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ELECTORAL MANIPULATIONS, ECONOMIC POLICIES AND VOTING BEHAVIOR IN INDIA

BY

HARINI LETHA KANNAN

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree
of
Doctor of Philosophy
in the
Andrew Young School of Policy Studies
of
Georgia State University

GEORGIA STATE UNIVERSITY
2009

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ACCEPTANCE

This dissertation was prepared under the direction of the candidate's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Economics in the Andrew Young School of Policy Studies of Georgia State University.

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ABSTRACT

ELECTORAL MANIPULATIONS, ECONOMIC POLICIES AND VOTING BEHAVIOR IN INDIA

By

HARINI LETHA KANNAN

December 2009

Committee Chair: Dr. Sally Wallace

Major Department: Economics

This dissertation analyzes voting behavior and presence of political cycles in India. While such exercises have been carried out extensively in the context of developed countries and established democracies, there have been few studies on similar behavior in developing countries and new economies. The focus on India in this study may provide valuable insight into this literature in an area that has been largely ignored.

Our findings suggest that political manipulation of taxes, grants and expenditures are prevalent at both the national and sub-national levels; though they are tempered by the nature of partisanship. However, while these manipulations may be economically inefficient, they are politically very strategic as incumbents seem to focus on

manipulating those items for which they can claim sole responsibility. Indian voters seem to be fiscal conservatives, as they penalize increases in most items of expenditures and generally reward reductions in taxes. Evidence of yardstick effects in taxes is also presented. We find that a higher degree of 'clarity of responsibility'[1] also fosters stronger economic voting effects. Voters seem to be cognizant of the division of functional responsibility between the two levels of government (the center and the state) and they evaluate their performance independently. Also, we find results consistent with the notion that the central government is responsible for the overall health of the economy as voters seem to penalize the central incumbent for increases in inflation and reward them for steady growth while being indifferent to such outcome variables while voting for the state level incumbent.

The policy implications of such findings are also briefly discussed. It is a matter of grave concern if incumbents tailored policies to provide them with the biggest political payoff. This may lead to differences in economic development across states and the incidence of expenditure and tax changes may fall unfairly on the most vulnerable people of the society. There are also important insights on assignment of responsibility and the 'how' of political interference which would aid us in building more comprehensive political economy models that are closer to reflecting reality than purely economic models commonly used today.

[1] Clarity of responsibility exists when the voters are aware of the level of government and/or political agent to whom various policies can be attributed. When voters know who to hold responsible, they vote on the basis of economic policies and hence we find stronger economic voting effects when there is greater clarity.

CHAPTER I

Summary and Introduction

Summary

Elected political agents are expected to fulfill the various demands of their constituents; however, their actions may be more in line with fostering their own welfare at the expense of the citizens'. The public choice framework is used to model this behavior of the government and political agents. Politicians are modeled as vote maximizing agents who attempt to influence voters by using various tactics. While influencing voters by large campaign expenditures, handing out jobs to supports are examined,[2] the use of economic policies to examine voter behavior is the focus of most extant literature.

Interestingly, while the theoretical models emphasize the use of economic policies as tactical instruments to influence voter behavior, empirically this is not examined directly. Models of opportunistic behavior by the government,[3] examine the presence of election cycles in tax collections, government expenditures and deficits i.e., whether the government tries to reduce (increase) taxes (expenditures) in the election year. Models of strategic behavior[4] on the other hand attempt to discern the pattern of political redistribution i.e., who are the ultimate beneficiaries of these actions, the longtime supporters or swing voters. Though these do provide insight into the workings of the government, they do not attempt to examine whether these policies did in fact influence voter behavior. To do this one would need to examine whether opportunistic or strategic actions by politicians in the election period influenced voters to vote for them in the

[2] Jacobson (1990) and Thomas (1989)
[3] Models of political business cycles, Rogoff and Sibert (1988), Rogoff(1990)
[4] Models of tactical redistribution among voters, Cox and McCubbins (1986), Dixit and Londregan (1998)

forthcoming elections. This can be accomplished by examining the effect of election or pre-election year expenditure (taxes), economic outcomes such as income growth, unemployment and inflation on voter turnout, vote share and the probability of winning of the incumbent.

In keeping with the Indian theme instituted in this exercise; an attempt to establish a relationship between pre-election government behavior and various outcomes of elections in India is undertaken. India, a fertile ground for these kinds of excursions has been a serious matter of inquiry for many years. While electoral cycles, strategic redistributions and patronage through favorable regulations have been found to exist here; researchers concur that there is a need to examine whether voters condition their vote on economic policies and outcomes.[5]

Though voting behavior of the Indian electoral has been studied extensively; they have generally been based on surveys or case studies of individual voters.[6] Most studies that use aggregate election data do not employ rigorous econometric methodology but rather use measures of correlation to eke out a relationship between voter turnout, vote share of parties and various socio-economic variables. Kondo (2003) uses regression analysis to examine relationship between these variables and concludes that literacy, urbanization, agricultural development and political competition positively influences voter turnout, however, the importance of socio-economic variables reduce over time. Studies that use individual survey data conclude that while gender, caste, religion, education and income are important in explaining political awareness and exposure to

[5] Rodden and Wilkinson (2004) and Dasgupta (2007), in his contribution to The Oxford Companion to Economic in India emphasize this lacuna.
[6] Kondo (2007) provides a brief review of types of studies undertaken.

propaganda; they matter less in case of party preference. Recent surveys show that rising prices and unemployment are major issues that affect the electorate. Meyer (1989) concludes that Indian voters vote retrospectively, and are sensitive to short term shifts in agricultural output and the economy. This holds true even when we account for formation of new parties (Meyer and Malcolm 1993). [7]

We intend to use previous research on electoral cycles and political economy of intergovernmental transfers as a stepping stone to examine the effects of pre-election behavior of political agents on voter behavior. While there is widespread acknowledgement of the presence of electoral cycles in taxes and expenditures prior to national and state elections; these studies tend to use less comprehensive and older data.[8] Also, though research indicating the presence of political manipulation of grants also exists,[9] there has been no systematic study on the presence of cycles with respect to the most important element of fiscal policy in the hands of the central government–the intergovernmental transfer system.

This dissertation therefore attempts to provide a comprehensive analysis of political cycles in the different elements of fiscal policies available to the various governments and an exploration of economic voting effects in India.

[7] Authors hypothesize that, irrespective of economic performance; the entry of a new party may reduce votes of a ruling party.
[8] Chaudary and Dasgupta (2005, 2006) , Khemani (2004)
[9] Rao and Singh (2000), Dasgupta et al. (2007), Khemani (2004)

Introduction

The incorporation of political variables in the study of a few purely economic relationships brings abstract models closer to reality. In the vast field of political economy, the study of how elections and politics interact with the economy is accorded tremendous importance. The main strands of this literature focus on the phenomenon of tactical redistribution (Cox and McCubbins 1986, Dixit and Londregan 1998), political business cycles (Nordhaus 1975, Rogoff and Sibert 1988, Rogoff 1990, Alesina 1987), and the economic voting behavior of the electorate in response to actions carried out by politicians (Ferejohn 1986). While theories of tactical distribution examine which type of voter, core supporters or swing voters, benefit from the incumbent's largesse,[10] political business cycles examine the presence of election cycles in economic outcomes such as inflation and unemployment,[11] tax collections, government transfers, expenditures and deficits. Economic voting on the other hand analyzes the voter response to economic policies of the incumbent, and outcomes of economic policies of incumbents such as inflation, unemployment and income growth.

Empirical studies that attempt to find relationships between economic and policy outcomes and electoral fortunes of the incumbent are based on the reward-punishment or responsibility hypothesis. In its simplest version, voters condition their responses on economic policies and outcomes such as income, inflation, inequality and are assumed to reward incumbents who perform well and punish those who perform unsatisfactorily.

---

[10] Dahlberg and Johansson (2002), Olle and Navarro (2006), Dutta et al. (2007), Rodden and Wilkinson (2004)

[11] Alesina and Roubini (1990)

Recent research has enriched this model by incorporating measures for clarity of responsibility, economic geography and yard stick effects.

In India, a fertile ground for such excursions, these phenomena have been a serious matter of inquiry for many years. Political economy studies in India have focused on models of opportunistic and strategic behavior by the government. The former examine the presence of election cycles in tax collections, government expenditures and deficits i.e., whether the government tries to reduce (increase) taxes (expenditures) in the election year;[12] while models of strategic behavior attempt to discern the pattern of political redistribution i.e., who are the ultimate beneficiaries of these actions, the longtime supporters or swing voters.[13] Interestingly, while the theoretical models emphasize the use of economic policies as tactical instruments to influence voter behavior; there is a lack of studies on voting behavior in India which would validate these propositions. While electoral cycles, strategic redistributions and patronage through favorable regulations have been found to exist here; researchers concur that there is a need to examine whether voters condition their vote on economic policies.[14]

In this section, an attempt to establish a relationship between pre-election government behavior and various outcomes of elections in India is undertaken. There are many reasons why India is an excellent country to base our exercise. Extant research in economic voting behavior has focused on explaining this phenomenon in western countries with established democracies and a developed economy. Though other

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[12] Chaudhuri and Dasgupta (2005, 2006) , Keech and Pak (1989)
[13] Chibber (1995), Khemani (2003), Rao and Singh (1998,2000), Dutta et al. (2007), Biswas and Marjit (2002), Rodden and Wilkinson (2004)
[14] Rodden and Wilkinson (2004) and Dasgupta (2007), in his contribution to The Oxford Companion to Economics in India emphasize this lacuna.

countries have in been included in cross-country voting studies, the inherent instability of vote functions across nations behooves a greater need of country specific studies; so such an exercise involving India, a dynamic young democracy and developing economy would be a valuable addition to the literature. Economic voting behavior has found to be weak in countries with a low clarity of vertical responsibility,[15] i.e., when voters are unable to assign responsibility of the economic policies or performance to the different levels of government; economic factors play a less important role in decisions of voting. However, in India there is a clear delineation of the functional responsibility of each level of government in the constitution and so examining economic voting effects of elections to different levels of government is easier to justify.[16] The argument for decentralization centers on the fact that bringing the government closer to its citizens improves its functioning by enhancing the relationship between citizen needs and government services. Proponents of greater decentralization have argued that it promotes economic development and growth. Countries have been encouraged to decentralize in an effort to promote a closer matching of needs and development. But inherent in this argument is that incumbents of these levels of governments would be held accountable for their actions, free and fair elections therefore are a necessary condition for decentralization to reap its potential benefits. Therefore a result indicating the presence of economic voting in India can be interpreted as voters holding governments accountable. Finally, having established previously the nature of political economy in India, examination of economic

[15] Powell and Whitten (1993), Anderson (2000, 2006)

[16] We must note that such clarity of delineation is true in case of responsibilities entrusted with the center and the state though there is much less clarity regarding powers of local governments. Since we examine only the center and the state; this would not be of much concern.

voting behavior is the next logical step which would enhance the current state of literature in this area in India.

This study also extends the literature on political cycles in India by examining inter-governmental transfers, incorporating a larger number of states and including more recent elections.[17] To accomplish the task of examining economic voting behavior in India, this exercise proposes to analyze the following questions.

Studies involving U.S. states have analyzed the effect of macro economic outcomes such an income growth, unemployment and inflation on Presidential, Gubernatorial and state assembly elections. Such an exercise would be an interesting undertaking within the Indian context. Hence the first research question is:

Proposition 1: Are Central and State incumbents rewarded electorally for increases in income growth and central incumbents penalized for increases in inflation prior to elections?[18]

Chaudhuri and Dasgupta (2006) have unearthed electoral cycles in social and developmental spending, commodity taxes and current account expenditure, while Khemani (2006) has found cycles in excise tax collections and public investment spending in various Indian states. Ghosh (2006) finds that the property crime rate significantly drops prior to an election, so if this was due to changes in expenditure on

[17] Existing research in this area restricts its analysis to 14 major Indian states and elections until 1992. We include all Indian states with the exception of Jammu and Kashmir and analyze all election held until 2008.
[18] Though newer voting and political cycle theories argue that it is only unexpected income growth that would affect voter behavior; empirical studies have found evidence for the simpler explanation that pre-election income growth has positively influenced the electoral fortunes of the incumbent.

police we can expect voters to positively react to increases in expenditure on public safety.

Proposition 2a: How do voters react in elections for state legislative assemblies to increases (decreases) in government spending (taxes) by state level incumbents?[19]

Proposition 2b: Are political cycles persistent in state fiscal policies prior to state legislative elections?

