) | −5.756* (−1.86) | −4.331*** (−2.65) |
| State Revenue Deficits | −0.001 (−1.17) | 0.003 (1.03) | −0.009 (−1.38) | 0.022 (0.93) | −0.006** (2.81) | −0.031** (−2.52) |
| Constant | −0.882*** (−2.86) | −0.252 (−0.47) | −0.494* (−1.75) | 0.116 (1.34) | −0.091 (−1.01) | −0.038 (−0.82) |
| R-sqr | 0.246 | 0.313 | 0.325 | 0.057 | 0.161 | 0.293 |
| dfres | 21 | 21 | 15 | 50 | 64 | 33 |
| BIC | 82.9 | 79.3 | 37.3 | 108.8 | 88.7 | 9.9 |

*$p<0.10$, **$p<0.05$, ***$p<0.01$.

in their well-being. This happened because post-1991 reforms signified an expansion in the economic role of the states from mere agents of 'central planning' to de facto autonomous economic units. Overall, the results indicate that improvements in HDIs, rather than the rise in per capita income per se, matter more for the electoral performance of subnational incumbents.

Conversely, there is no significant link between state-level economic performance variables (except for urbanization) and the performance of the national incumbent party (PM's party) candidates. In fact, in the case of per capita growth in income at the state level, the coefficient turns negative, albeit not statistically significantly. On the other hand, improvements in state-level economic indicators are associated with an increase in support for the party controlling the highest number of Lok Sabha seats from that state (MPs' party)—which in most instances belonged to a party other than the PM's party (see online supplementary Appendix II at: journals.sagepub.com/home/ips), most probably the CM's party (Schakel and Swenden, 2018). This shows that voters reward state incumbents, rather than national incumbents, for improvements in their economic life, not only in subnational, but also in national elections. This corroborates Gupta and Panagariya's (2014) finding that the higher the economic growth rate in a state, the larger the proportion of the candidates representing the state incumbent party (MPs belonging to the CM's party) winning in national elections. Since many opposition-ruled states (governed by the BJP and its allies) in the

post-reform era grew at a higher rate than the country as a whole, this voting behaviour conferred a distinct disadvantage on the PM's party candidates (Congress or Congress-led United Progressive Alliance (UPA) for most of the period). Our results show that the benefits of state-level improvements in economic outcome variables are spread over a wide range of parties controlling parliamentary constituencies in various states, rather than wholly directed to the PM's party alone. Since the PM's party is made up of MPs elected from various states, the results show that state-level effects did not aggregate at the national level, post 1991.

In the post-reform era, the comparison between state-level and national performance assumed critical significance. Surely, in the run-up to the 2014 national elections, voters were called to compare Gujarat's double-digit growth under the BJP CM Narendra Modi (the party's choice for PM) with the performance of the PM's party (Congress) at the national level. Overall, our research shows that, in the market economy era, when there is greater scope for state governments to design their own economic development initiatives, voters started expecting better state-level economic performance via initiatives of the state governments and demonstrated their willingness to reward state incumbents, rather than national incumbents, for improvements in their economic life. This shift in the level of electoral accountability contributed to the fragmentation of the party system. Different parties established themselves as parties of reform and good governance across different states, and state-level electoral effects no longer aggregated at the national level. A pattern in which states sent multiple conflicting sets of parties to the Lok Sabha influenced the nature of party aggregation at the Centre.

Figure 1, based on our dataset, reveals the aggregation and congruent voting effects in the command and market economy eras. The figure visualizes how the expansion of the economic space for state governments produced a heterogenous aggregation effect as the paradigm shift from a state-led to a market-led economy unfolds. To calculate the aggregation effect, we counted those instances during which a majority of MPs per state in lower house elections share the PM's party label (see online supplementary Appendix II at: journals.sagepub.com/home/ips). We find that the homogenous aggregation effect is much stronger in the command economy era (1952–1989), while the opposite holds for the market economy era since 1991. To calculate the congruent voting effect, we count those instances in which a majority of voters from a state support the same party in national and state assembly elections. The congruent voting effect was more powerful in the command economy era (and it favoured the Congress Party) and less so in the early decade of the post-reform era, after which congruent voting started to increase again (but this time favoured the same—often regional—party controlling the state).

**Figure 1.** Aggregation effect and congruence voting effect: Command versus market economy era.
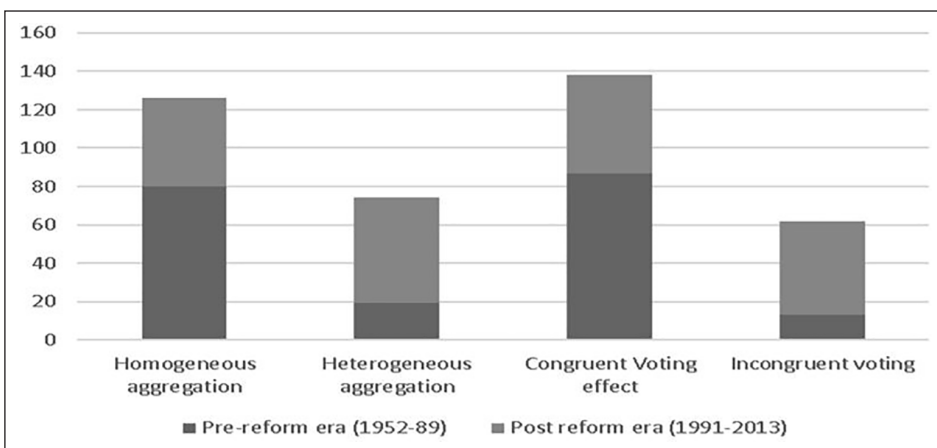
## Conclusion: Bringing in economic governance

In this article, we studied the puzzle of the rise and decline of a dominant party equilibrium in India and attempted to solve it by bringing in the notion of economic governance. The empirical results suggest that voters largely held national incumbents responsible for economic success or failure under the command–economy paradigm, but held state incumbents responsible under the market economy paradigm. As marketization reforms empowered the states to develop their own economic and social policies, subnational, and not national political incumbents, often representing regional or state parties, were increasingly held responsible for changes in the economic life of the states they governed. This, in turn, changed the incentives of party elites and facilitated the rise of the regionalized (or 'fragmented') party system with which the post-Congress Party system has long been associated. As single-state parties began to reap the rewards for their performance even in national elections, the party system could no longer be aggregated at the national level.

Our thesis also lays out the condition under which party aggregation at the national level can happen even in the absence of a centralizing command economy paradigm, namely, when a party shows good economic governance in the states it controls. The BJP in 2014 fulfilled this condition. The economy had been consistently performing well in the states which it was governing or where it was a coalition partner. The news and print media held the BJP CM of Gujarat, Narendra Modi, responsible for developing and industrializing Gujarat. Modi campaigned primarily on a platform of economic competence and touted his pro-business 'Gujarat model', named after the state which he ruled from 2001 until 2014 as the model to emulate nationally.

The Congress Party's losses in 2014 occurred against a backdrop of rising inflation and slowing economic growth, and the Congress was punished *more* for this in those states that were Congress-ruled, adding further credibility to our argument (Suri and Palshikar, 2014). Furthermore, the elevation of a sitting CM to the office of PM underlines the prominence of state party leaders in the liberalization era.

Overall, our article adds to the understanding of what drives party system change in federalized or decentralized parliamentary systems which feature a one-party dominant system. We bring together two streams of literature in political economy: distributive politics and retrospective voting—two important mechanisms of representative multi-party democracies—to highlight the significance of 'economic governance' in explaining the sustenance and fall of one-party dominance in India from the very first elections in 1952 until the general elections of 2014.

A detailed investigation into the tools adopted by the BJP to *sustain* its dominance after 2014 falls beyond the scope of the paper. Certainly, our finding that economic issues assume greater significance in subnational elections under the market economy paradigm may help explain the BJP's losses in three Hindi-belt states (Rajasthan, Madhya Pradesh and Chattisgarh) in December 2018. Elections took place against a backdrop of economic stagnation, agrarian crisis and rising unemployment. The BJP also lost most of the by-elections between 2015 and 2019. However, the BJP won the 2019 parliamentary elections with an enhanced parliamentary majority, in spite of a weakening national economic performance. Although a detailed explanation for this win falls beyond the scope of our analysis, an important reason could be found in the BJP's ability to 're-centre' the political narrative around (Hindu) nationalism and identity. A terrorist attack in Kashmir in the run-up to the 2019 elections and the resulting Indian air strike on a terror camp in Pakistan helped strengthen this narrative. The BJP also continued to 'own' the issue of 'development' (infrastructure), which in recent years voters had come to prioritize against Congress's association with statist welfare (Chhibber and Verma, 2018: 35–53). The return of one-party dominance in India echoes a recent but worldwide trend in the significance of majoritarian nationalism and identity politics (Norris and Inglehart, 2018) in electoral mobilization. The extent to

which this will continue to push economic performance to the background as a predictor of voting remains far from clear.