Khemani (2003), Dutta et al. (2007), Rao and Singh (2000), Rodden and Wilkinson (2004) examine the political economy of intergovernmental transfers. They argue that a central incumbent interested in maximizing votes across the Indian states would attempt to manipulate central grants to favor either their core supporters or swing voters. Findings from these indicate that manipulable grants are provided to co-partisans at the sub-national level and to states co-partisan with central coalition partners. Given this, we can analyze the effect of such grants on vote shares of incumbents in elections to the Lower House of the parliament. A caveat however is in order; since most of these grants are not directly 'visible' to the individual voter, it may be hard to establish such a relationship.

Proposition 3a: In elections to the Lower House of the parliament, are central incumbents rewarded by voters for increases in central grants to states? Given the previous research, economic voting effects may be greater in co-partisan states.

[19] While evidence from the U.S., (Levitt and Snyder 1997, Peltzman 1992) and Canada (Evans 2006) suggest that increases federal spending improves the vote shares of House and national legislative assembly incumbents; there is also evidence from US to suggest that voters penalize increases in expenditure and may not penalize tax increases if neighboring states have also had increases (Beasley and Case 1995).

Proposition 3b: Are political cycles persistent in grants and loans provided by the center prior to national elections? How does alignment of the states matter?

Interestingly, the Indian set up also allows us to analyze a perhaps unintended political consequence of federalism. While empirical works on voting behavior of other countries focus on the effects of national and state government policies on elections to congruent levels of government; the fiscal dependence of Indian states on the national governments affords us an opportunity to examine whether the incumbent at the center manipulates policies to aid his supporters to win state elections.

Proposition 4a: How do voters react in state assembly elections to grants and transfers provided by the center?

Proposition 4b: Are political cycles persistent in grants and loans provided by the center prior to state assembly elections?

Since grants and loans from the center in India are used to finance a majority of the state's expenditures; state fiscal policy can be affected by both central and state incumbents. Therefore we also attempt to establish a relationship between vote shares of central and state incumbents and state fiscal policy instruments in national elections.

Proposition 5a: Do voters reward or penalize state (central) incumbents for changes in government expenditure and taxation at the time of national elections?

While these propositions are reasonably simple, complexities can be easily incorporated. In case of the first proposition, one can include variables to measure a state's growth relative to national growth so it would mean that voters only respond to

growth in state incomes that diverges from trends in national growth. Similarly, economic policy variables for other states can be included in the tests for the second proposition to account for yardstick competition. Research indicates that the reward and punishment effects in the U.S. are tinged by partisan flavor; Republican incumbents are more severely punished for tax increases than their Democratic counterparts while the magnitude of punishment is larger for Democratic incumbents who cut spending that when Republicans do the same. However, these effects may not be found in the Indian scenario given the fact that Indian political parties are generally populist in nature and seem to have no such distinct differences in ideology.[20] Interestingly, it has been argued that when there is low clarity of horizontal responsibility, i.e., in the case of divided or coalition governments, economic voting effects are muted. India has enjoyed a wide variety of government types, from single party government to coalitions, so variables to indicate divided governments can be incorporated to test the importance of clarity of horizontal responsibility in India.

This exercise fills the gap in the political economy literature of India with an examination of voter behavior and a more extensive analysis of political cycles. Since economic voting studies have not been extensively examined in new democracies and developing economies, this exercise would enrich this literature by examining India, which is neither.

The rest of the dissertation is organized in the following manner; chapter II provides a review of literature on the different aspects of tactical redistribution, economic

[20] Chibber (1995) argues this point and concludes that in India, political parties fight over obtaining access to state resources to dispense patronage and are not affected by different ideologies.

voting, political cycles and political economy in India; chapter III details the political and institutional set up in India while a simple theoretical model of economic voting is described in chapter IV. Chapter V provides information on data and methodology used while chapter VI contains the empirical results and analysis. Chapter VII enumerates policy implications and concludes.

CHAPTER II

Review of Literature

This section contains a detailed and critical review of the literature from which we base on analysis. Theoretical background of political cycles, tactical distribution and economic voting theories are reviewed with accompanying analysis of empirical papers which test these theories.

Theories of Tactical Redistribution

The two commonly used frameworks for analyzing this behavior have been the Cox and McCubbins (1986) and Dixit and Londregan (1998) models. While both these theories postulate that the incumbent attempts to redistribute state resources to maximize votes; the manner in which this is carried out differs across these two theories.

Cox and McCubbins (1986) view the electoral politics as a redistributive game in which candidates' strategies are proposed redistributions of welfare among the various groups in their constituencies. By modeling this as a redistributive game, the authors attempt to analyze the stability of electoral coalitions by examining which groups expect to gain from the candidates' decisions. This implies that candidates, by manipulating the incidence of taxation and allocating government expenditure, can achieve any redistribution of welfare.

These authors model candidates as rational and self interested with the objective of winning the election; and voters vote on the basis of utility received due to promised redistribution. While candidates can promise redistribution to the various voter groups

they cannot deprive any group of an exceedingly large amount; and the total amount of redistribution is constrained. The candidates promise benefits to groups from whom they obtain the largest electoral returns, i.e., votes. The candidate's optimal welfare redistribution will involve 'high return' groups obtaining large benefits while 'low return' groups bear costs or obtain nothing. Also, a high responsive group need not necessarily get more than a low response group, but if a low response group benefits then so will the high response group. To clarify the question of electoral stability, the groups are classified as support groups, opposition groups and the swing voters depending on their proclivity of voting for the candidate. The candidate's strategies are termed as stabilizing if more benefits are directed to the support groups which aids in maintaining the existing coalition. To answer the question whether this pattern of redistribution will arise out of a prior conclusion about candidate behavior, we need to state the results in absolute levels (as the proposition was that if a low response group benefits, so will a high responsive group). Therefore if groups can be strongly ordered in terms of their responses, then a pattern of redistribution would emerge wherein groups with the highest rates of responsiveness would obtain larger benefits than others.

The authors argue that opposition groups can be considered to be less responsive and support groups are more responsive. While the responsiveness of swing groups is ambiguous, any investment in them can be considered more risky than investment in support groups. Therefore a risk averse candidate would invest nothing or very little in opposition groups, more in swing groups and the most in support groups; implying preservation of the existing coalition. These propositions are supported by evidence from research on urban service delivery.

Dixit and Londregan (1998) consider the interaction between redistributive politics at central and local levels in a federal system and characterize the factors influencing success in redistributive politics. Redistribution has an ideological (egalitarian) dimension as well as a tactical (electoral politics) dimension. Redistribution is used to earn the support of groups of voters who are rather indifferent between party ideologies. The authors construct a model in which two parties L and R, compete for the votes of several groups. Each voter cares only about two things, his private consumption and an ideological issue (X). The ideological issue can be represented along one dimension; the politicians do not posses the knowledge about the voters' preferences but do know their distribution $\Phi_g(X)$ along X. The parties L, R have locations X_L, X_R in the ideological spectrum. There is a critical level X_g termed 'cutpoint' for each group such that all its members with X < X_g will vote for party L and those with X > X_g will vote for party R.

The expected number of people who vote for party; $L = N_g \phi_g(X)$ and $R = N_g(1 - \phi_g(X))$

Parties attempt to influence the cutpoints by redistribution policies and thereby the votes they receive.

Dahlberg and Johansson (2002) investigate whether there are any tactical motives behind the distribution of grants from central to lower-level (municipal) governments in Sweden. They find that temporary grants to support ecological sustainable development provided by the central government a few months prior to elections are susceptible to strategic distribution by the central incumbent. Though they find evidence in favor of the Dixit-Londregan model in which parties distribute transfers to regions where there are

many swing voters; they do not find that incumbent governments transfer money to its own supporters. Authors conclude that they cannot surmise from this study whether tactical distribution leads to a less efficient distribution of grants than if the incumbent did not exhibit any vote purchasing behavior.

Olle and Navarro (2006) employ a rich dataset from Spain with information on nearly 900 municipalities during the period 1993-2003 to test the hypothesis that municipalities aligned with upper-tier grantor government will receive more grants than those that are not aligned. Grantor governments include Central, Regional and Upper-local governments. The authors use a simple model of electoral choice and test two hypotheses; aligned municipalities obtain higher grants than unaligned municipalities and an aligned grantor provides higher grants to a municipality than an unaligned one. Though municipalities have access to own source revenues and the grant system is formulated to prevent its use for pork-barrel politics; the funding of capital spending relies heavily on grants that are decided upon by the grantor exclusively, rendering them rather discretionary. The authors find that upper level governments do provide larger grants to municipalities that are aligned (almost 40 percent more than grants provided to aligned municipalities) and this is true even if a party is a coalition leader at both levels.

Veiga and Pinho (2007) use an unexplored dataset on Portugal to examine how political variables influence the grant system with emphasis on how the patterns have changed over time as the democracy has matured. The data set consists of information on grants from the central government to municipalities in Portugal over the years 1979 to 2002. The authors test the hypothesis that a risk averse politician would favor his supporters (Cox and McCubbins 1986) against a hypothesis that politicians would expend

their resources where they can be assured of maximum gain, i.e., on swing voters (Dixit and Londregan 1998). They also test the Rogoff and Sibert (1988) model of rational opportunistic political budgetary cycles. They authors use a dynamic Generalized Method of Moments (GMM) methodology and find that transfers to municipalities do increase prior to a national and municipal election however there is no difference in the magnitude of grants provided to aligned and unaligned states. They also find evidence supporting the Dixit and Londregan hypothesis that the central incumbent will provide larger grants to 'swing' municipalities. Interestingly, the authors find that strategic manipulation of grants was more pronounced in the early years of democracy with higher grants provided to aligned and swing municipalities. For the subset of non-formula grants, the authors conclude that the grants are influenced by the timing of the election but are not employed strategically. Therefore while opportunistic behavior of incumbents increased over time (larger grants before election in later years of democracy), strategic behavior decreased (no evidence for aligned or swing hypothesis).

Though we have examined only a minuscule number of studies relating to tactical distributions; they are representative of the current state of literature. While evidence in favor of both models exists, they are largely influenced by subject country and time period under study. Though we do not attempt to test the exact propositions from these models; we use the insights gleaned from them to provide a nuance to the basic electoral cycle models. A caveat is required, though authors have used the notion of 'alignment' and 'swing' interchangeably, these are different phenomena. While alignment refers to a co-partisan at power at two levels of government, a swing region is defined in terms of 'usual' support from its residents for a party. Therefore a region could be both aligned

and swing. Since we are unable to measure the nature of ‘swing’ effectively, we use the notion of aligned versus unaligned in our analysis and acknowledge that the conclusions we make about the effect of alignment may be picking up effects due to ‘swing’ also. While previous works relating to the transfer system in India have concluded in favor of either model, we hope to extend our analysis to analyze other instruments of fiscal policy such as expenditures.

Political Cycle Theories

Studies relating elections and voting behavior to economic policies can be widely classified into two strands of literature. Political cycles examine the presence of cycles in policy instruments such as taxes, transfers and expenditures prior to an election, while studies on voting behavior examine the effect of policies on the voting behavior of the electorate. While there is an abundance of research in India for the former, a lack of research of the latter renders this exercise an interesting one. The following sections contain a review of literature for these classes of studies.

Nordhaus (1975) was one of the early pioneers of the class of political business cycles brought about by manipulations in monetary policy. These however were dismissed as naïve with the advent of the rational expectations revolution. Early political business cycle theories suggested that politician would indulge in inflationary practices prior to an election so that they can enjoy a Phillips curve trade off which is favorable in the short run. With the rational expectations revolution however, these models lost credibility as no trade off can exist even in the short run, if economic agents are fully rational in understanding the incentives faced by an incumbent government.

Rogoff and Sibert (1988) and Rogoff (1990) incorporate rational expectations theory and outlined models of political cycles in monetary and fiscal policies. Incumbents in these models use policies that appear opportunistic as signaling devices to transmit valuable information to voters in the presence of information asymmetries.

Rogoff and Sibert (1988) argue that, electoral cycles in macroeconomic variables arise due to the presence of asymmetric information. The information asymmetry exists as the incumbents are aware of their level of competency while the voters can only

observe it with a lag. Competency is defined as requiring lower amounts of tax revenue to provide a basket of public goods. Though initially unobserved by the voters, the authors show that the equilibrium exists where in the incumbent's competency is fully reveled by the taxes set. They conclude that while short-run cycles in monetary and fiscal policies can exist; the level of economic activity may not be necessarily affected.

Rogoff (1990) argues that the untenable assumptions of the adaptive expectations based political cycles diminish their usefulness and searching for political cycles in taxes, transfers and government expenditure may prove more fruitful. With rational voters and information asymmetry, he concludes that an incumbent may substitute visible public consumption expenditure for investment expenditure thus signaling his competency.

Drazen (2000) argues that it is difficult to reconcile the presence of political cycles due to manipulations in monetary policy especially in countries with independent central banks. However, since empirical results do indicate increases in money supply prior to election, he opines that it may be the result of an accommodating monetary policy followed by the central banks in response to spending increases by the incumbent signaling his competency.

The models reviewed above focus on the manipulation of monetary and fiscal policy by incumbent officials irrespective of ideology. Alesina (1987) argues that the ideology of the incumbent political party affects the nature of cycles and constructs a partisan electoral cycle consistent with rational expectations. With two parties at the opposite ends of the political spectrum having different optimal values for inflation and unemployment one may not expect any cycles. However, with uncertainty surrounding

the eventual winner; there may be positive or negative inflation surprises in the first half of the term, depending on which party, left-wing or right-wing wins the election.

Empirical evidence for the above is mixed, with evidence of the presence of cycles depending on the nature of economy, country and type of political system. Van Dalen and Swank (1996) examine whether ideology or opportunistic motives explain government expenditure growth in the Netherlands. The author argues that electoral cycles may not manifest themselves in aggregate expenditures and there is a need to examine the composition of expenditures. They examine the presence of electoral cycles in defense, infrastructure, education, health care, social security and public administration. Electoral cycles are detected in all items except expenditures on health care. Ideology does affect the types of expenditures though with a lag. While higher transfer payments are provided by left-wing governments; higher expenditures on defense and infrastructure are found under right-wing governments. The authors conclude that expenditure growth can be explained by both opportunism and ideology.

Alesina and Roubini (1992) examine the behavior of GDP growth, inflation and unemployment prior to elections using data from 18 OECD countries. While they reject Nordhaus's (1975) naïve model, they do find evidence of higher inflation after elections. The authors reason that this is due to expansionary spending prior to the election which validates Rogoff (1990) and Rogoff and Sibert (1988). They also find evidence of partisan cycles but none for permanent differences in employment and output.

Keech and Pak (1989) use data from the Veteran transfer programs in the U.S. to examine whether political cycle exists in government programs. Interestingly while a

cycle seems to have existed for the period 1961-78 prior to the transfers being indexed; the cycle disappears in the period 1979-1986 with indexation.

Reid (1998) argues that in parliamentary democracy the incumbent government can not only manipulate economic policies before elections but can schedule elections when the economy is prospering. The occurrence of these phenomenon is examined using Canadian provincial government election from 1962-92. Results indicate no evidence of incumbents manipulating the timing of elections. The fiscal variables included to examine the electoral cycle hypothesis are transfers to people, transfers to business, expenditure on goods and services and change in non-borrowed revenue. Results indicate that electoral cycles exist, with expenditures on all items except purchases of goods increasing, and revenues falling significantly prior to elections.

Schuknecht (1996) argues that empirical evidence on the presence or absence of political cycles is examined for developed countries while evidence of these from developing countries is scanty. This is especially surprising since the lack of good checks and balances in developing countries may in fact lend the system to such manipulations. This paper focuses on political cycles in developing countries. Results indicate that though countries do not experience higher output growths, fiscal deficits (expansionary spending) are lower (higher) prior to elections, however cycles are stronger in less open countries.

The general conclusion that incumbents do influence instruments of economic policy prior to elections remains, even with the increasing sophistication of political cycle models. This exercise attempts to extend the literature on political cycles to developing

countries and newer democracies, by examining its presence in India. While empirically, most of these studies measure broad aggregates in policy, we argue that it is important to examine individual items of taxation, expenditure or transfers. Electoral manipulations are costly and economically inefficient, so rational incumbents are more likely to influence a particular item in their taxes, expenditures or transfers rather than attempt a general increase or decrease. Though studies on political cycles in India exist, they are not comprehensive and tend to use aggregate measures. Our examination of disaggregated measures of taxes and expenditure, incorporation of insights from the tactical distribution literature and analysis of the grant system which constitutes the central government's most important instrument of fiscal policy would therefore provide valuable additions to the current literature.

Studies on Economic Voting Behavior

This section contains a brief review of research on the determinants of voting behavior. While influencing voters by large campaign expenditures and handing out jobs to supporters is prevalent, the use of economic policies such as the ones described below is the focus of most extant literature. These studies can widely be classified as those examining voter behavior/reactions to economic policies, especially fiscal policies such as taxation and expenditure, and those which examine voter reactions to economic outcomes such as inflation, unemployment and economic growth.

Some stylized facts from economic voting studies are, while economic voting with respect to economic outcomes such as income growth and inflation is found to exist within a country at national level elections, early cross country examinations and sub-national studies have not found such behavior. However, once variables measuring clarity of responsibility and accountability are included, evidence of economic voting behavior is found in those studies too. Economic voting effects tend to be stronger for macro level variables such as national income growth, unemployment and inflation rather than individual income growth or experience with unemployment, i.e., sociotropic voting effects are more prevalent than egotropic or pocketbook voting. Voting is also retrospective with voters basing their decisions on past performance of the incumbent rather than basing their votes on future promises.

Ferejohn (1986) constructs a model in which voters have an incentive to base their votes on incumbent behavior and incumbents choose their strategies based on this knowledge. This is essentially a model of retrospective voting with voters basing their

decision on incumbent's actual performance rather than hypothetical campaign promises. Voters are assumed to maximize their welfare given that elected officials would pursue their self interest while in office. The author concludes that voters not only need to vote retrospectively, to control politicians but also vote sociotropically.

Several other papers examine the effect of economic outcomes on voting behavior. Chappell (1990) argues that since most studies on the effect of economic conditions on U.S. presidential and House elections use only post-war data; it is difficult to draw inferences due to the small data set. He also argues that the use of opinion poll data to overcome this lacuna is not effective and proposes to use both in a seemingly unrelated regression model to explain the relationship between economic performances and voting. Estimates indicate that though there are some differences in voting and poll responses; inflation adversely affects vote share and approval while GNP growth affects them positively.

Erikson (1989) analyzes the effect of economic growth on presidential vote and finds that even after controlling for qualitative variables such as the electorate's 'likes' and 'dislikes' of incumbents, economic growth has a robust positive effect on the incumbent's vote share. Interestingly, the Erikson (1990) paper corrects for perceived measurement errors in previous work and concludes that economic conditions do not influence Congressional voting.

Brender and Drazen (2008) test the hypothesis that good economic conditions and an expansionary fiscal policy would obtain favorable results for incumbents in elections using data from 74 counties over the period 1960-2003. To overcome shortcoming of

previous research special attention is paid to factors such as new democracies, level of economic development, strength of democracy and different electoral systems. Results indicate that contrary to expectations, the probability of reelection of the incumbent increases with tighter fiscal policy over the incumbent's term in both developed and developing countries. However though voters in developing countries penalize election year deficits, voters in developing countries do not seem to base their vote on it. Higher economic growth on the other hand is rewarded by voters only in less developed countries.

Chappel and Veiga (2000) use data from 13 European countries to analyze the effects on macroeconomic variables on election outcomes. Different estimation methods are carried out. In case of a simple vote function estimation in which an incumbent's (a single party's vote or a coalition's total votes) vote share depends on inflation, unemployment and income growth; the author find that higher inflation adversely affects the incumbent. This result is corroborated with results from estimations which allow the voters to compare economic outcomes to those of other countries. Unemployment, income or consumption growth does not seem to have any relationship with votes in the preceding estimations. Since coalition governments are common in many parliamentary democracies, the authors argue that it is difficult to attribute responsibility of economic outcomes to just one party; and such responsibility is differently attributed for major and minor parties in a coalition. To incorporate this aspect; the authors estimate the vote function for each coalition party independently and obtain similar evidence as before.

Svoboda (1995) attempts to explain the lack of evidence that state level economic conditions do not affect the governor's reelection prospects by examining individual level

exit pool data from 1982 and 1986 gubernatorial elections. The author concludes that while presidential performance does affect co-partisan incumbents in gubernatorial races; voters do assign responsibility of the state's economy to the governor and therefore affecting his or her reelection prospects.

Anderson and Ishii (1997) establish the need for inquiry into economic voting effects in Japan since research thus far has been concentrated on Western democracies. The effect of macroeconomic performance, economic openness (since the incumbent's traditional supporters have been adversely affected due to the government's trade policy), electoral mobilization and political factors on voting is examined. Results indicate that the incumbent's vote share is not affected by economic factors such as high unemployment, inflation or low economic growth; but increasing openness of the economy has a significant negative effect.

Wilkin et al. (1997) argue that since there is a wide variety of political context in countries, it may be difficult for voters to use all the information in voting. Hence the authors contend that voters only evaluate the majority party in the government while voting. Using data from 38 countries the authors find that economic growth in the period prior to the election positively affects the major incumbent party; it has no effect on the vote shares of other members of the governing coalition. The authors conclude that in a multiparty system, economic voting centers around reward and punishment of the major party in power.

More recent research has incorporated measures for accountability and responsibility as better clarity of responsibility, i.e., the knowledge regarding the identity

of agents responsible for different economic policies and outcomes would strengthen economic voting effects.

Stein (1990) argues that the assignment of functional responsibility to different levels of government is vital for voters to base their voting decisions. The responsibility of the national and regional economy seems to rest with the federal government and so voters reward and punish them more so than their regional counterparts. The authors use U.S. exit poll data to test the hypotheses that economic conditions do not play an important role in gubernatorial voting, economic conditional play a role in gubernatorial elections only in races wherein the incumbent is a co-partisan of the president and finally that economic conditions play an important role in gubernatorial elections where any one of the participant is a co-partisan of the president. The results indicate that voters assign the responsibility of their personal welfare and the economy to the federal government and therefore do not base their votes in the gubernatorial races on the economy. However voting in senatorial races were a clear referenda on the federal government's economic policies.

Economic voting is most prevalent in cases where the functional responsibility of the government is clearly delineated. While in divided governments it may be difficult to apportion responsibility (horizontal clarity); such delineation is especially important in the case of a multi-layer structure of government with functional responsibilities assigned to different levels (vertical clarity). Hence Anderson (2006) argues that when the constituents find it difficult to attribute responsibility, evidence of economic voting would be weak. He tests the hypothesis that economic voting is weak in countries with divided and multi-layer governments using individual level data. Results indicate that

national incumbents are rewarded for good economic performance while lack of horizontal clarity does weaken economic voting. Increasing vertical clarity improves economic voting; and is robust to different specifications of vertical clarity. The author concludes that economic voting is strongest in presence of high vertical and horizontal clarity.

Though country specific studies have found abundant evidence that electoral outcomes have been influenced by inflation, unemployment and income growth; evidence from cross-country studies examining the same phenomenon have not been encouraging. Powell and Whitten (1993) argue that this may be due to differences in the ideology of incumbents, electoral support, the clarity of responsibility in the country and that voters may be judging the economic performance more on a relative basis than an absolute one; so including measures for these may lead to a different conclusion in cross-country studies. To test his hypothesis the author uses national election data from 19 industrialized countries. Results indicate that in countries lacking clarity of responsibility, relative economic growth, inflation and unemployment have no effect on incumbent votes. However in countries where the clarity of responsibility is high, relative economic growth is beneficial to all governments, voters penalize left-wing governments for relative increases in unemployment while penalizing right-wing governments for relative increases in inflation. The authors therefore conclude that inclusion of the above variables has led to conclusions similar to those of country specific studies.

Whitten and Palmer (1999) extend Powell and Whitten (1993) analysis by including larger number of observations, a theoretically sound method of distinguishing between different levels of clarity of responsibility and accounting for the electoral effect

of economic growth differentiated by composition of government (when a large coalition of parties with different ideology form a government, they may follow consensual policies to influence economic growth more than other macro variables such as inflation or unemployment. Hence, voters tend to use economic growth as an important determinant of their vote when confronted with coalition governments). Results indicate that clarity of responsibility enhances economic voting, retribution of voters for economic outcomes is tempered by ideology of incumbent and voters tend to give more importance to economic growth when it is a multiparty government than when it is a single party government.

Nadeau et al. (2002) build on previous research by Powell and Whitten (1993) on the importance of clarity of responsibility in economic voting and argue that the clarity measures not only vary across space but also over time in specific countries. Using individual level data from eight European countries, they construct long, medium and short term measures of clarity to extend analysis in this area. The new variables include the percent of seats won by ruling party in legislature, ideological cohesion within the ruling coalition, term of government and number of parties in the legislative assembly. When countries are not classified into low and high clarity countries; the effect of economic condition on incumbent vote is significant but small; however with the clustering of data on the basis of clarity, results indicate that economic voting is significant in countries with high clarity of responsibility. Similar results are obtained when the clarity index is included as a variable in the analysis to exploit its variability over time with a country.