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## Supplementary material

Supplementary appendices can be found at: journals.sagepub.com/home/ips

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## Appendix-I: The Tactical Distribution Hypothesis

The purpose of part one of our research is to investigate the factors which influence distribution of discretionary grants in India. In our study, discretionary grants include grants for central plan schemes, centrally sponsored schemes, and ADHOC grants. From the descriptive statistics for discretionary grants (Table 1), we observe significant heterogeneity among states and within states. Thus, it is more appropriate to use the panel data that will enable us to control for the state-specific effects and get more realistic and appropriate estimation of the factors contributing to the variations in grants.

Table 1: *Descriptive statistics: State-wise Discretionary Grants*

| State | Statistics | Total grants (Rs billion) | State | Statistics | Total grants (Rs billion) |
|---|---|---|---|---|---|
| **Andhra Pradesh** | mean | 11.33936 | **Maharashtra** | mean | 17.50172 |
| | std. dev. | 14.31991 | | std. dev. | 31.34819 |
| | minimum | 0.1767 | | minimum | 0.2241 |
| | maximum | 52.9108 | | maximum | 179.6663 |
| **Bihar** | mean | 7.787756 | **Orissa** | mean | 6.931993 |
| | std. dev. | 9.433736 | | std. dev. | 8.632789 |
| | minimum | 0 | | minimum | 0.1132 |
| | maximum | 32.3254 | | maximum | 31.7254 |
| **Gujarat** | mean | 5.60487 | **Punjab** | mean | 3.904574 |
| | std. dev. | 7.507038 | | std. dev. | 5.815311 |
| | minimum | 0 | | minimum | 0 |
| | maximum | 30.5359 | | maximum | 19.031 |
| **Haryana** | mean | 4.056542 | **Rajasthan** | mean | 7.8745 |
| | std. dev. | 6.378082 | | std. dev. | 8.154147 |
| | minimum | 0 | | minimum | 0 |
| | maximum | 28.1405 | | maximum | 27.2749 |
| **Karnataka** | mean | 11.78425 | **Tamil Nadu** | mean | 8.893121 |
| | std. dev. | 17.00614 | | std. dev. | 11.12277 |
| | minimum | 0.1178 | | minimum | 0 |
| | maximum | 54.0043 | | maximum | 36.632 |
| **Kerala** | mean | 4.393788 | **Uttar Pradesh** | mean | 19.28245 |
| | std. dev. | 7.143362 | | std. dev. | 35.52006 |
| | minimum | 0.0744 | | minimum | 0 |
| | maximum | 42.5935 | | maximum | 196.2368 |
| **Madhya Pradesh** | mean | 10.07081 | **West Bengal** | mean | 8.816735 |
| | std. dev. | 13.49004 | | std. dev. | 14.8011 |
| | minimum | 0.2093 | | minimum | 0.1067 |
| | maximum | 61.3906 | | maximum | 57.3805 |

In official communications, the government of India asserts that grants given for centrally sponsored schemes and central plan schemes (discretionary grants) are directed at the most backward areas with the sole purpose of rural development and poverty alleviation. Therefore, people and areas with low income benefit from these grants.

However, in our data we find that this is not the case. To get an idea about the relationship between grant distribution and income level we examined scatter plots for the pre- and post-reform periods (Figures 1 and 2). We found that the reverse of the official claim is true. Rather than directing grants to the states that need more money, the government channels more grants to the states which already have a high per capita income.

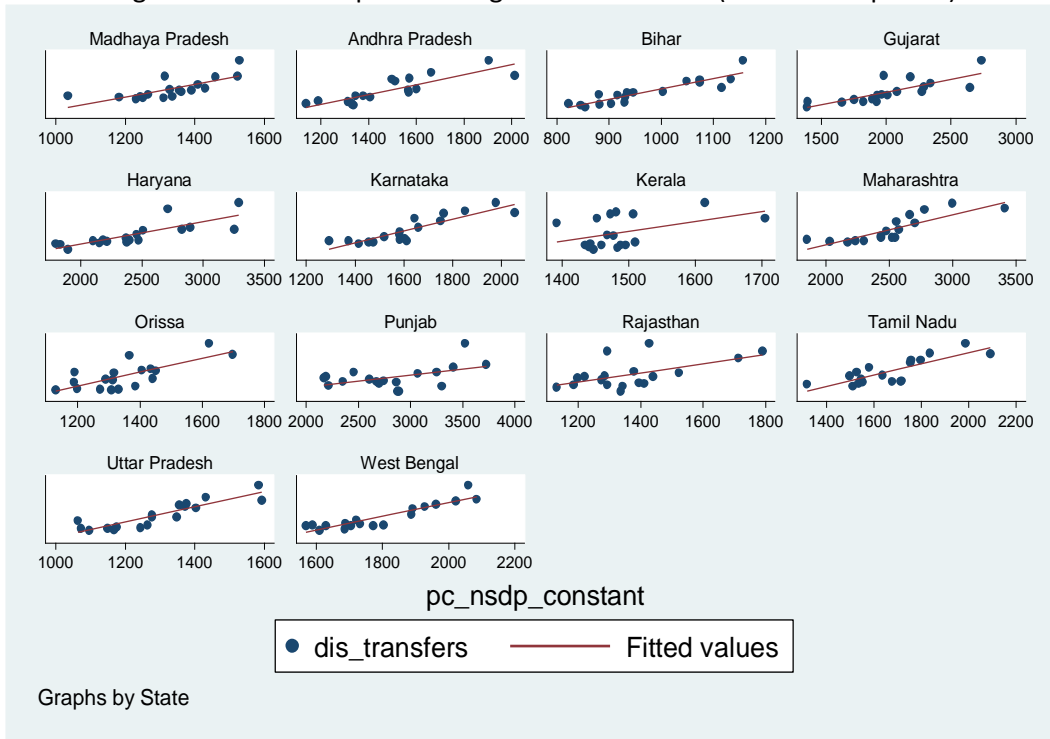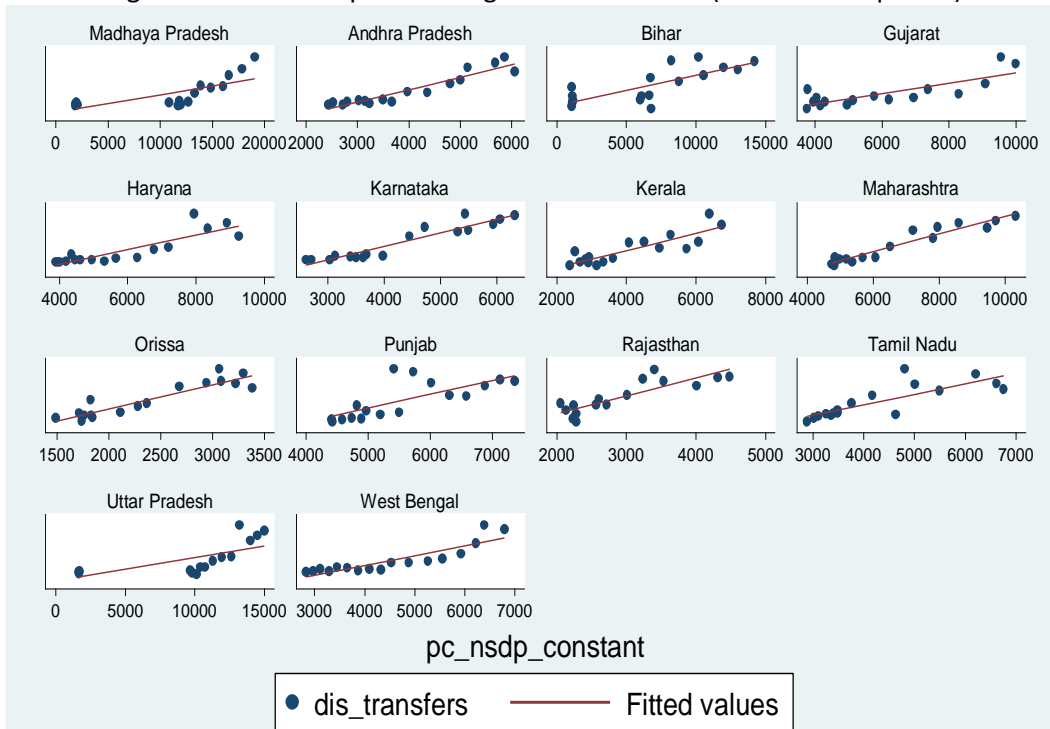Figure 1: Relationship between grants and income (Pre-Reform period)



Figure 2: Relationship between grants and income (Post-Reform period)

To explain the variations in total grants we created a dummy variable for the partisanship of Chief Ministers (CMs) in the 14 major states, which takes the value of 1 if the CM is affiliated to the PM's party and 0 otherwise. We controlled for several variables known to influence distribution of grants.

**(i)**     *The log of per-capita net state domestic product in constant prices .* The significance of this variable is that, on the one hand, equity concerns can lead government to direct more funds to low-income states than high-income states, and, on the other hand, the higher lobbying power of high-income states can enable them to extract preferential treatment from the central government. The effects may interact with each other, leading to progressive distribution, regressive distribution, or no significant impact, depending on the politics of the period.

**(ii)**    *The log of state populations residing in rural areas.* We expect more funds to be directed to rural constituencies because most of the discretionary transfers are actually given in the name of rural development. In addition, various election studies have found that rural constituencies in India generally outvote urban constituencies by a significant percentage. Thus, pragmatically, the larger the rural population, the higher the number of voters that can be expected to turn out to vote.