Anderson (2000) argues that economic voting effects are enhanced when the there are measures of accountability. Using survey data from 13 European countries, the author includes measures of political context, which when interacted with economic variables are found to strengthen economic voting. The measure of political context include clarity of responsibility, party target size (voters find it difficult to assign blame or credit when there is a fractionalized coalition government, so a large party size would enhance accountability, also this measure tends to vary over time within a country due to elections unlike the more constant institutional measure of clarity of responsibility) and clarity of available alternatives (in countries with large number of political parties the voters may have trouble finding a good alternative for the current incumbent). Results indicate that greater clarity of responsibility and larger target party size enhanced economic effects. Also when there are fewer alternatives available for the voter to express his discontent; economic effects are stronger.

Ebeid and Rodden (2006) argue that a relationship between economic outcomes and an incumbent's reelection prospects only if public policy affects the economy and where responsibility can be easily attributed. Therefore, the author concludes that when there are other factors such as weather, natural resources and the like which affect economic performance, the voters do not hold the incumbent solely responsible for the economy and his or her reelection chances is only tenuously related to the state of the economy. This implies that economic voting would be more pronounced in more diversified economies versus agricultural or extractive ones. This hypothesis is tested using gubernatorial election data from the U.S. In estimations which do not account for the economic geography of the state; incumbent vote is unaffected by the state economy

or relative state economy (a variable that measure the state's economy relative to the national economy). However, once economic geography is accounted for, relative state economy plays an important role in incumbent vote share. The author concludes that as a state economy diversifies from agriculture and resource based one, its responsibility is increasingly attributed to the governor and therefore affects the incumbent vote.

While the previously reviewed papers generally use aggregated economic outcome or policies measures, many others focus on how an individual's experience has influenced his or her vote. While voting based on macro aggregates has been termed Sociotropic voting, behavior based on own experiences are termed pocketbook or egotropic. The following papers examine the strength of both phenomena.

Jordhal (2006) attempts to establish the relationship between macro and microeconomic outcomes and an individual's vote. It is argued that a self interested individual may vote on the bases of microeconomic outcome, i.e., outcomes that affect him personally while a more 'public' interested individual's vote may be conditioned by macroeconomic factors. However since a growing economy may be beneficial to all; voting on the basis on macroeconomic conditions does not rule out voting on the basis of self interest. Using voter survey data from Sweden the author defines macroeconomic variables as changes in unemployment and inflation while microeconomic variables subjective evaluation on an individual state of welfare. In cross section estimations the author finds that both micro and macro economic factors influence voters though macroeconomic variables are a more important than microeconomic ones. Personal experience with unemployment has the strongest effect; voters who have faced

unemployment tend to favor left-wing governments. Panel data estimation confirms these results with a stronger effect of macroeconomic variables on voting behavior.

So far we have enumerated the effect of economic outcomes such as income growth, unemployment and inflation on voting. Though it would be ideal to examine the effects of other outcomes such as education attainment, infrastructural improvement and health related ones, data for these are difficult to obtain. Hence public expenditures on various items are used as proxies and voting decisions are assumed to be based on them. Similarly, while the voters may be affected by the outcomes of lower taxation such as more efficient utilization of resources; this is hard to measure so; the revenues generated from them are used as proxies. The following papers attempt to establish a link between economic policies and voting behavior.

Cuzan and Heggen (1984) build a model in which increases and accelerations in ratio of federal expenditure to GDP adversely affects the electoral prospects of the incumbent president. They argue that expenditure and support are inversely related and rising expenditures increase the opportunity costs of budget outlays and hence erodes support. Using data from 26 presidential elections in the U.S. from 1880-1980 they find evidence to support their hypothesis.

Levitt and Snyder (1997) analyze the effect of federal spending by representatives in their districts on House elections. The reasons for the lack of evidence of a relationship, the authors argue is because the effort extended by politically vulnerable representatives is not measured. An omitted variable bias therefore exists which lead to downward biases while measuring the impact of expenditures. Using data on district level spending for the period 1983-90 and state level spending for the period 1962-90, the

authors attempt to establish a relationship between federal spending and electoral outcomes at lower levels. They argue that per capita spending in rest of the districts is a good instrument as state economic conditions may affect funds going to a state, spending in a district is correlated with this, however as long as state level economic shocks are unrelated to electoral results in a district, state spending is a valid instrument. Results from estimations using state level expenditure data indicate an increase in vote share of the incumbent by 0.9 percent for every $100 increase in per capita discretionary spending while results from instrumental variables regression using district level data indicate a 2 percent increase for a $100 per capita increase.

Evans (2006) uses the methodology popularized by Levitt and Snyder (1997) to estimate the effects of discretionary spending by the federal government on parliamentary elections in Canada. District level and provincial data are used. Results from instrumental variables estimation using district level data indicate increases in the majority share of votes by 2. 5 percent for every $100 increase in per capita spending while results from provincial data indicate a .68 percent increase. However when instruments were reformulated the magnitude of the district spending level dropped to 1.5 percent.

Peltzman (1992) examines voter's response in presidential, Senate and gubernatorial elections due to growth in federal and state funding in the U.S. from 1950 to 1988. The focus is on the changes in vote shares of the incumbent due to changes in the federal budgets. The main explanatory variable is the change in the federal spending and since macroeconomic changes may also affect their vote share, real income and inflation are included through a 'Happiness Index'. Results indicate that the vote share of incumbent decreases as spending increases, however voters are most responsive to

changes about 2 years prior to a Presidential election. Interestingly, voters do not treat changes in expenditure in defenses, subsidies or transfers differently. Expenditure growth at the state level also reduces the vote share of the incumbent governor and in contrast to the indifference between expenditures at the federal level; voters penalize governors for increases in welfare spending.

Kone and Winters (1993) use data from 407 gubernatorial elections to test the hypothesis whether changes in personal income and general sales tax policies have affected incumbent governors or incumbent party nominees in U.S. states. The authors argue that changes in income tax is expected to have more of an effect as compared to changes in sales tax; as this affects higher income, more educated and informed voters. They also hypothesize an asymmetry in voting; voters may reward lowering of taxes at a lesser magnitude than their punishment of higher taxes and since newer tax policies are more visible than changes in older ones; these would influence vote choices more. Contrary to expectations, results indicate that new increases in sales tax have a larger adverse effect than new increases in income tax. Similar results are obtained when new tax policy and new increases in taxes are combined to form an independent variable. Voters also penalize tax increases more than they reward tax decreases.

Sobel (1998) estimates the political costs of increasing taxes and reducing expenditures for members of U.S. state legislatures. The author argues that in case of recessionary crises, states may have to decide between two unpopular choices of increasing taxes or cutting expenditure. Knowledge about the political costs involved in either of these measures can help predict which of these would be finally chosen. Results indicate that discretionary tax (expenditure) increases (decreases) are politically costly.

Increases in taxes equal to one percent of state budget decreases the probability of reelection of the state legislator by .86 to 1.79 while similar decreases in expenditures decreases probability of reelection by 0.71 to 0.75. Statistical tests indicate that the costs of taxes and expenditure are equivalent. Political costs of tax increase were higher for a Republican controlled legislature than reduction in expenditures while their magnitudes were similar for a Democratically controlled legislature. Costs of Republican tax increases are larger than that of Democratic tax increases. Interestingly the author also finds than by being ideologically conservative, the Republicans lower their cost of tax increases while being ideologically liberal the Democrats lower the costs of reductions in expenditures.

Research on the political costs of taxes and expenditures tends to use aggregated measures. Landon and Ryan (1997) however argue that the voters may misperceive these and so it is important to estimate the costs of different taxes and expenditures independently. The political costs of various tax and expenditures and voter preference regarding different fiscal variables are examined using Canadian provincial data. Political costs are measured as reductions to an incumbent's probability of reelection and incumbent share of votes. Results indicate that increased expenditure on goods and services would increase incumbent vote percentage while increases in sales taxes, transfers to persons and debt reduce their share. Interestingly when all taxes and expenditure items are aggregated they seem to have no impact on vote shares. Higher sales tax, direct taxes on individuals and gasoline taxes reduce the probability of reelection of an incumbent while government expenditure increases it. As in case of

estimation using vote shares, aggregated measures of taxes and expenditure do not seem to affect probability of reelection.

Besley and Case (1995) develop a political-economy model of tax-setting in a multi jurisdictional world with incumbent behavior and voter's choices determined simultaneously. Though the political costs of raising taxes are considered to be large; the authors posit that voter behavior is ambiguous. If the voters do not believe that a tax increase is required, even a small increase can be political suicide, but if they see tax increases all around, voters may infer that such an increase is necessary. To incorporate this, the authors develop a model wherein the voters vote for incumbents based on their performance while in office in comparison to other jurisdictions. The model is one of asymmetric information with the politicians having more information on the cost of provision of goods than the voters. There are two types of politicians; 'good' ones who do not seek rents and the 'bad' ones, who finance their whims with higher taxes. As the voters evaluate an incumbent's performance comparing it to their counterparts in other jurisdictions; reelection will depend not only upon the incumbent's own policy but also on those of its neighboring jurisdictions. A theoretical prediction is that if a state has higher tax increases relative to its neighbors, the voters interpret this as evidence that their official is 'bad' and do not reelect him. Also, since tax-setting is influenced by electoral competition, there is the incentive for incumbents to trim their taxes to comparable levels of other jurisdictions (yardstick competition).

The authors use data on gubernatorial elections in the U.S. from 1960-1988 , tax data from the TAXSIM program and the Statistical Abstract of the United States to test their predictions that governor's defeat is positively related with tax increases and

negatively related to tax increases in neighboring states while tax changes in neighboring states would be correlated. The authors find that the probability of an incumbent's defeat is increased by an increase in state taxes; this effect is offset if neighboring states also increase taxes simultaneously.

Olle (2003) critiques the yardstick competition framework as it does not incorporate the process of local electoral accountability. Incumbents may not be particularly worried about the political costs of tax increases due to term limits or high probability of reelection, therefore taxes may be higher in jurisdictions where the incumbent has high expected margins of victory and will tend to mimic less. Proportional electoral rules, characteristic of European countries may lead to divided governments and since there is lower clarity of responsibility, there is an incentive for these governments to tax more and mimic less. Voters also seem to condition their vote on party ideology, for example tax increases from left leaning parties are punished less severely than tax increases from right wing parties; so leftist parties may have higher taxes and mimic less of the tax-cutting policies of neighbors. The author tests the hypothesis for three local government taxes, property, business and motor vehicles using tax and election data from Spain. Authors find evidence of mimicking behavior in case of property and vehicle taxes. Results indicate that tax rates seem to be higher and less intense mimicking is observed in municipalities where the elected official has wider winning margins, where the government is left leaning and during non-election years. However tax rates are not found to be higher in case of coalition governments and they also do not mimic less.

Brender (2003) examines the circumstances under which voters reward fiscal responsibility using data on mayoral elections from Israel held in 1989, 1993, 1998. The

author argues that since localities faced soft budget constraints and there was a lack of data on their fiscal positions during the late 1980s and early 1990s, voters may not be basing their votes on the fiscal performance of mayors in these elections. However, by 1998 mechanisms promoting hard budget constraints and speedy dissemination of information were in place which imply that fiscal performance could have been an important determinant of votes in that election. Results indicate that fiscal variables such as larger deficits, accumulation of debt and higher debt did not affect mayoral reelection in the 1989 and 1993 elections while their presence significantly reduced the probability of reelection in the 1998 elections. There was no evidence in favor of an election cycle hypothesis. Interestingly when student graduation rates during a mayor's term are included as proxies for service quality, it is found to positively influence the probability of reelection in the 1993 and 1998 elections. This implies that voters not indifferent to local issues in the earlier elections, rather the lack of information on fiscal variables prevented the voters from basing their vote on them. Unpopular incumbent mayors in the earlier election were not penalized for running up large debt while they were punished in the later elections signaling the effect of change in the rules of the game. Voters also favor mayors who avoid wage excesses, collect taxes efficiently and undertake more development projects.

Drazen and Eslava (2007) construct a political business cycle model in which the incumbents attempt to influence voters by changing the composition of government expenditure. Citing previously conducted research they argue that it may not be rational to increase aggregate spending or deficits in an election year, however by changing the composition of expenditure to one that is closer to the voters' preferences, the incumbent

can benefit. This is due to the fact that the voter cannot distinguish between politicians doing so to gain votes and politicians whose spending patterns closely mirror what they prefer. In such a scenario political cycles emerge even if voters are fiscal conservatives and fully informed of policy. Using data from Colombian provinces they find that the composition of expenditure does change with increases in investment spending and decreases in current account expenditure. Their findings on voter responses also suggest that while voters do penalize deficits; they value investment expenditures. Incumbent's vote share increases (decreases) with increases (decreases) in investment spending (deficits).