**(iii)**   *Life expectancy and Literacy rate.* These variables are considered important indicators of quality of life and human development. A low value would indicate the low human-development capacity of a state government and the consequent need to expand services in social sectors. These concerns can lead states with low life expectancy to receive more grants. On the other hand, a high value would indicate a higher level of education, implying more political awareness. High values also indicate higher well-being and hence greater ability to participate in politics. Such factors can lead states with better education and health indicators to receive preferential treatment.

**(iv)**    *Percentage of voter turnout in the most recent parliament election.* This variable proxies voter consciousness in a state. As already argued, the degree to which the electorate participates in elections and is informed about policies can influence central grant awards.

The key explanatory variable in this part of the research is partisanship of the CM. During the pre-reform era (1972-89), for most of the period, there were only two categories of CMs—either affiliated or opposition. In the second period (1991-2014), there were four categories: (a) CMs belonging to the PM's party (b) CMs belonging to a coalition partner party (c) CMs belonging to a party which provided outside support to the national ruling coalition. (d) CMs belonging to an opposition party. For the sake of consistency and comparison we club all the categories of CMs except those belonging to the PM's party as non-affiliated for the second period (1991-2014).

Table 2: *Chief Minister's affiliation Pre and Post-1991 Period*

| 1971-1989 | | | | 1991-2013 | | | |
|---|---|---|---|---|---|---|---|
| CM | Freq. | Percent | Cum. | CM | Freq. | Percent | Cum. |
| $CM_{affil}$ | 162 | 69.3 | 69.3 | $CM_{affil}$ | 55 | 23.50 | 23.50 |
| $CM_{opp}$ | 71 | 29.97 | 100 | $CM_{align}$ | 26 | 11.11 | 34.62 |
| | | | | $CM_{opp}$ | 115 | 49.15 | 83.76 |
| | | | | $CM_{osp}$ | 38 | 16.24 | 100 |

Before undertaking the regression analysis, we checked the data for stationarity, by employing the Levin-Lin-Chu unit-root test. The test results for the two periods, summarized in Table 3, indicate that in almost all cases we can reject

the null hypothesis of the existence of unit root. Thus, our time series is stationary and we can use the chosen variables for empirical research.

Table 3. *Levin-Lin-Chu unit-root test with trend*
Ho: *There is unit root and the variables are not stationary*

| | | UNADJUSTED T | ADJUSTED T* | P-VALUE |
|---|---|---|---|---|
| **1972-1989** | | | | |
| | Discretionary Grants | -12.47 | -5.49 | 0.00 |
| | Net State Domestic Product | -11.25 | -2.59 | 0.00 |
| | Rural Population | -3.85 | -1.97 | 0.02 |
| | Voter Turnout | -8.84 | -3.35 | 0.00 |
| | Life Expectancy | -10.26 | -4.75 | 0.00 |
| | CMaffil | -12.02 | -6.21 | 0.00 |
| | | **Unadjusted t** | **Adjusted t*** | **p-value** |
| **1991-2014** | | | | |
| | Discretionary Grants | -9.90 | -3.11 | 0.00 |
| | | | | |
| | Net State Domestic Product | -7.26 | -2.56 | 0.01 |
| | Rural Population | -7.20 | -3.19 | 0.00 |
| | Voter Turnout | -22.94 | -18.33 | 0.00 |
| | Life Expectancy | -12.91 | -7.59 | 0.00 |
| | CMaffil | -14.44 | -8.54 | 0.00 |

In order to select the perfect model—fixed effect versus random effect—we performed a Hausman specification test. The results for the given models for two periods are summarized in Table 4, below. The null hypothesis is that differences in coefficients are not systematic. If the null hypothesis is not rejected, it is advisable to use a random effects model. From the test results we can see that in most cases we can reject the null hypothesis. Thus, we decided to use fixed effects model.

**Table 4:** Hausman specification test
Ho: *Difference in coefficients not systematic*

| 1972-1989 | |
|---|---|
| $H_0$: *unit root* | Per Capita Discretionary Grants |
| **chi2** | 29.37 |
| **Prob>chi2** | 0.0003 |
| 1991-2014 | |
| **chi2** | 25.97 |
| **Prob>chi2** | 0.0021 |

We then employed a *Modified Wald test* for group-wise heteroskedasticity and a *Wooldridge test* for autocorrelation in panel data. The test results are summarized in Tables 5 and 6. From Table 5 we can see that the null hypothesis is rejected, which means that heteroskedasticity exists in our model for both periods. From Table 6, we reject the null hypothesis, which means that autocorrelation exists, especially for period 1.

**Table 5** *Modified Wald test for group-wise heteroskedasticity*

| $H_0: sigma(i)^2 = sigma^2 \ for \ all \ i$ | Per Capita Discretionary Grants |
|---|---|
| 1972-89 | |
| chi2 | 118.93 |
| Prob>chi2 | 0 |
| 1991-2014 | |
| chi2 | 2114.06 |
| Prob>chi2 | 0 |

**Table 6** Wooldridge test for autocorrelation in panel data

| $H_0: no \ first-order \ autocorrelation$ | Per Capita Discretionary Grants |
|---|---|
| **1972-89** | |
| F | 22.064 |
| Prob>F | 0.0004 |
| **1991-2014** | |
| F | 2.142 |
| Prob>F | 0.1671 |

Since we have heteroskedasticity and autocorrelation problems, we use autocorrelation and heteroskedasticity robust models. Thus, we run command for robust variance-covariance estimate for dealing with suspected heteroskedasticity and within panel autocorrelation in the idiosyncratic error term.

In short, we use a fixed-effect estimator and employ White's heteroscedasticity and autocorrelation consistent standard errors. The choice of model is based on the results of Hausman specification, modified Wald (group-wise heteroscedasticity) and Wooldridge (autocorrelation in panel data) tests. The general functional form of the models for the pre-and post-reform period can be presented as:

$$Grant_{it} = C_i + \beta_1 Inc_{it} + \beta_2 Controls_{it} + \beta_3 Exp_{var_{it}} + \varepsilon_{it} \quad \text{................. (1)}$$

In equation 1, $Grant_{it}$ is the grants value for $i_{th}$ state during the period $t$; $Inc_{it}$ is the per capita net state domestic product of $i_{th}$ state during the $t_{th}$ period of time; $Controls_{it}$ represent the control variables and $Exp_{var_{it}}$ are the key explanatory (Independent) variables; $\beta_1, \beta_2, and \ \beta_3$ are corresponding coefficients of the given variables; $C_i$ represents the state-specific individual effects; and $\varepsilon_{it}$ is the error term. We also introduce period dummies as we attempt to obtain results distinctive to the two-time periods, i.e., the period between 1972 and 1989 (command economy) and the post-reform period (market economy after 1991).

# Appendix-II: The Economic Governance Hypothesis

Part 2 of our research investigates the impact of economic governance on performance of national incumbents in national elections and state incumbents in state assembly elections in India. Figure 1(a) and (b) illustrate the relationship between the two variables in national elections. The graphs show a statistically significant high positive correlation between these two variables. Thus, based on the observed data and the existing theories on the relationship between the economic and electoral performance, our research aims to test this hypothesis.

Figure 1(a) – Impact of GDP growth performance on seat share of national incumbents (1952-2014)
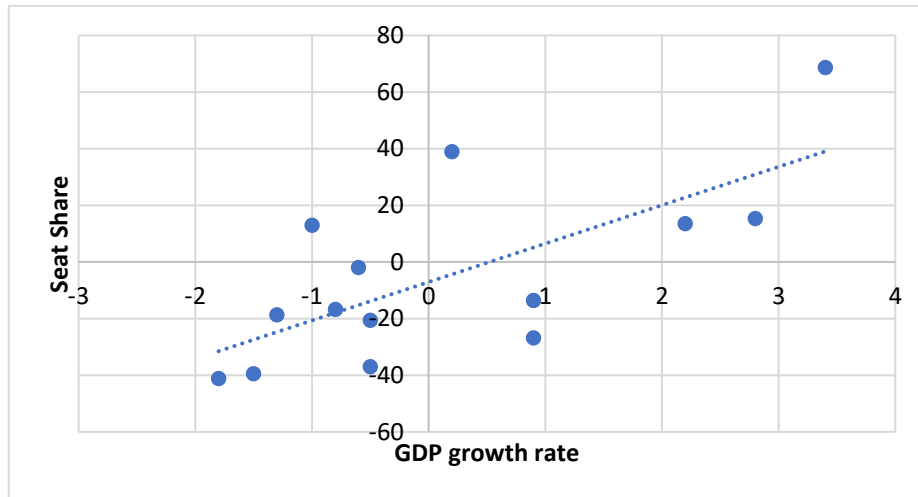


Figure 1(b) – Impact of GDP growth performance on vote share of national incumbents (1952-2014)
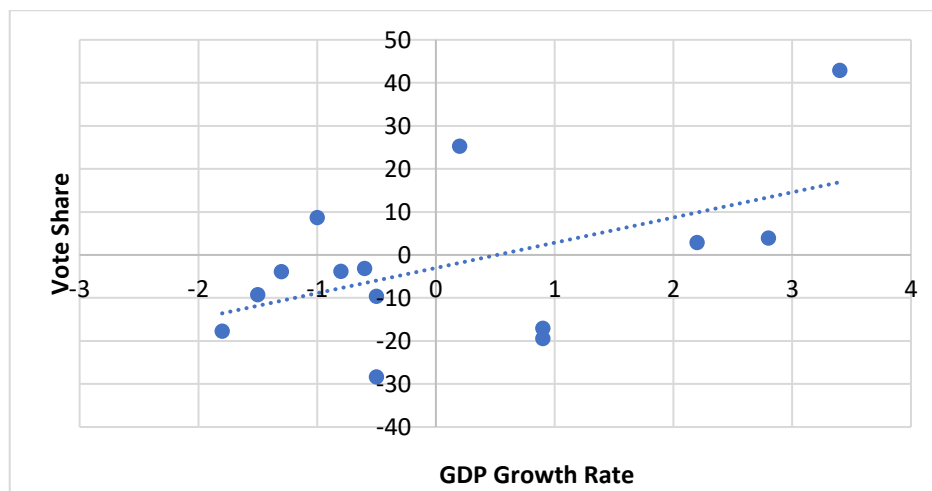


This research undertakes empirical analysis for the period 1972-2014, using the data of 14 major states of India which account for 95 per cent of the national population. In November 2000, the boundaries of three states (Bihar, Madhya Pradesh and Uttar Pradesh) were redrawn, and a new state was carved out of each of them. So, after 2000, population, income, grants, assembly seats, and parliamentary constituencies are calculated for truncated Bihar, Madhya Pradesh and Uttar Pradesh. Table 1 illustrates the national and subnational elections considered in our empirical analysis.

**Table 1: National and Subnational Elections: 1971-2014**

| National | State elections | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Andhra Pradesh | Bihar | Gujarat | Haryana | Karnataka | Kerala | Madhya Pradesh | Maharashtra | Orissa | Punjab | Rajasthan | Tamil Nadu | Uttar Pradesh | West Bengal |
| 1971-1977 | 1972-1978 | 1972-1977 | 1972-1975 | 1972-1977 | 1972-1977 | 1977-1980 | 1972-1977 | 1972-1978 | 1971-1974 | 1972-1977 | 1972-1977 | 1971-1977 | 1969-74 | 1971-1972 |
| -- | --- | --- | --- | --- | --- | --- | --- | --- | 1974-1977 | --- | --- | --- | 1974-1977 | 1972-1977 |
| 1977-1979 | 1978-1982 | 1977-1980 | 1975-1980 | 1977-1982 | 1978-1983 | | 1977-1980 | 1978-1980 | 1977-1980 | 1977-1980 | 1977-1980 | 1977-1980 | 1977-1980 | 1977-1982 |
| 1980-1984 | 1983-1985 | 1980-1985 | 1980-1985 | 1982-1987 | 1983-1985 | 1980-1982 | 1980-1985 | 1980-1985 | 1980-1985 | 1980-1985 | 1980-1985 | 1980-1985 | 1980-1985 | --- |
| --- | --- | --- | --- | --- | --- | 1982-1987 | --- | --- | --- | --- | --- | --- | --- | 1982-1987 |
| 1985-1989 | 1985-1989 | 1985-1990 | 1985-1990 | 1987-1991 | 1985-1989 | 1987-1991 | 1985-1990 | 1986-1990 | 1985-1990 | 1985-1992 | 1985-1990 | 1985-1988 | 1985-1989 | 1987-1991 |
| 1990-1991 | 1989-1994 | 1990-1995 | 1990-1995 | --- | 1989-1994 | --- | 1990-1993 | 1990-1995 | 1990-1995 | --- | 1990-1993 | 1989-1991 | 1990-1991 | --- |
| 1991-1996 | -- | --- | --- | 1991-1996 | ---- | 1991-1996 | 1994-1998 | --- | --- | 1992-1997 | 1994-1998 | 1991-1996 | 1991-1993 | 1991-1996 |
| 1996-1997 | 1995-1999 | 1995-2000 | 1995-1998 | 1996-2000 | 1994-1999 | 1996-2001 | --- | 1995-1999 | 1995-2000 | --- | --- | 1996-2001 | 1994-1997 | 1996-2001 |
| 1998-1999 | -- | --- | 1998-2002 | --- | ---- | --- | --- | --- | --- | 1997-2002 | --- | --- | 1997-2002 | --- |
| 1999-2004 | 1999-2004 | 2000-2005 | 2002-2007 | 2000-2005 | 1999-2004 | 2001-2006 | 1999-2003 | 1999-2004 | 2000-2004 | 2002-2007 | 1999-2003 | 2001-2006 | 2002-2007 | 2001-2006 |
| 2004-2009 | 2004-2009 | 2005-2010 | 2007-2012 | 2005-2009 | 2004-2008 | 2006-2011 | 2004-2008 | 2004-2009 | 2004-2009 | 2007-2011 | 2004-2008 | 2006-2011 | 2007-2012 | 2006-2011 |
| 2009-2014 | 2009-2014 | 2010-2015 | 2012-2017 | 2009-2014 | 2008-2013 | 2011-16 | 2009-2013 | 2009-2014 | 2009-2014 | 2011-2016 | 2009-2013 | 2011-2016 | 2012-2017 | 2011-2016 |
| 2014-2019 | 2014-2019 | 2015-2020 | 2017- | 2014-2019 | 2013-2018 | 2016- | 2013-2018 | 2014-2019 | 2014-2019 | 2016- | 2013-2018 | 2016- | 2017- | 2016- |

We employed two types of models with two different outcome variables to measure elections results. In the first group of models we used a continuous variable, percentage seats won by the governing party; and in the second group of models we used a dummy variable, describing whether the governing parties at the national and subnational level were re-elected. Figures 2-6 illustrate certain trends with regard to the dependent variables for national and state assembly elections.

Figure 2 displays state-wise performance of the PM's party seeking re-election. We observe that, overall, national election results in all states follow a similar path: high support for the incumbent PM's party until the elections of 1990—except in 1977 and 1980—and low support thereafter, with an upward spike in 2009.

**Figure 2- % of MP seats won by the national incumbent party seeking re-election**
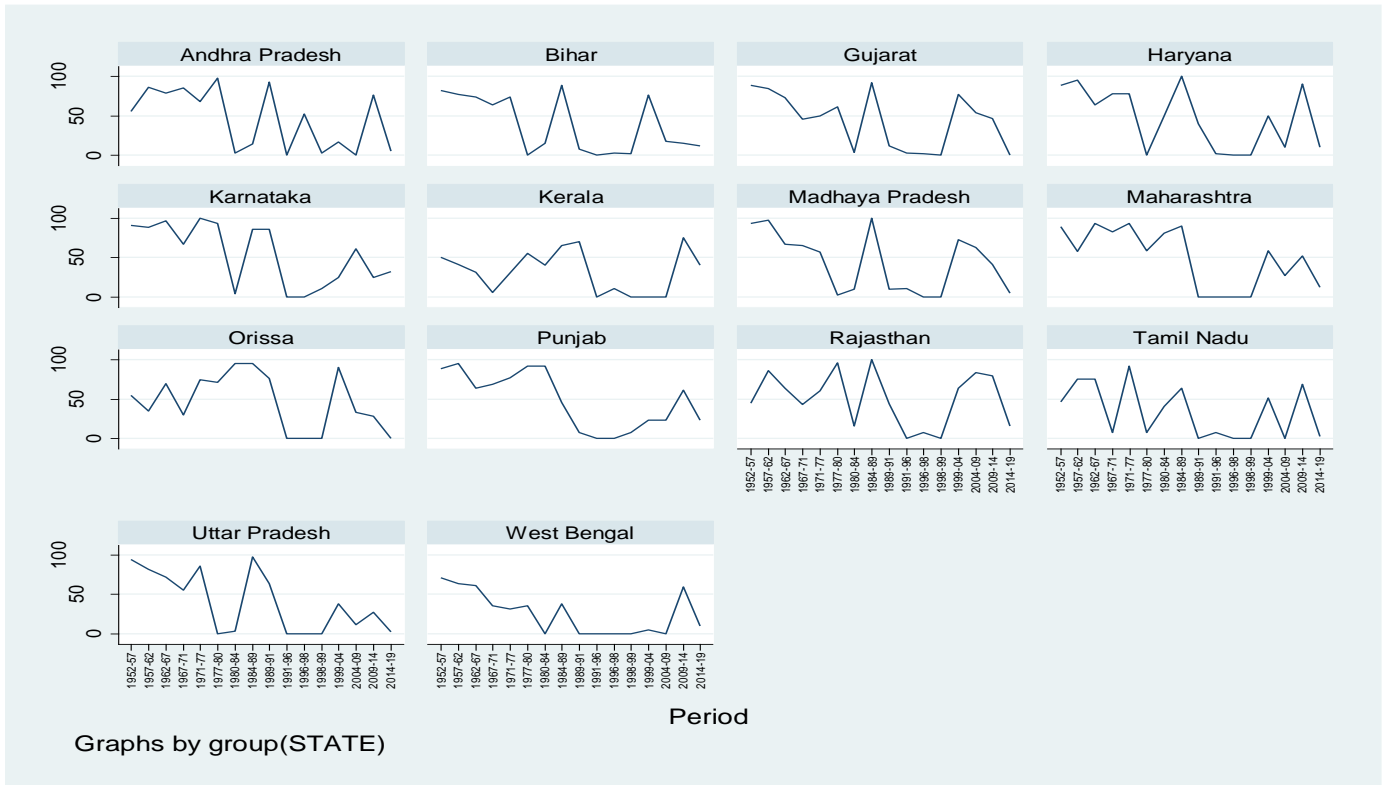


Graphs by group(STATE)

Figure 3 illustrates the number of states during each election supporting the national incumbent seeking re-election.