In an atmosphere where tax policy plays and important role in campaigning while political scientists dismiss its role in electoral outcomes; Johnson et al. (2005) attempt to establish a relationship between electoral outcomes and income taxes in Britain. The authors argue that tax to GDP ratios and standard tax rates do not effectively capture the incidence of income tax on individuals; so in addition to standard and marginal tax rates they use microsimulation measures to construct an 'effective' tax rate based on standard rates, exemptions and deductions. While no significant relationship emerges in case of the standard and marginal tax rate; increases in effective tax rates have adversely influenced the incumbent's electoral outcome. This result is further strengthened in case of married tax payers.

Martinusen (2004) argues that testing for relationship between economic performance and electoral outcomes has not been extended to the local levels mainly due to inability of attributing responsibility of economic outcomes to the local government which presupposes the ability to identify the existence of such a government. This is due

to that fact that local governments tend to govern with bi-partisan consensus so attributing responsibility is indeed difficult. However since local governments within a country face the same national laws and regulations and are relatively homogenous, it would be easier to find the effect of economic outcomes keeping fixed history and political context. The increasing politization and partisan nature of local governments in Norway, the author opines clarifies accountability and hence uses data from Norway local government elections to establish a link between electoral outcomes and economic and political variables. Economic variables include local level unemployment, local fees, charges, taxes, coverage and productivity of services while political factors include ideology, nature of government, national support of the incumbent party and the like. The author concludes that though political factor seem more important in influencing the electoral outcomes at the local level than economic outcomes; increases in unemployment and local charges do affect the incumbent party's vote shares adversely. Interestingly when the data is re-estimated to account for both changes and levels of the variables; the author finds that the incumbent is adversely affected by the level service coverage and not changes in service charges, though changes in unemployment still play a vital role.

Brender and Drazen (2008) use data from 74 countries to test whether good economic performance and expansionary fiscal policies are rewarded by voters. Specifically they test whether deficits, loose fiscal policy and economic growth in the period prior to the election raise the probability of reelection and whether the nature of economic development, age of democracy and differences in electoral systems affect voter retribution differently. Results indicate that deficits prior to the elections are

penalized severely by voters while they reward improving budget balances over an incumbent's term in office. Economic growth over an incumbent's term is also rewarded. Interestingly when countries are differentiated according to the level of economic development, the authors find that while voters in all countries penalize budget deficits over an incumbent's term; expansionary fiscal policy adversely affect reelection prospects only in developed countries and higher economic growth is rewarded only in less developed countries

We attempt to provide a flavor for the above arguments and conclusions in this section, since the focus of this dissertation is on economic voting and we draw our questions from a variety of these papers, this section is far more extensive than others. Though the literature on economic voting has evolved from naive studies examining the relationship between incumbent vote and growth to ones that incorporate yardstick effects, measures of clarity of responsibility and ideology of incumbent; the conclusions regarding economic voting has not been extended to developing countries. With the exception of Landon and Ryan (1997) most of these papers also examine voter behavior with respect to aggregate measures of economic policy. However, in reality, voters may be influenced by a few elements in the incumbent's economic policy and base their decisions on them. Such nuances related to voter behavior may be lost when aggregates are examined and may lead to erroneous conclusions that economic voting does not exist. This exercise attempts to overcome the shortcomings of previous research by examining the presence of economic voting in India while incorporating disaggregated measures of economic policies, yardstick effects and insights from the literature on clarity of responsibility.

Political Economy in India

The rich diversity of political agents, levels of governments and the institutional set up in India makes it an interesting area for research in intergovernmental relations. Research testing the various theories of redistribution, political business cycles, government responsiveness and regulation in the Indian context are reviewed in this section.

It has been acknowledged that the intergovernmental grant system through which the central government provides transfers to state governments through various channels; has been influenced politically in India. Many papers hence examine the transfers through the prism of tactical redistribution theories. A large selection of these is reviewed below.

Rao and Singh (2000) use panel data on transfers from the central to state governments in India to test whether the economic importance of a state measured by its state domestic product and political strength measured by a state's importance in the ruling coalition and political alignment with the central government influences the level and composition of per capita transfers to states.

The authors find some evidence that political bargaining does exist when transfers are distributed with the population of a state (which is interpreted as political capital) being the most important determinant. Surprisingly they find that aligned states get lower centrally sponsored and central plan schemes transfers

Khemani (2003) argues that while extant research on the political economy of intergovernmental transfers finds evidence of political bargaining in the distribution of

grants; a common policy implication to prevent their strategic manipulation is to have an independent body entrusted with the responsibility of their distribution. However since there is no study on the effectiveness of such an authority; the author attempts to fill the gap in this literature by analyzing how politics affects the transfer system in India where two institutions the Finance and the Planning Commissions, carry out the distribution. The hypothesis is tested using data on transfers to 15 states in India over a period of 24 years, (1972-1995). In addition to the economic variables such as state income and population that may influence the amount of transfers, three political variables are included. 'Affiliation' is a dummy variable that takes the value of 1 if a state government is affiliated to the central incumbent and 0 otherwise. The other variables include the proportion of seats from the state controlled by the national ruling party and the interaction between the above. The author concludes that transfers more amenable to control by political agents are indeed manipulated by them. The author finds that statutory transfers are generally progressive in distribution across states with more of their variation explained due to income and population. With the inclusion of political variables, plan grants are directed towards affiliated states; affiliated states with a lower share of national ruling party members of Parliament obtaining more grants. The author suggests this provides an idea about the objective of the ruling party–maximization of the number of seats won in the election. Surprisingly statutory grants are provided in smaller amounts to affiliated states. These contrasting results for the different types of grants is interpreted as an transfers from an independent body is not open to political manipulation and its presence counteracts the effects of political opportunism.

Dutta et al. (2007) construct a model of distributive politics where the central government is opportunistic and uses its discretion to distribute grants to states on the basis of political considerations. These considerations are whether a state is aligned with the center or is a swing state. This model is tested using data on 14 Indian states from 1974 to 1997. The authors hypothesize that when the central government's objective is to maximize expected vote share across states, it would try to buy votes from states which have been it support base, i.e., they are aligned and from states which have a large percent of its voters who are easily manipulated, i.e., swing states. The benchmark model focuses on the first case where the central incumbent party is interested in promoting its interests at the state level. Results indicate that states which are aligned and characterized as swing in the *Vidhan Sabha* (state assemblies) and irrespective of nature of swing in *Lok Sabha* (lower house of the Parliament) elections on an average receive higher per capita grants. The authors perform various robustness checks and conclude that the central incumbent does indeed provide higher transfers to states which are swing and aligned.

Rodden and Wilkinson (2004) argue that while research on the political economy of intergovernmental transfers attempts to find evidence in favor of either the legislative bargaining model or the theories of a strategic unitary executive; the suitability of these theories depend on the existing institutions in a country. For example, a legislative bargaining approach would be a better fit for presidential systems while a strategic unitary executive theory fits British style Westminster systems. The authors point out that India's democratic history can be divided into two phases; a Congress party dominated phase that functioned like a unitary executive and the later period of coalition

governments which allows for the testing of these two theories. To determine the nature of political manipulation of grants, the authors use data on grants and loans to all Indian states from 1957 to 2003. Since the political system in India has changed dramatically the authors split the period of survey into two parts, the years of Congress domination and years when coalition governments ruled. Core support states is proxied by the share of the state's *Lok Sabha* delegation controlled by Congress while swing states are proxied by a measure that takes the absolute difference between the share of each state's legislative delegation controlled by congress and 50 percent. To test alignment effects, a dummy variable is used. Results indicate that Congress dominated states have been favored, however the Congress central incumbent has favored both core supports, swing states and states which were governed by Congress chief ministers. In the coalition period from 1995, junior coalition partners are favored along with states that have parties in the *Lok Sabha* providing 'outside' support.[21] Aligned chief ministers get more grants while surprisingly states with at least one party common between state and national coalition obtain lesser grants. The authors contend that this may be due to the disfavoring of junior coalition partners.

The preponderance of research on the tactical manipulation of government behavior notwithstanding, it is important to examine the effect of politics on other instruments of government policy. Biswas and Marjit (2002) argue that since among central disbursements, the two most important ones are letters of intent and industrial

[21] Outside support of the government by a party in Indian political parlance implies that the party supports the single largest party in government formation but will not be a part of its cabinet.

licenses;[22] there is a need to examine the determinants of this type of disbursement. Since lobbying is not explicitly carried out in India; they create indices for bargaining power of the states. Lobbying power for a state can be calculated as the summation of proportional representation of various categories of ministers in the cabinet contributed by the state in question, normalized in terms of the state population. Other measures include voter turnout in earlier elections (states with higher turn outs are favored as they provide with a higher rate of 'return'), an index to measure opposition unity (states with higher opposition unity are favored as the incumbent who want to win reelection would lobby for more disbursements), percent of MPs from a state who are a party of the ruling coalition (lobbying power) and a dummy for the alignment of state governments. The authors find a state's income is an important determinant in disbursement of licenses; this is interpreted as evidence of private sector lobbying (a state's income is a good proxy for private capital interests). State lobbying in council of ministers in pre-reform and non-coalition years, voter turnout, alignment, election years and opposition unity also emerge as important determinants. Since the reforms implemented in the early 1990s virtually scrapped licensing policies for most industries; the reform dummy shows negative significance.

Though, not very comprehensive, the following papers on political cycles in chronicle its presence in India. Chaudhuri and Dasgupta, (2005) attempt to quantify the effect of a national election and the type of central government on economic policies implemented using annual data from India. The hypothesis are based on Rogoff and

[22] Industries employing over 100 workers and with fixed assets worth over a million Rupees needed to obtain a license to establish new industries or extensions to the current one as mandated by the Industries Act of 1951. This policy was largely abandoned with the implementation of economic reforms in the early 1990s with a few exceptions.

Sibert (1988) who postulate that before elections an incumbent with a view to remain in power will lower tax revenues and raise public expenditures to signal competency to the electorate, while Rogoff (1990) allows the government to undertake two types of expenditures, public consumption and investment, and since public investment expenditure is assumed to be imperfectly observed by voters there would a shift in favor of public consumption expenditure before elections. They also explore the hypothesis that a coalition government would be predisposed to higher debts as partners' demands need to be fulfilled without the imposition of higher taxes.

The authors do not focus primarily on the deficit but look into tax collections (income, corporate and excise and custom duties), central government developmental expenditure and developmental expenditure on agriculture, per capita subsides for fertilizer purchase, publically distributed food grains , the central government budget , expenditure on infrastructure (schools, railways, roads) and measures of monetary policy such as per capita money supply, discount rate and deposit rate at commercial banks. The political variables include a dummy for election year and coalition (measuring the amount of time a coalition government was in power at the center) and majority (measuring the proportion of seats won by the ruling party). Since the beneficiaries of a cut in excise taxes would be the poor and the middle class we may expect to see a political cycle in them; a similar argument holds for income taxes. The authors find an electoral cycle in case of excise and income tax and coalition governments have no differential effects on tax policies. Surprisingly the authors find evidence of electoral cycles in case of expenditure on agriculture, distribution of food grains and fertilizer subsidy while there is no evidence that coalition governments spend more than majority

governments. An electoral cycle also exists in case of central government deficits however they are not affected by the type of government. The authors hypothesize that coalition governments would want to provide benefits to their small number of supporters and these may be effectively doled out through infrastructure projects than expenditure on education and healthcare which would benefit many, so spending on infrastructure would be positively related to presence of coalition governments. They find evidence in favor of this. While they find no cycles in money supply and discount rates, a clear cycle emerges for deposit rates, the authors conclude that since the central government until recently mandated these rates, they raised them to buy votes from savers.

Chaudhuri and Dasgupta (2006) use data from 14 Indian states to investigate whether state governments' fiscal policies are affected by the prospect of approaching elections. They also analyze the effects of a non-cohesive coalition on policies. The main explanatory variables are the degree of fragmentation of a government in a given year and an election dummy denoting the presence of an election. Interestingly the authors acknowledge the issue of incumbents strategically manipulating the date of the election and therefore differentiate between scheduled and early elections. Results indicate that states collect lower commodity tax revenues in election years and fragmented governments collect lower non-tax revenues that cohesive ones. The authors find that state governments spend lesser (current account expenditure) on average during an election year, contrary to Rogoff and Sibert's (1988) propositions. However state governments do undertake up to 6 percent higher capital developmental expenditure (social and economic services) in election years. This is mainly due to spending on

agriculture and industry and is interpreted as strategically manipulating expenditures to affect a small number of pivotal voters.