**Figure 3: States' support to the national incumbent seeking re-election**
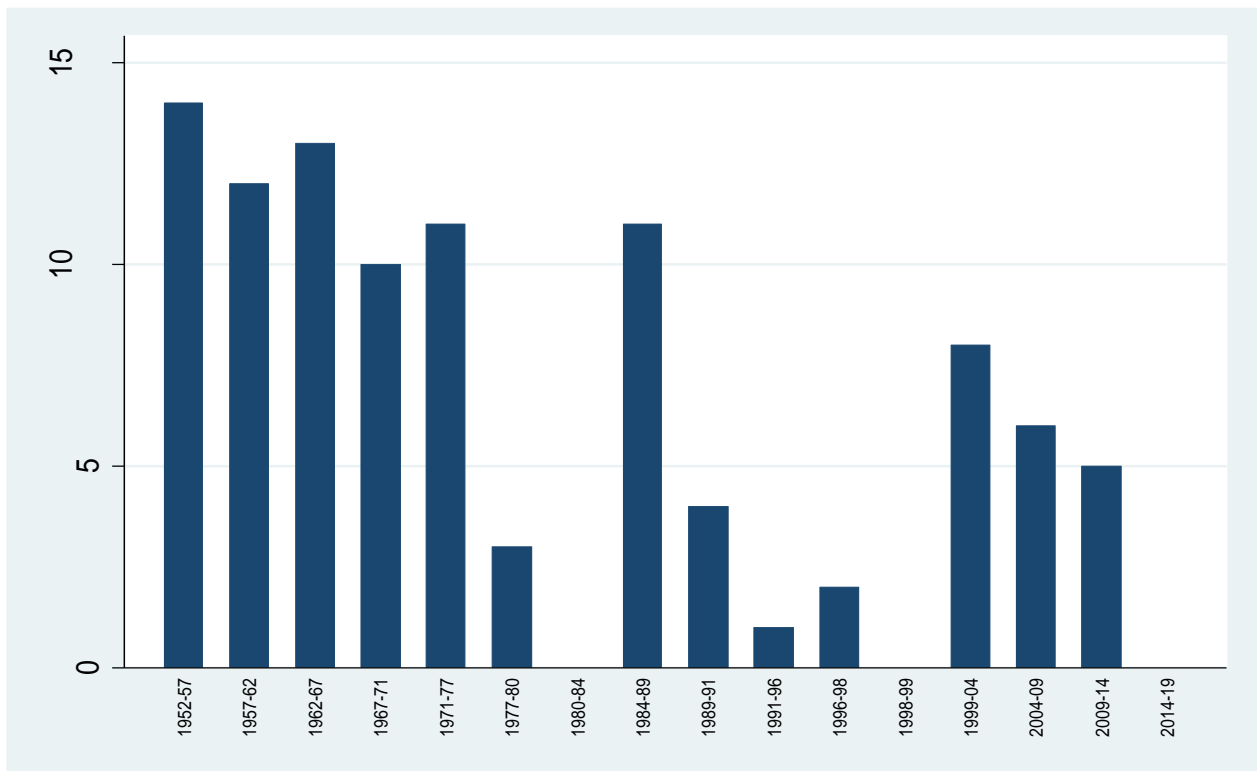
Figure 4 shows the number of states where the election outcomes were the same at the national level and the subnational level. We observe that when ten or more 'major states' support the same party in national elections, the state level effects aggregate to produce a one-party majority at the national level. Otherwise, no single party can obtain a majority in the Lok Sabha. This situation can be observed from 1989 onwards. In 2014, the BJP formed a majority government despite not fulfilling this criterion because the party could win a whopping 208 Lok Sabha seats in just eight states.

**Figure 4: Number of states where the party winning the highest number of parliamentary seats is the same as the party that forms government at the Centre**



Figure 5 shows % of seats won by the previous state incumbent. We observe that there is no obvious common path observed across states and that developments are unique to each state.

**Figure 5: % of seats won by the incumbent CM's party (seeking re-election)**

From figure 6 we can observe that anti-incumbency is highest in Kerala followed by Punjab while pro-incumbency is highest in Gujarat and West Bengal.

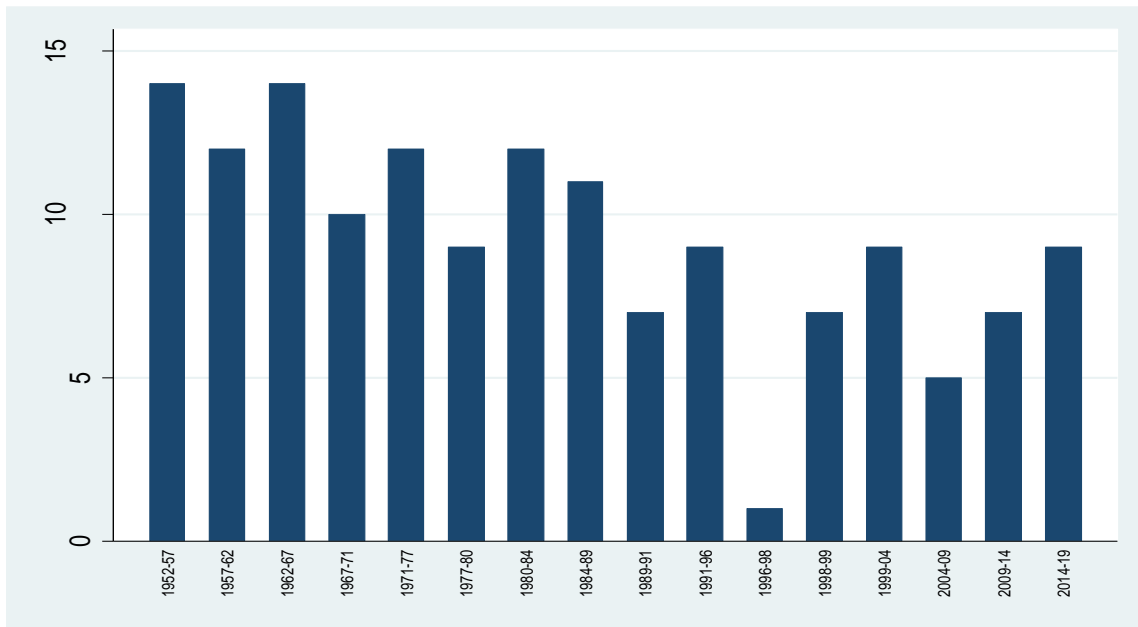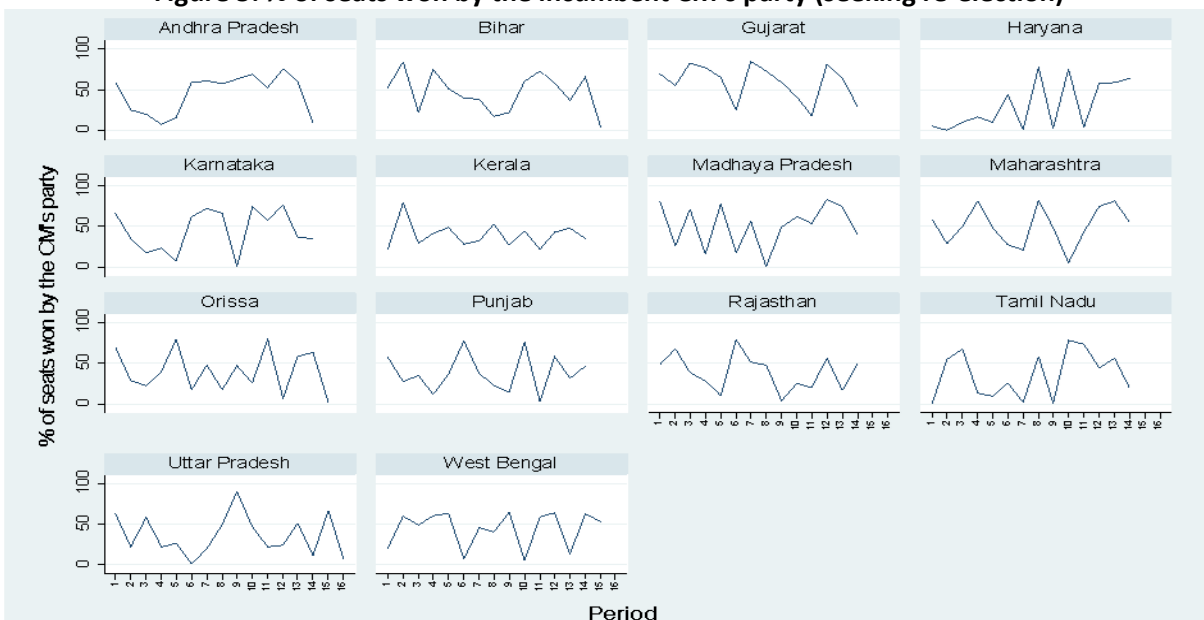**Figure 6: State-wise performance of incumbent parties**
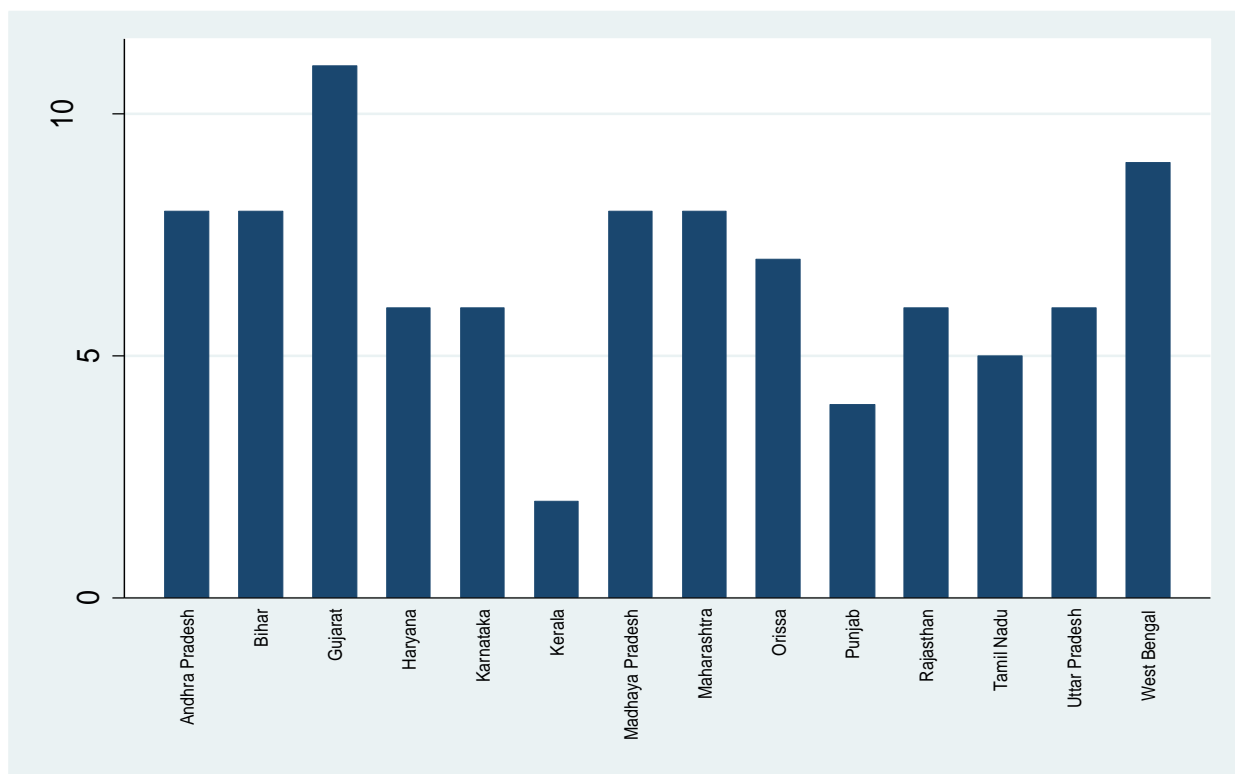