Khemani (2004) analyzes the impact of elections on economic policies in Indian states. A methodological innovation to instrument for the potentially endogenous elections is employed. The author finds that state governments manipulate fiscal instruments that target benefits to narrow interest groups, for example, excise tax collections (public investment spending) tend to be lower (higher) in election years.

Though political business cycle models have been around for many years; most of these models do not account for the potential endogenity of election timing which is an important feature in a parliamentary democracy. To overcome this shortcoming; Chowdhury (1993) develops a political-economic interaction model for India. India is an interesting study since four out of the ten general election held since 1952 till 1991 have been called for before the term has ended. A simultaneity bias exists as while the incumbent can call for an election when the economy is performing well, he or she can also manipulate the economy prior to an election. A mixed qualitative and continuous variable simultaneous equation model approach is used to resolve this issue. The author finds no evidence in favor of the hypothesis that incumbents manipulate the economy. However, there is strong evidence in favor of the hypothesis that the incumbent calls for elections when the economy is doing well.

Using data from major Indian states Ghosh (2006) attempt to unearth the effect on impending elections on the crime rate. While existing research has found political cycles in fiscal and monetary policy; crime rate is chosen as it is the outcome of the

government's social policy. The author argues that an incumbent politician may exert effort to reduce crime rate prior to an election. Since the phenomenon of calling for mid-term elections (elections before the term of current government is completed) in India; the author argues that it may be difficult of the incumbent to manipulate policies. However, policies can be easily manipulated prior to scheduled elections; so one may expect to find political cycles in case of scheduled elections. Results indicate a strong evidence of political cycles in property crimes rates with property crimes reducing significantly prior to a scheduled election; with the same increasing prior to a mid-term election.

While economic voting has generally been ignored in the Indian case, some research exists with respect to effect of socio-economic factors on voting decisions. Though voting behavior of the Indian electorate has been studied, the studies have generally been based on surveys or case studies of individual voters.[23] Most studies that use aggregate election data do not employ rigorous econometric methodology but rather use measures of correlation to eke out a relationship between voter turnout, vote share of parties and various socio-economic variables. Kondo (2003) uses regression analysis to examine the relationship between these variables and concludes that literacy, urbanization, agricultural development and political competition positively influences voter turnout, however, the importance of socio-economic variables diminishes over time. Studies that use individual survey data conclude that while gender, caste, religion, education and income are important in explaining political awareness and exposure to propaganda, they matter less in the case of party preference. Recent surveys show that rising prices and unemployment are major issues that affect the electorate. Meyer (1989)

[23] Kondo (2007) provides a brief review of types of studies undertaken.

concludes that Indian voters vote retrospectively, and are sensitive to short term shifts in agricultural output and the economy. This holds true even when they account for new party formation (Meyer and Malcolm 1993).[24]

Though some research on political cycles exists, these are not comprehensive and ignore the central government's main tool of policy, the grant system. This, coupled with the complete lack of research on economic voting effects has encouraged us to embark on this exercise.

[24] Authors hypothesize that, irrespective of economic performance; the entry of a new party may reduce votes of a ruling party.

Summary

The preceding sections, while provided us with an overview of the current state of literature in political economy; it also pointed to its glaring shortcomings. The lack of studies based on developing countries and the use of aggregated measures to examine the presence of political cycles and voting behavior; has provided us with justifiable reasons to undertaken an analysis that would enable us to addresses this lacuna. In addition to this, insights from theories of tactical distribution and clarity of responsibility help us to make more nuanced conclusions regarding economic voting and electoral manipulation.

The two broad research questions examined in this exercise are pre-election manipulations of central and state governments and economic voting behavior of the Indian electorate. While the presence of the former has been documents by other studies, this exercise attempts to enrich the literature by concentrating on different disaggregated measures of policy, analyzing pre-electoral manipulation in the intergovernmental grant system and incorporate insights from clarity of responsibility models to present a more sophisticated analysis.

Voting in India has generally been examined through the prism of caste, religion and regional associations, however it is acknowledged that electoral fortunes of an incumbent is influenced economic growth , inflation and economic policies. This exercise attempts to quantify that notion while also answering the broader question of whether conclusions regarding economic voting can be extended to developing countries.

Specifically we would examine the effect of taxation, expenditure and other economic policies on incumbent vote shares. Given the Indian set up we can examine the

effect of central government economic policies on voter behavior in national elections, effect of state government policies on state elections and as mentioned before; the effect of central government policies on state level elections. In addition to voter behavior analysis, we also wish to extent the existing literature on political cycles in India.

CHAPTER III

Political and Institutional Set Up in India

India is the second most populous country in the world with over 1.1 billion people[25] constituting about 17 percent of the world's population. India's population is almost four times as that of the U.S., the third most populous country in the world. Indian states encompass large diversity in area, population and their economy. Many states in India have populations that are larger than most European countries, with the most populous state, Uttar Pradesh having a population of over 181 million, even larger than that of Pakistan, the sixth most populous country. [26]

Growth rates of states are not converging in India, with significant differences also present in infrastructure and human development. The per capita income of the richest state Punjab is more than four times that of the poorest state, Bihar.[27]

In this section we present facts about the political institutions, electoral history and the set up of Center-State relationship in India.

The Indian Government

India is a federation of 28 States and 7 Union Territories. India has a three tier system of government the Central, State and different local governments. The Parliament is the supreme legislative body of India. The Indian Parliament comprises the two

[25] Official Indian Population Clock, Census of India
[26] List of Countries by Population, Wikipedia accessed January 22nd, 2008
[27] Rao and Singh (2005)

Houses-*Lok Sabha* (House of the People, also known as the Lower House) and *Rajya Sabha* (Council of States, also known as the Upper House).

The *Lok Sabha* is comprised of elected representatives chosen by direct election through adult suffrage. The maximum strength of the House envisaged by the Constitution is 552, which is made up by election of up to 530 members to represent the States, up to 20 members to represent the Union Territories and not more than two members of the Anglo-Indian[28] community to be nominated by the President, if that community is not adequately represented in the House.[29] The total elective membership is distributed among the States in such a way that the ratio between the number of seats allotted to each State and the population of the State is the same for all States. The country is divided into 543 territorial constituencies from each of which a Member of Parliament is elected. The plurality or 'first past the post' system of voting is used, wherein the candidate obtaining the largest number of votes is declared the winner. According to the Constitution, elections are to be held once in every five years, unless the parliament dissolves earlier. Therefore the *Lok Sabha* is not a permanent body, but dissolved every five years when a general election is held.

The *Rajya Sabha* consists of 250 members: 238 members representing the States and Union Territories, and 12 members nominated by the President. *Rajya Sabha* is a permanent body and is not subject to dissolution. However, one third of the members

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[28] Article 366(2) of the Indian Constitution defines an Anglo-Indian as 'a person whose father or any of whose other male progenitors in the male line is or was of European descent but who is domiciled within the territory of India and is or was born within such territory of parents habitually resident therein and not established there for temporary purposes only'.

[29] This right was secured from Jawaharlal Nehru by Frank Anthony, the first and long time president of the All India Anglo-Indian Association. The community is represented by two members. This is done because the community has no native state of its own.

retires every second year, and is replaced by newly elected members. Each member is elected for a term of six years. Members are elected by the Electoral College consisting of elected members of state Legislative Assemblies by means of proportional representation.

Given that members of the *Lok Sabha* are directly elected; it is not surprising to find an imbalance in the powers of the two Houses. The *Lok Sabha* enjoys significantly greater power than the *Rajya Sabha*. *Lok Sabha* is the House to which the Council of Ministers is responsible under the Constitution. Money Bills can only be introduced in *Lok Sabha*. Also it is the *Lok Sabha*, which grants the money for running the administration of the country.

Nominally, the head of the country is the President in whom all executive powers are vested, but the real administrator of the country is the Prime Minister. After the national elections are held the President calls the most suitable candidate to form a government at the center. This candidate usually is the head of the largest party in the parliament. To form the government, a party and its allies require to have won at least 51 percent of total seats in the parliament. In case the government resigns because of any reason, the President can request another candidate to form the government. The President can also declare, according to government advice, on new elections and if necessary, an emergency state.

Legislative Assemblies are the highest legislative bodies in states. Each state has an assembly to which representatives are elected through the plurality system of voting. The usual term of an assembly is five years after which a state election is called. The state

is divided into constituencies from which Members of Legislative Assembly are elected. Some states have a bicameral system, so another body, the Constituent Assembly also exists.

The head of a state government is called Chief Minister, who is member of the state Legislative Assembly. Constitutionally, the figurehead of the state is the Governor, who is appointed by the President according to the advice of the central government. After the state elections the governor calls for the suitable candidate to form the government. In general the governor has more legislative rights at state level than the President has at national level. The governor can call on early elections in the state, or dismiss the government if there is reason to believe that the government has failed or is unstable.

The 73rd and 74th Amendments to the Indian constitution (in 1992) deemed it mandatory for the states to establish local governments. The 73rd Amendment deals with the establishment of rural local governments (which are also known as *Panchayati Raj Institutions* [PRIs]) and the 74th Amendment made the provisions relating to urban local government (*Nagarpalikas*). All States now have a uniform three tier *Panchayati Raj* structure. At the base is the *Gram Panchayats*. A *Gram Panchayat* covers a village or group of villages. The intermediary level is the *Mandal Panchayat* (also referred to as *Block* or *Taluka Panchayat*). The intermediary level body need not be constituted in smaller States. At the apex is the *Zilla Panchayats* covering the entire rural area of the district. The amendment also made a provision for the mandatory creation of the *Gram Sabha*. The *Gram Sabha* would comprise of all the adult members registered as voters in the Panchayat area. Its role and functions are decided by State legislation. Urban areas in

states have Municipal corporations for big cities, town municipal committees and *Nagar Panchayats* for areas in transition.

Fiscal Federalism in India

The Indian federal set up and their relationship between have been prescribed in the Constitution. The Constitutions initially provided for two levels of government, the center and the state while amendments (73rd and 74th) in 1992 allowed for the establishment of local governments. The Union, State and Concurrent Lists of the constitution lay out the expenditure responsibilities and taxation powers of the various levels of government. While items mentioned under the Union and State lists are under the purview of the central and state government respectively; both the state and the centre can legislate on items in the Concurrent List. However in case of a conflict between the state and the central government regarding items on this list; the views of the central government prevail.

Tax and Expenditure Assignments

The central governments functions include those required to maintain macroeconomic stability, international trade and relations (issuing of currency through the central bank, banking, insurance, dealing in foreign exchange and foreign loans), issues that affect more than a single state (operation of railways, post, atomic energy , air transport interstate commerce and the like) and defense. The states are responsible for local governments, within state commerce, inland transport and communication, public health and sanitation, law and order, agriculture and irrigation. Though economic and social services such as education, social security and insurance, employment and

unemployment are items on the Concurrent List, in virtue of their proximity to the people, states have large role to play in these areas.

In 2000-01, states' spending constituted about 58 percent of total government spending, while they collected about 34 percent of the revenue. The states' share of spending on social and community services (education, medical and health and welfare) was about 90 percent of total spending on this item while it was about 60 percent for economic services (agriculture, industries, transport, power and irrigation).[30]

The assignment of taxation powers in based on the principle of 'separation of the bases'; the various lists outline the tax bases open to the different levels of government. The important sources of tax revenue for the center mentioned in the Union List include taxes on all income except agricultural income, corporation taxes, custom and export duties, excise duties and tax on services. Central tax collections stood at 10.22 percent of the GDP in 2004-05. Corporation tax and income tax comprised of 30 and 17.5 percent while union excise duties and custom duties comprised of 27 and 17.4 percent of total tax collected in 2006-07.[31]

Sources of tax revenue for the state governments mentioned in the State List include tax on sale and consumption of goods, tax on land and buildings, motor vehicle tax, taxes on agricultural income and duties on goods manufactured or produced in the state. State's own tax revenue as a share of GDP was almost 6 percent in 2004-05. While direct taxes constitute only 2.8 percent of total tax revenue, sales and state excise taxes

[30] Rao and Singh (2005)
[31] Taxation in India 1925 to 2007 (2007), Edited by M.M. Sury.

constituted about 55.5 and 12.8 percent of total tax revenues in 2004-05.[32] The most important non-tax revenues for the state government are grants in aid from the Central Government and other grants from the central government. Other sources of revenue for the state government include incomes from undertakings owned fully or partially by the state government, fees for services provided and borrowings which have to be authorized by the Central government.

The Concurrent List does not contain any tax item so that the center and state are prevented from taxing the same base. The center has precedence over state in the matter of making laws regarding subjects in this list. The center also enjoys residual powers, if a tax base in not mention in the Union and State Lists, the center has the right to tax such a base.[33]

Before the 73rd and 74th amendment, only two levels of governments, center and state were provided for by the constitution. Local governments, if present were constituted by the states. With the amendments, the states have a constitutional obligation to create a variety of local bodies corresponding to population size, both for rural and urban areas. The local bodies however are still creatures of state which determine their jurisdiction and assign subjects and resources to them out of the State List. In reality there is very little decentralization to the local governments.

Mechanisms of Intergovernmental Transfers

Since tax bases were so divided that the central government would enjoy larger and more elastic tax bases, leading to a vertical fiscal imbalance between the center and the state and inter jurisdictional spillovers were present; various inter governmental

[32] Ibid.
[33] The 88th amendment, which allowed the center to tax services, was implemented due to this feature.

transfers were instituted. There are four channels of explicit transfers in India. The constitution provides for the devolution of taxes collected centrally and grants in aid (also known as statutory grants). The Finance Commission a constitutional body appointed every five years by the President of India; makes recommendations on distribution of taxes between the center and states, its appropriation among the different states and principles governing distribution of grants in aid of revenues to states.

Grants and loans for implementing development plans are distributed by the central government to the state governments in accordance with recommendations provided by the Planning Commission. Prior to 1969 these grants and loans were distributed according to the discretion of the central government. Since then, plan assistance is distributed according to the Gadgil formula approved by the National Development Council. Elements included in the formula are state population, per capita state GDP, fiscal management and special problems experienced by the state. Another channel of transfers is through grants provided by the various ministries to their counterparts in the states for specified projects either wholly funded by the Center, (Central sector projects) or requiring the states to share a proportion of the cost (centrally sponsored schemes).

The Finance Commission's operation and recommendations have come under serious criticism since it is confined to work on only non-plan items in the States' budgets and the Planning Commission works on the plan items. This unwieldy distribution prohibits the Commission from analyzing the fiscal condition of the states holistically. It also provides incentives for misrepresentation to both Commissions by States in a bid to increase their transfers. The Finance Commission uses the 'gap-filling'

approach to distribute grants provided for under the Article 275 (1) of the constitution. Taking into account a states' non-plan expenditure, its share in devolved taxes and own source revenues, grants are provided to close deficits. This provided no incentives to states for prudent fiscal behavior. This methodology was converted into one which accounted for the fiscal capacities of states by the Ninth Commission but was abandoned by the Tenth. Later Commissions have however begun to partially allow for the fiscal capacity. Criticisms levied against plan assistance are that it has no relationship with the investment requirements of states and repayment capacity is not taken into account while providing loans. The harshest criticisms are reserved for assistance provided via Central sector and centrally sponsored schemes accounting for about 20 percent of the transfers; as these are subject to discretion by the central government. While the economic rationale behind these grants is intra-state spillovers; they are an example of the Central government interfering in the allocational activities of state governments. The scope of these grants has been expanded since 1970 when other plan assistance was done through the Gadgil formula. There are over 225 Central programs in action today.

Per capita transfers (in real terms) from center to states have increased over 3 times from Rs.198 in 1975-76 to Rs. 633 in 2001-02. As percent of GDP transfers have increased from 3.7 percent to 4.5 percent in the same period. Transfers constituted about 38 percent of states' revenues and 28 percent of state's expenditures in 2001-02. [34] Finance Commission transfers in the form of tax devolution and grants was 64.6 percent of total grants to states during the fourth plan (1969-74) and decreased to 61 percent during the seventh plan (1985-90). In 2001-02, this has risen to 64.2 percent. Planning

[34] Transfers under the purview of both Commissions are included.

Commission transfers in the form of state plan grants and Central schemes has increased from 24.4 percent during the fourth plan (1969-74) to 35 percent during the seventh plan (1985-90). In 2001-02, this has fallen to 31.5 percent. There has been a steady increase in the discretionary element of transfers as witnessed by the increase in proportion of grants provided through the central schemes from 11.5 percent during the fourth plan (1969-74) to 18 percent during the seventh plan (1985-90). In 2001-02, this has fallen to 14 percent.

Rao and Singh (1998) conclude that many channels of implicit transfers exist in India. These undermine the ends to which the explicit transfers are utilized. The common forms of such transfers are inter-state tax exportation, subsidized lending from financial institutions and the center.

Elections and Political Parties in India

India is a multiparty democracy with small regional parties gaining importance and popularity over the last few years. National parties are those which are recognized by the Election Commission (an independent body that is responsible for conducting elections) in more than four states. A political party is considered to be a state party if it has engaged in political activities for the past five years and has as elected members, at least 4 percent of the state's *Lok Sabha* seats or 3.33 percent of state assembly seats; or obtained 6 percent of the valid votes polled in a general or state level election. There are over 700 registered (with the Election Commission) but unrecognized parties actively participate in the Indian political landscape. Though the number of State and unrecognized parties change over the years; the number of national parties has remained almost the same. The Indian National Congress (INC hereafter) has remained a national

party since the first election in 1951. Other parties such as the Communist Party of India (CPI) and Communist Party (Marxist, CPM) are also national parties active since 1951 and 1967 respectively. Though Indian politics has been dominated by the INC, other parties have provided some opposition; with parties such as the Bharatiya Janata Party (BJP) proving to be the biggest and most consistent one.

Independent India has conducted fourteen general elections for the formation of the central government since 1951. Interestingly the vote share of the National parties has remained high, changing from 76 percent (in 1951) of the total valid votes to approximately 63 percent (in 2004). However since 1996 there is a marked decrease in share of national parties, this is reflected in the composition of the central government with a single large party such as the INC or BJP forming the government with the support of state parties such as the Dravida Munnetra Kazhagam (DMK), All India Dravida Munnetra Kazhagam (AIADMK) from Tamil Nadu, Telugu Desam Party (TDP) from Andhra Pradesh, Rastriya Janata Dal (RJD) from Bihar, Shiv Sena from Maharashtra , Janata Dal from Bihar and Karnataka and the Bahujan Samaj Party (a national party with significant presence in Uttar Pradesh).

Among the National Parties, the INC'S share of votes increased from 45 percent in 1951 to 49 percent in 1984 and fell to 26.53 percent in 2004. The INC has been in power at the center for 48 of the 60 years that India has been independent. The Communist parties have garnered on an average about 8 percent of total votes while the BJP which entered the political arena in the late 1970s obtained 7.7 percent of votes in 1984 with its share increasing to 25.6 percent in 1998.

The current government headed by Dr. Singh (INC) is a coalition of 12 parties and is provided external support by 6 others. The previous government headed by Mr. Vajpayee (BJP) was a coalition of 13 parties.

CHAPTER IV

Theoretical Model

This model draws heavily from Landon and Ryan (1997) though we have made modification to suit our needs.

Since we are examining voter behavior with respect to various economic policies and outcomes; we begin by incorporating into the model, an individual's utility function.

The utility of voter in i period t is given by:

$$U_t^i = U(c_t^i, g_t^i)$$

Where t is the period associated with the current election, i.e., the term of office of government to be elected; c_t^i is a vector of private consumption goods, and g_t^i is a vector of publicly provided goods including transfers. These transfers also include direct cash transfers such as pensions, which are included in gross income, y_t^i.

The individual maximizes this utility function with respect to a budget constraint given by:

$$p_t c_t^i \leq y_t^i\left(1 - \tau_t^i\right)$$

Where p_t is a vector of prices, which is a function of the overall inflation in the economy (π), y_t^i is gross income including transfers, a function of the overall economic growth (θ), and τ_t^i is a vector of taxes paid by the individual.

The indirect utility function of an individual is given as:

$$Max\ U_t^i = V_t^i = V(y_t^i(\theta)\ , \tau_t^i, p_t(\pi))$$

Note that by incorporating a vector of taxes and expenditure instead of aggregate taxes and expenditures; we are allowing for each to have a differential impact on the individual and hence a differential impact on their voting behavior. It is also important to note that utility depends on voter's perception regarding taxes and expenditure undertaken. Therefore the marginal utility (disutility) a voter obtains from an increase in a specific form of spending may be negative if a voter perceives such expenditures to be wasteful. [35]

Voters reward or punish political parties based on the expected utility they would enjoy if the said party be in power. This would be explored in detail in the following paragraphs.

We construct two value functions which illustrate the value to the voter of having the incumbent continue in power and the value if the opposition forms the government. These value functions are functions of the indirect utility functions derived above.

The value to the voter of having an incumbent continue to govern is given by:

$$Z_{It}^i = Z_I\left(\Delta V_{It}^i\right) + \varepsilon_{It}^i$$

Where ΔV_{It}^i is the expected change in utility of the voter i during period t if the incumbent is reelected; and ε_{It}^i is a random error affecting the probability than an individual would vote for the incumbent. ΔV_{It}^i in turn depends on economic growth, inflation and changes

[35] In our empirical estimations this is done by examining a small set of policy variables in each regression. This also helps us to preserve degrees of freedom.

in taxes and expenditures experienced by the individual in period t. A similar value function exists in case of the opposition, given by:

$$Z_{Ot}^{i} = Z_I\left(\Delta V_{Ot}^{i}\right) + \varepsilon_{Ot}^{i}$$

An individual would vote for the incumbent if the change in the value of having the incumbent in power is greater than having the opposition in power.

$$\Delta Z_t^i = \left(Z_{It}^i - Z_{Ot}^i\right) > 0$$

$$\Delta Z_t^i = Z_I\left(\Delta V_{It}^i\right) - Z_I\left(\Delta V_{Ot}^i\right) + \varepsilon_t^i > 0$$

Where $\varepsilon_t^i = (\varepsilon_{It}^i - \varepsilon_{Ot}^i)$

Therefore the probability than an individual would vote for an incumbent is given by:

$$\Pr\left(\Delta Z_t^i > 0\right) = \Pr(\varepsilon_t^i > -(Z_I\left(\Delta V_{It}^i\right) - Z_I\left(\Delta V_{Ot}^i\right))$$

Since micro data on electoral behavior, incomes, taxes and expenditures are generally unavailable; aggregated electoral and policy data such as percentage of votes obtained, aggregate income, taxes and expenditures are commonly used to examine voter behavior. Shapiro and Deacon (1975) argue that the observed percentage of votes obtained is equivalent to the probability that any voter would vote in a certain way, apart from a random error. Therefore a party interested in maximizing the probability that an individual would vote for it can be interpreted as them maximizing the percent votes obtained. To obtain this conclusion the authors assume that is distributed in a known fashion with its mean a function of average voter characteristics and arguments in the indirect utility function and a known variance. They then derive probability distribution

functions and argue than the proportion of voters voting for or against is equal to the true probabilities plus a random error. While the authors assume logistic density function and use logit for their estimations; we assume normal density.

Also, the policy and outcome variables in the model are those of the following period and hence are unobserved. As the expected utility is derived in part from expectations including what they received in the past. The past period values used in the empirical estimations can be though of as proxies for their expectations.[36]

In federal states, where there are multiple levels of governments; the credit or the blame for a particular policy or outcome may be shared by different levels of government. Therefore when we examine voter at these levels, we need to look at multiple probability functions. In case of the Indian scenario analyzed here; we examine two probability functions; one each for the central and state incumbents.

The probability of voting for the state incumbent is given by:

$$\Pr_{\mathrm{S}}\left(\Delta Z_t^i > 0\right) = \delta \Pr\left(\varepsilon_t^i > -\left(Z_I\left(\Delta V_{It}^i\right) - Z_I\left(\Delta V_{Ot}^i\right)\right)\right)$$

Where δ is the proportion of the credit or blame accruing to the state incumbent. δ depends on the voter's perception of any tax, transfer or expenditures.

The probability of voting for the central incumbent is given by:

$$\Pr_{\mathrm{C}}\left(\Delta Z_t^i > 0\right) = (1-\delta) \Pr\left(\varepsilon_t^i > -\left(Z_I\left(\Delta V_{It}^i\right) - Z_I\left(\Delta V_{Ot}^i\right)\right)\right)$$

Where (1- δ) is the proportion of the credit or blame accruing to the central incumbent.

[36] Generally this implies that the voters have long time horizons and would use all the information since the last election. But in our empirical estimations we typically use a shorter time horizon for many cases.