Table 2 (a) and (b) shows the extent to which the state level effects aggregated to the national level in the pre- and post-reform periods. Until 1989 we notice that the party that is successful in most of the states (60% of election results from 14 states between 1972-89) forms government at the centre as well. This shows homogenous aggregation of the state-level effects. However, after 1991 no single party could dominate the national elections in all the states. The Congress Party. which governed India for three full terms, either alone (1991-96) or with allies (2004-2013), could win only 28.5% of the elections in 14 states between 1991-2013.

The political landscape during the post-1991 period presents a contrast to the preceding period in three senses—(a) The state-based parties were more successful than national parties in forming state governments, with the result that at a given moment the vast majority of states were ruled by the parties, or coalitions, not affiliated with the party at the centre. The dataset used in this study indicates that during this period only 24% of state governments shared the PM's party affiliation. (b) The state-based parties during the post-reform period, won, on an average, 35 to 45% of parliamentary seats, as compared to 5-7% during the pre-reform era. (c) the majority of parliamentary constituencies in more than half of the states were held by MPs who did not represent the party of the Prime Minister implying that the latter could not form a majority government at the centre on its own. Thus, the national parties seeking to form governing coalitions had to bargain with state parties.

**Table 2 (a)** *Lok Sabha elections in 14 states: Pre and Post 1991*

| Party winning Highest Lok Sabha Seats in Parliament (PM's Party) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1971-1989** | | | **1991-2013** | | | | **1991-2014** | | | |
| Party/Alliance | Freq. | Percent | Cum. | Party/Alliance | Freq. | Percent | Cum. | Party/Alliance | Freq. | Percent | Cum. |
| | | | | BJP/NDA | 28 | 33.33 | 33.33 | BJP/NDA | 42 | 42.86 | 42.86 |
| Congress | 42 | 60 | 60 | Congress/UPA | 42 | 50 | 83.33 | Congress/UPA | 42 | 42.86 | 85.71 |
| Janata/NF | 28 | 40 | 100 | Third Front | 14 | 16.67 | 100 | Third Front | 14 | 14.29 | 100 |
| Total | 70 | 100 | | Total | 84 | 100 | | Total | 98 | 100 | |
| Party Winning highest Lok Sabha constituencies in specific states (MPs' Party) | | | | | | | | | | | |
| Party/Alliance | Freq. | Percent | Cum. | Party | Freq. | Percent | Cum. | Party | Freq. | Percent | Cum. |
| BJP | 2 | 2.86 | 2.86 | BJP | 33 | 39.29 | 39.29 | BJP | 42 | 42.86 | 42.86 |
| Congress | 42 | 60 | 62.86 | Congress | 24 | 28.57 | 67.86 | Congress | 24 | 24.49 | 67.35 |
| State Parties | 13 | 18.57 | 81.43 | State Parties | 25 | 29.76 | 97.62 | State Parties | 30 | 30.61 | 97.96 |
| Janata/NF | 13 | 18.57 | 100 | Third Front | 2 | 2.38 | 100 | Third Front | 2 | 2.04 | 100 |
| Total | 70 | 100 | | Total | 84 | 100 | | Total | 98 | 100 | |

**Table 2 (b)**

| Parliamentary election results at the state level *versus* the aggregate result at the national level: Same or different? | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period | **1971-2014** | | | **1971-89** | | | **1991-2013** | | | **1991-2014** | | |
| Statistics | Freq. | Percent | Cum. | Freq. | Percent | Cum. | Freq. | Percent | Cum. | Freq. | Percent | Cum. |
| Same | 148 | 66.07 | 66.07 | 51 | 72.86 | 72.86 | 38 | 45.24 | 45.24 | 47 | 47.96 | 47.96 |
| Different | 76 | 33.93 | 100 | 19 | 27.14 | 100 | 46 | 54.76 | 100 | 51 | 52.04 | 100 |
| Total | 224 | 100 | | 70 | 100 | | 84 | 100 | | 98 | 100 | |

In the empirical models we hypothesize that, in addition to economic performance, measured by the real net state domestic product, voters' behaviour is influenced by the financial allocations to the states during the incumbent party's term in office. Since rapid growth of the economy in a developing country like India can lead to a highly unequal distribution of resources and hence political unrest and social discontent, we control for human development indicators such as life expectancy and literacy rates. We also control for urbanization, which is known to have substantial poverty-reduction effects. In the context of India, it has been found that urban consumption growth brought gains to the rural as well as the urban poor[1].

 The descriptive statistics are presented in the Table 3, below.

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1 Gaurav Datt, Martin Ravallion, and Rinku Murgai, 'Growth, Urbanization and Poverty Reduction in India', Working Paper (National Bureau of Economic Research, February 2016), https://doi.org/10.3386/w21983.

**Table 3: Descriptive Statistics**

| State | Statistic | pc_ rNSDP (rupees) | Grants (mln rupees) | Rural population (mln.) | Deficit (mln. rupees) | Life expectancy (%) | Literacy (%) |
|---|---|---|---|---|---|---|---|
| Andhra Pradesh | Mean | 15632 | 9310.0 | 47.6 | n.a. | 61.6% | 46.0% |
|  | St. dev | 7715 | 11800.0 | 7.0 | n.a. | 3.8% | 12.8% |
| Bihar | Mean | 4846 | 4690.0 | 73.6 | -912.1 | 59.6% | 39.2% |
|  | St. dev | 2091 | 5720.0 | 13.3 | 14742.7 | 5.2% | 9.8% |
| Gujarat | Mean | 19663 | 3330.0 | 27.2 | -15657.4 | 62.1% | 58.0% |
|  | St. dev | 9553 | 3070.0 | 4.5 | 21310.1 | 4.0% | 12.5% |
| Haryana | Mean | 23916 | 3390.0 | 12.4 | -6826.4 | 63.3% | 52.5% |
|  | St. dev | 10262 | 6160.0 | 2.5 | 11409.6 | 3.5% | 15.7% |
| Karnataka | Mean | 16994 | 8220.0 | 30.5 | -627.6 | 63.0% | 55.9% |
|  | St. dev | 8091 | 13600.0 | 4.6 | 10515.0 | 3.6% | 11.1% |
| Kerala | Mean | 19402 | 2540.0 | 20.9 | -14708.7 | 70.6% | 85.3% |
|  | St. dev | 9359 | 2010.0 | 1.6 | 16584.5 | 3.8% | 7.6% |
| Madhya Pradesh | Mean | 8090 | 6910.0 | 47.9 | 1034.0 | 56.3% | 48.2% |
|  | St. dev | 4403 | 6250.0 | 7.5 | 20786.9 | 4.1% | 12.8% |
| Maharashtra | Mean | 23199 | 10400.0 | 48.1 | -24507.1 | 64.9% | 65.4% |
|  | St. dev | 10911 | 14700.0 | 7.9 | 33028.2 | 3.8% | 10.8% |
| Orissa | Mean | 12741 | 6410.0 | 27.3 | -3987.3 | 57.3% | 48.4% |
|  | St. dev | 3825 | 7900.0 | 4.3 | 10146.4 | 4.2% | 14.4% |
| Punjab | Mean | 24709 | 2500.0 | 14.0 | -14721.4 | 66.1% | 56.4% |
|  | St. dev | 7693 | 2980.0 | 2.1 | 15776.9 | 3.3% | 13.1% |
| Rajasthan | Mean | 13114 | 6520.0 | 34.8 | -12171.1 | 60.4% | 42.7% |
|  | St. dev | 4531 | 6200.0 | 8.7 | 15924.1 | 4.5% | 13.9% |
| Tamil Nadu | Mean | 18976 | 6590.0 | 34.3 | -12943.8 | 63.3% | 63.0% |
|  | St. dev | 9452 | 6930.0 | 2.5 | 14967.8 | 4.4% | 10.2% |
| Uttar Pradesh | Mean | 6585 | 13800.0 | 113.0 | -17940.8 | 56.5% | 43.3% |
|  | St. dev | 3641 | 22100.0 | 23.0 | 40504.8 | 5.3% | 12.5% |
| West Bengal | Mean | 14601 | 5350.0 | 48.6 | -43384.7 | 62.5% | 57.8% |
|  | St. dev | 5704 | 6520.0 | 8.9 | 58611.3 | 5.1% | 10.9% |
| Total | Mean | 15891 | 6430.0 | 41.4 | -12873.4 | 62.0% | 54.4% |
|  | St. dev | 9432 | 9900.0 | 26.7 | 27186.7 | 5.5% | 16.4% |

## The Model

We have panel data of 14 states for both national and state assembly elections from 1972 to 2014. In order to capture behavioural differences between individual states, referred to as individual heterogeneity between the states, we controlled for individual specific effects and employed models with the following general functional form:

$$Election_{it} = \alpha_i + \beta\, pcRNSDP_{it-1} + \beta\, pcGRANTS_{it-1} + \gamma Control_{it-1} + e_{it} \quad (1)$$

$Election_{it}$ in the first group of models is a continuous variable indicating % of seats won by the previous incumbent party for $i_{th}$ state and $t_{th}$ period, and in the second group of models is a dummy variable indicating whether the previous incumbent party was re-elected for $i_{th}$ state and $t_{th}$ period. $pcRNSDP_{it-1}$ is the previous period's growth rate of real per capita net state domestic product in the $i_{th}$ state. $Control_{it-1}$ are the control variables, including the

previous period's growth of rural population, growth of government budget deficit, changes in life expectancy and literacy rates for the $i_{th}$ state. $\alpha_i$ is the individual specific constant term, $\beta$ $and$ $\gamma$ are the respective marginal effects, and $e_{it}$ is the error term for $i_{th}$ state and $t_{th}$ period.

In the first group of models, where the dependent variable is continuous, we control for individual specific effects (individual heterogeneity) by employing both fixed effects and random effects models. In a fixed effects model individual differences are fixed over time and are captured by the different individual specific, time invariant intercepts of the model. The functional form of a simple fixed effects model can be presented as;

$$Y_{it} = \beta_{0i} + \beta_1 X_{it} + \varepsilon_{it} \qquad (2)$$

Random effects model also assume individual heterogeneity, but it is treated as a random effect because of randomly selected individuals. Thus, a simple random effects model can be presented as;

$$Y_{it} = \overline{\beta_0} + \beta_1 X_{it} + v_{it} \qquad (3)$$

$$v_{it} = u_i + \varepsilon_{it} \qquad (4)$$

Where, $\overline{\beta_0}$ is the population average of the intercept, and $u_i$ is the random individual difference of the intercept from the population average.

Fixed effects models are used when we assume that individual specific error term and the constant are not correlated with each other. In these models we include the time invariant individual effects in the individual specific constant terms. In the random effects models, we assume random variation across individuals and include individual specific effects in the error terms. Furthermore, as we observed problems of group wise heteroskedasticity in the idiosyncratic errors of a linear panel-data model (variance in the model was not constant), we estimated panel-data models by using feasible generalized least squares, which solves the problems of heteroskedasticity across the panels.

In the second group of models, where the dependent variable was binary, we employed logit/probit models with fixed effects, random effects, and population average. As the dependent variable in these models is binary and takes only two values (either 0 or 1), its expected values are interpreted as probabilities.

$$E(Y_{it}) = Pr\ (Y_{it} = 1) \qquad (5)$$

We take into consideration the main problems of linear probability models (estimated probabilities not being in the reasonable range (0, 1) and linearity not being a rational assumption). In the logit models we assumed a logistic distribution (equation 6) and in the probit models we assumed standard normal distribution (equation 7);

$$G(X_{it}\beta) = \frac{exp(x_{it}\beta)}{1+exp(x_{it}\beta)} \qquad (6)$$

$$\Phi(X_{it}\beta) = \int_{-\infty}^{X_{it}\beta} \psi(v)dv \qquad (7)$$

### The Estimation Tests

Prior to the empirical estimation of the models, several pre-estimation tests were employed to choose the correct model specifications. The first obvious question which arises while dealing with panel data analyses is whether there is heterogeneity in the data which should be controlled, or whether the panel data should be pooled and the estimation done by using a pooled regression approach. Furthermore, it is crucial to test whether the random effect or the fixed effect model is more preferred. We did this by employing the Hausman specification test. The test basically checks for any correlation between the error components and the regressors in a random effects model. The null hypothesis in the Hausman specification test is that the random effects estimator is an efficient and consistent estimator of the true parameters. If this is the case, there should be no systematic difference between the two estimators and the random effects model is preferable. Otherwise, if there exists a systematic difference in the estimates, and the assumption of efficiency is violated, then one should employ the fixed effects model.

The test results, summarized in Table 4, indicate that in all cases we could not reject the null hypothesis, hence the random effects model was preferred. However, a potential problem when using random effects estimation can be the endogeneity problems arising from the fact that the random error term is correlated with any of the explanatory variables. This problem is common in random effects models. However, for our models it is not the case, as our right hand side variables are in the lag terms.

**Table 4:** *Hausman specification test*

| | Continuous dependent | | Logit | |
|---|---|---|---|---|
| | **National level** | **State level** | **National level** | **State level** |
| chi2 | 2.64 | 0.52 | 0.97 | 5.01 |
| Prob. >chi2 | 0.8529 | 0.9975 | 0.9866 | 0.5431 |
| Decision | Random effects | Random effects | Random effects | Random effects |

For the Probit models the test was not applicable as only random effects models are available for Probit models

$H_0$: Difference in coefficients not systematic, and the random effects model should be chosen


In the next test we checked for the existence of autocorrelation and heteroskedasticity in the models, through the Wooldridge test for autocorrelation and a modified Wald test for group-wise heteroskedasticity. The results, summarized in the Tables 5 and 6, show that in the models we have the problem of heteroskedasticity. To resolve this problem, we employed feasible generalized least squares (GLS) models, assuming that the error terms across the panels are heteroskedastic but uncorrelated.

**Table 5: Wooldridge test for autocorrelation in panel data**

| | Continuous dependent | |
|---|---|---|
| | **National level** | **State level** |
| chi2 | 3.573 | 1.791 |
| Prob. >chi2 | 0.0831 | 0.2056 |
| Autocorrelation | No | No |

For the Panel Logit and Probit models the test was not available

$H_0$: No first-order autocorrelation

**Table 6: Modified Wald test for group wise heteroskedasticity**

| | Continuous dependent | |
|---|---|---|
| | **National level** | **State level** |
| chi2 | 61.33 | 2598.82 |
| Prob. >chi2 | 0.0000 | 0.0000 |
| Autocorrelation | Yes | Yes |

For the Panel Logit and Probit models the test was not available

$H_0: \sigma_i^2 = \sigma^2 \; for \; all \; i$


To summarize, we tested the influence of economic governance indicators on electoral outcomes by using random effect models. The choice of model was based on the results of a Hausman test which revealed that the difference in coefficients was not systematic. Since our aim is to predict electoral outcomes based on knowledge of what happened during an incumbent's term in office, we include lagged values of our independent variables. This solves the problems of autocorrelation and endogeneity. However, as we observed problems of group-wise heteroskedasticity in the idiosyncratic errors of a linear panel-data model (variance in the model was not constant), we estimated panel-data models by using feasible generalized least squares (GLS), which addresses issues of heteroskedasticity across the panels. The general functional form of the models for the pre- and post-reform periods can be presented as:

$$Election_{it} = \alpha_i + \beta_1 \, Econ_{growth_{it-1}} + \beta_2 Econ_{patronage_{it-1}} + \beta_3 URBAN_{it-1} + \beta_4 DEV_{hd_{it-1}} + \beta_5 DEF_{revenue_{it-1}} + e_{it} \quad \ldots\ldots\ldots\ldots\ldots (2)$$

whereby $Election_{it}$ is a continuous variable indicating the percentage of seats won by the incumbent party for $i_{th}$ state and $t_{th}$ period, $Econ_{growth}$ is the growth rate of real per capita net state domestic product in the $i_{th}$ state during the incumbent's term in office. $Econ_{patronage}$ is the growth rate of aggregate discretionary grants; $URBAN$ measures the pace of urbanization by calculating the decline in the growth rate of the rural population, $DEV_{hd}$ represents changes in the life expectancy and literacy rates and $DEF_{revenue}$ is the growth rate of revenue deficit for the $i_{th}$ state during the incumbent's term in office; $\alpha_i$ is the individual specific constant term, $\beta_{1-5}$ are the respective marginal effects, and $e_{it}$ is the error term for $i_{th}$ state and $t_{th}$ period.

### The Empirical Estimation Results (for the entire period)

The results of all the empirical models are summarized in Tables 7 and 8. We also report the results of all models to facilitate comparison and check the robustness of the estimated coefficients.

**Table 7: Empirical estimation results of continuous outcome models (1952-2014)**

| | National level elections | | | State level elections | | |
|---|---|---|---|---|---|---|
| | Fixed effects | Random effects | GLS | Fixed effects | Random effects | GLS |
| NSDP | 1.374** | 1.238** | 1.468*** | 1.317*** | 1.304*** | 1.452*** |
| | (2.14) | (2.11) | (2.66) | (2.86) | (3.25) | (3.65) |
| Grants | -0.073 | -0.069 | -0.064 | 0.007* | 0.007** | 0.007*** |
| | (-0.89) | (-0.92) | (-0.92) | (1.87) | (2.33) | (2.85) |
| Rural population | -19.221** | -11.045** | -12.782** | -3.892 | -2.056 | -3.053 |
| | (-2.41) | (-2.05) | (-2.32) | (-0.62) | (-0.50) | (-0.99) |
| Deficit | 0.000 | 0.000 | 0.000 | -0.003 | -0.002 | -0.004 |
| | (-0.19) | (0.01) | (0.15) | (-0.44) | (-0.34) | (-0.66) |
| Life expectancy | 10.966 | 7.994 | 0.782 | 4.028 | 3.513 | 0.254 |
| | (1.23) | (0.98) | (0.12) | (0.55) | (0.54) | (0.06) |
| Literacy | 2.408 | 4.572 | 6.207 | 4.191 | 5.412 | 7.463 |
| | (0.25) | (0.54) | (0.79) | (0.46) | (0.68) | (1.23) |
| Constant | 0.16 | 0.029 | 0.077 | -0.05 | -0.087 | -0.073 |
| | (0.99) | (0.24) | (0.65) | (-0.38) | (-0.87) | (-0.98) |
| R-sqr | 0.0876 | 0.0935 | - | 0.1432 | 0.1465 | - |
| Obs. | 116 | 116 | 116 | 101 | 101 | 101 |
| F-stat/ Wald chi2 | 2.16 | 11.24 | 16.16 | 2.31 | 16.14 | 22.33 |

t-stat/z-stat are given in the parenthesis
*p<0.1, **p<0.05, ***p<0.01
All the independent variables are in the first lags. The dependent variable is the change in % of seats won in the elections.
NSDP is per capita real NSDP growth rate (y/y), Grants is the growth rate (y/y) of total discretionary grants, Rural population is the growth rate of the rural population, Deficit is the growth rate (y/y) of the
states` budget deficit, Life expectancy is the change (y/y) in the life expectancy rate, Literacy is the change (y/y)
in the literacy rate.

Based on the empirical results for the entire period (1952-2014) we can state that if the economic growth rate increased by 1% during the incumbent's term in office, then the ruling party could expect approximately 1.5% increase in seats in the elections held at the end of its term. We also observe that if the urbanization increases by

1%, then the ruling party can expect 12.8% increase in its seats. Finally, we got a statistically significant impact of government discretionary grants on the results of state level elections. However, the magnitude is quite small. Thus, if grants increase by 1%, the incumbent state party may expect 0.007% increase in its seats. Additionally, if we consider the signs and the magnitude of the regression coefficients, without worrying too much about the p-values, we can say that life expectancy and literacy rates do have an impact on electoral outcomes.

According to the results of binary outcome models summarized in Table 8, we can state that if the economic growth rate increase by 1% during the governing period, the probability of being re-elected for the national ruling party increases by 0.4 to 0.8% and for a subnational ruling party it increases by 5 to 8%. Also, if the grants increase by 1%, the re-election probability of the national governing party does not increase, while that of the state governing party increases by 0.5 to 1%.

**Table 8: Empirical estimation results of binary outcome models (1952-2014)**

| | National level elections | | | | | State level elections | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Logit FE** | **Logit RE** | **Logit PA** | **Probit RE** | **Probit PA** | **Logit FE** | **Logit RE** | **Logit PA** | **Probit RE** | **Probit PA** |
| NSDP | 0.02585 | 0.01214 | 0.00875* | 0.00625 | 0.00412* | 0.05519 | 0.080** | 0.077** | 0.047** | 0.0458** |
| | (0.76) | (0.37) | (1.80) | (0.31) | (1.75) | (1.49) | (2.11) | (2.13) | (2.20) | (2.21) |
| Grants | 0.00404 | 0.00441 | 0.00439 | 0.00253 | 0.00253 | 0.00867 | 0.010* | 0.009* | 0.006* | 0.005* |
| | (0.93) | (1.05) | (1.05) | (1.04) | (1.00) | (1.51) | (1.72) | (1.71) | (1.70) | (1.68) |
| Rural population | -0.801* | -0.44252 | -0.40785 | -0.26046 | -0.23792 | -0.40414 | 0.07166 | 0.08704 | 0.03742 | 0.04632 |
| | (-1.66) | (-1.48) | (-1.42) | (-1.42) | (-1.37) | (-0.92) | (0.20) | (0.27) | (0.17) | (0.24) |
| Deficit | 0.00026 | 0.00024 | 0.00023 | 0.00015 | 0.00015 | -0.0005 | -0.00044 | -0.00043 | -0.00028 | -0.00027 |
| | (0.75) | (0.72) | (0.71) | (0.70) | (0.70) | (-0.88) | (-0.79) | (-0.78) | (-0.81) | (-0.85) |
| Life expectancy | 0.9** | 0.773* | 0.74444 | 0.463* | 0.44568 | 0.9** | 0.62566 | 0.58092 | 0.39884 | 0.37439 |
| | (2.00) | (1.70) | (1.64) | (1.68) | (1.62) | (1.76) | (1.19) | (1.20) | (1.24) | (1.26) |
| Literacy | 0.35476 | 0.49767 | 0.50009 | 0.27002 | 0.27259 | -0.94065 | -0.7937 | -0.763 | -0.46597 | -0.45497 |
| | (0.67) | (0.95) | (0.97) | (0.88) | (0.89) | (-1.23) | (-1.14) | (-1.15) | (-1.12) | (-1.16) |
| Constant | | -0.013* | -0.013* | -008* | -0.779* | | -0.007 | -0.007 | -0.004 | -0.004 |
| | | (-1.80) | (-1.89) | (-1.77) | (-1.87) | | (-0.84) | (-0.86) | (-0.86) | (-0.90) |
| Obs. | 116 | 116 | 116 | 116 | 116 | 114 | 114 | 114 | 114 | 114 |
| Chi2 | 10.05 | 6.60 | 6.22 | 6.71 | 6.07 | 14.87 | 11.37 | 11.60 | 12.96 | 12.91 |

t-stat/z-stat are given in the parenthesis

*p<0.1, **p<0.05, ***p<0.01

All the independent variables are in the first lags.

NSDP is per capita real NSDP growth rate (y/y), Grants is the growth rate (y/y) of government total discretionary grants to the state, Rural population is the growth rate of the rural population, Deficit is the growth rate (y/y) of the states` budget deficit, Life expectancy is the change (y/y) in the life expectancy rate, Literacy is the change (y/y) in the literacy rate.