By the principle of 'clarity of responsibility'[37] we would expect to find stronger voter responses when δ equals 1 (0) as then the voter is aware that the incumbent he is voting for is solely responsible (not responsible) for a policy or economic outcome. We may expect muted responses for those policies and outcomes which are shared responsibilities. Here this implies stronger responses in case of state taxes (in case of state level elections with state incumbents) and economic outcomes such as inflation and economic growth (in case of national elections with national incumbents, as they are generally considered to be responsibilities of the central governments). We can expect muted responses in case of state expenditure policies given that most of these are financed through intergovernmental grants and hence can be perceived as shared responsibilities. [38]

The driving force behind this model is the voter's perception regarding the tax he or she is required to pay or public good available. While earlier models hypothesized that reduction (increase) in taxes (public expenditures) always lead to improvements in voters' utility; in this model we do not subscribe to these rather naïve assumptions. Rather, we allow for differences in voter perception, for example an increase in public spending on say construction of parks may not be perceived as increase in utility, if the voter feels that such spending as wasteful or is not a user of the facility. One could also ideologically oppose large governments. Similarly, a voter may not necessarily experience disutility due to an increase in taxes, if he or she perceives it as a benefit tax and is satisfied with the services provided. While such a set up of the model renders it closer to reality; its drawback is the inability to conclusively make predictions using the

[37] When voters are aware of the responsibilities of the different levels of government; they would find it easier to assign credit or blame and hence increased clarity would lead to stronger voter responses.
[38] Hence we may not expect to find any voter responses to intergovernmental grants provided as these are not "visible" and they finance expenditures which are associated with lower clarity of responsibility.

same. This implies that examination of the presence of economic voting in essence is an empirical question, the answer to which is dependent on voters' perceptions and its aggregation. Our propositions hence do not speculate the direction of voter response but rather attempt to unearth presence of economic voting, if any given the federal set up in India. Specifically we examine the presence of economic voting in state and national level elections with respect to tax, transfer and expenditures carried out by them.

In addition to analyzing voter behavior, we also examine the presence of political cycles in the various instruments of fiscal policy available to the governments. We use insights from existing political cycle and tactical redistribution theories to extrapolate our findings.

CHAPTER V

Data and Methodology

Data

The data required for this effort are varied and many sources were tapped to collect them. The public finance data for later years (1990 onwards) were obtained from the Reserve bank of India (RBI hereafter) Publications, State Finances: A Study of budgets and Handbook of Statistics on the Indian Economy. For the earlier years (1980 onwards) online data does not exist; and so this was obtained from compilations made at the National Institute of Public Finance and Policy, Delhi. Data on inflation was obtained from the RBI publication, Handbook of Monetary Statistics of India. Data on State domestic product (SDP), Gross domestic product (GDP) and population were taken from the Central Statistical Organization's (CSO) publication, National account statistics. Reports from the Census of India were used to source data on literacy, urbanization and Schedule class population. The Election Commission of India releases reports detailing participants and results after every national and sub-national election. These reports were the source for the electoral data used in this exercise. Data on state and central incumbents were complied from various sources; they proved to be valid checks for one another since this data was not available from the usual data depositories in India. Sources include Indiastat, world statesman and Wikipedia websites, newspaper reports and periodicals published in India.

Methodology

Since the data in their most comprehensive form is a panel spanning 24 states and 28 years; panel data methodology seems the most appropriate one to use for our data analysis. Both random and fixed effect methodologies are implemented along with a pooled OLS estimation for comparison; though in the presence of time invariant unobserved variables, this methodology is not ideal.

In every econometric model the dependent variable (y) is influenced by a set of independent variables(X, c).

$$y = f(x_1, x_2, ..., x_n, c)$$

These variables can be either observed (X) or unobserved (c). What matters is the relationship between X and c. If X and c are uncorrelated, c can be included in the error term. When c is correlated with X, treating c as a constituent of the error term will bias the results.

Panel data techniques provide us with a solution of the omitted variable problem. With panel data we have observations for the same set of variables over a period of time. If the omitted variable c is time constant, the regression of interest is:

$$y_{it} = \mathbf{X}_{it}\beta + c_i + u_{it}$$

c_i is called a 'random effect' if we treat c_i as a random variable. When it is treated as a parameter to be estimated, it is known as 'fixed effects'. In most econometric

studies random effects imply no correlation between X and c, while fixed effects allow for some correlation.

A random effects estimator includes the unobserved effects in the error term to create a composite error term.

$$v_{it} = c_i + u_{it}$$

As the random effects estimator uses a GLS framework some form of strict endogenity between X and v_{it} is required for consistency.

The general estimating equation for electoral cycle analysis is given by:

$$Fiscal\ Policy\ variable_t = \beta_0 + \beta_1 Election\ Dummy_t + \delta Z_t + \alpha_i + \varepsilon_{it}$$

Where t is the time period in which the election takes place and election dummy denotes either national or sub-national level election depending on the research question being analyzed. The fiscal policy variable denotes the various transfers, taxes, expenditures and non-tax revenues of states each of which is independently analyzed for both national and sub-national level elections for the different proposition outlined earlier. The vector Z consists of other explanatory variables such as literacy, urbanization, population, schedule class population, real SDP and share of agriculture in state's domestic product. α_i denotes state specific fixed effects while ε_{it} is the random error term.

The general estimating equation for voter behavior analysis is given by:

$$Incumbent\ vote\ share_t = \theta_0 + \gamma F_{t-1} + \rho Z_t + \alpha_i + \varepsilon_{it}$$

Where t is the time period in which the election takes place and incumbent vote share denotes vote share of sub-national or national level incumbents depending on the research question being analyzed. The vector F denotes the various sets of fiscal policy variables (previously outlined) of the preceding period. The different sets of policy variables are independently analyzed for both national and sub-national level elections for the different proposition outlined earlier. The vector Z consists of other explanatory variables such as literacy, urbanization, population, schedule class population and real SDP and vote share obtained by incumbent in previous election.α_i denotes state specific fixed effects while ε_{it} is the random error term.

When we estimate the regression for voter behavior analysis with respect to economic growth and inflation; the vector F denotes economic outcome variables such as inflation, national economic growth and average national economic growth when we analyze responses in national elections while it denotes state economic growth, relative state economic growth, relative growth interacted with economic geography variable and average state economic growth over the term of an incumbent.

CHAPTER VI

Empirical analysis and Results

In India, the state governments are assigned primary responsibility for a majority of public expenditures and have significant taxing authority. Here we examine two aspects; firstly we examine the presence of electoral cycles prior to elections in the various fiscal policy instruments which are the responsibility of states. Secondly we analyze voter behavior in sub-national elections as a function of fiscal policy variables.

The national government in India undertakes fewer expenditure responsibilities; however they form a major source of non-tax revenue to sub-national governments in the form of grants. Since the national government is able to manipulate these grants; voter behavior with respect to grants in national elections is also analyzed. While many existing studies only explore the relationship between economic policy instruments and voter behavior in congruent levels of government; an attempt is made here to analyze the presence of electoral cycles and economic voting across different levels of governments. This is done by examining voter behavior in national elections in response to fiscal policy carried out by the states, and in sub-national elections in response to grants provided by the state are also analyzed. Data from 1980-2008 and 24 Indian states is used to analyze both aspects.[39]

Government expenditures in Indian states are undertaken on revenue and capital accounts. Revenues of states includes grants from the central government, taxes levied on

[39] The Union territories are excluded due to lack of public finance data while Jammu and Kashmir is excluded due to its special status.

sales, income, property and other economic activities and revenues from providing services.

Different sets of expenditures and taxes are analyzed. These include revenue expenditures associated with social services, revenue expenditures associated with economic services, revenue expenditure associated with infrastructural expenditures, capital expenditure on social and economic services, and capital expenditure on infrastructure, taxes and non-tax revenues. This segmentation is used across analysis of voter behavior in general elections also.

It must be noted that we estimate multiple number of regressions. For voter behavior analysis, sets of regressions with fiscal policy instruments in the categories described above dependent variables are estimated.[40] While in case of political cycle estimations; multiple regressions with different fiscal policy instrument as the independent variable is estimated. The specification for each regression is provided prior to discussing the results obtained.

The main dependent variable in voter behavior regressions is the percent of votes obtained by the incumbent government at the time of election. In case of national elections this implies the total percent votes obtained by the main coalition members that form the national government while in case of sub-national elections this implies the percent votes obtained by the main party in power i.e., the party of the chief minister.[41]

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[40] Since the data set is small we cannot include all fiscal policy instruments in the same regression.

[41] Due to lack of comprehensive information on coalitions (if present) at the sub-national level, this formulation is used. This approach can be justified by recognizing that the most visible member of the state administration is the Chief Minister, and the responsibility of economic activities and outcomes would be attributed to him or her. This formulation has also been used in other papers that deal with countries with coalition governments.

Since voting data exhibit persistence due to entrenched support and ideological leanings of the electorate which tend not to change rapidly over time, it is important to include the votes received by the incumbent in the previous elections as a control variable. Fiscal policy variables such as taxes, transfers, non tax revenues and loans form the main explanatory variables. If the election takes place in the second half of the fiscal year, the expenditure and revenue variables used are of the current fiscal year. If the election takes place in the first half of the fiscal year, then the independent variables belong to the previous fiscal year.[42] It captures the most recent policy variables which are experienced by the voters. Annual data is used. No other data (quarterly, monthly) are easily available. Other explanatory variables include real state domestic product (Real SDP), population, percent of Schedule class population (SC), literacy, and urbanization.

The dependent variable in the case of the electoral cycle regressions is the fiscal policy variable while the independent variable of interest is a dummy indicating the presence of an election in a given fiscal year. Many authors argue the need to distinguish between scheduled and unscheduled elections in these kinds of studies. Policy manipulations are possible when there is an scheduled election and generally will not exist in an unscheduled one[43] as the unscheduled elections typically occur suddenly in the middle of an incumbent's term due to lack of political support in which case the incumbents may not have had the opportunity to manipulate expenditure or taxes. A scheduled election is defined as one which takes place when the current legislative body

[42] This specification has been used in other papers.
[43] In India such elections are termed as midterm elections.

is at least four years old.[44]Other explanatory variables include real state domestic product, population, percent of Schedule class population (SC), literacy and urbanization and share of agriculture in the state economy.

Three types of regressions, pooled OLS, panel data methods Random and Fixed effects are analyzed. Nominal level values, real level values and per capita values of expenditure and tax variables are used.

[44] Chaudhuri and Dasgupta (2004) follow this definition. Four years is chosen as the cutoff as the term of any national or sub-national legislative body in India is 5 years.

Cycles in Government expenditure, taxes and non-tax revenue in case of Sub-national (Assembly) elections

$$Fiscal\ Policy\ variable_t = \beta_0 + \beta_1 Election\ Dummy_t + \delta Z_t + \alpha_i + \varepsilon_{it}$$

The fiscal policy variables in this case are state level tax and non-tax revenues collected and expenditures undertaken. And the election dummy denotes sub-national elections.

Results indicate that pre election manipulation of fiscal policy instruments by sub-national incumbents does exist in India. Interestingly while there is strong evidence for the presence of cycles in taxes and other non-tax revenues collected; the same cannot be concluded in case of expenditures. This may be the case since these taxes are in the sole preview of the sub-national government, while many expenditure decisions are undertaken in consultation with the center. Overall the results indicate that states have lower own source revenues prior to an election. Own-tax revenues, including property tax, commercial services and sales tax, excise taxes are all lower prior to an election. In case of non-tax revenues, pre election receipts from provision of economic services are lower. Evidence of electoral cycles in expenditure items is not as strong, with no cycles emerging in case of social services or infrastructure revenue expenditures; however revenue expenditure on irrigation and capital expenditures on water supply and sanitation are lower prior to elections. Interestingly, results indicate that expenditures on police are higher.[45] As hypothesized, these cycles are present only in case of scheduled elections; a dummy indicating non scheduled election is generally not significant. A drawback in

[45] These results are comparable to those obtained by Chaudhuri and Dasgupta (2006) and Khemani (2004). These studies use older and less comprehensive Indian data; typically they use data up to 1992 for 14 major Indian states.

existing research in political cycle analysis is that presences of such cycles are generally examined using highly aggregated policy instruments. A tactical incumbent may not want to manipulate all instruments due to the increasing inefficiencies he or she may face; but rather prefer to manipulate those which they feel would impact the voters the most, in other words bring more bang for their buck.

It is interesting that we find almost no cycles with respect to expenditures even when examine these at highly disaggregated levels. It could be that with falling tax and non-tax revenues prior to elections, the incumbent is hard-pressed to increase expenditures but given the ballooning deficits of the Indian states this may not be the answer. As mentioned before, the states are recipients of intergovernmental grants which in turn finance expenditures, so in some sense, the states do not have sole responsibility over expenditures. In such a scenario the states may not only be able to influence taxes more easily but it would also be politically expedient to manipulate items of policy where there is greater clarity of responsibility (taxes) and internalize all the perceived gains. Finally, there is the notion that people value in-cash transfers more highly than ones in-kind. Hence reductions in taxes and fees which in turn imply increases in disposable income may be more effective manipulations than increases in expenditures. However it is rather puzzling that in a country like India where almost one third of the population still works in the agricultural sector and a large number of people still lack access to water, the incumbent chose to reduce on water supply and irrigation expenditures pre-election. These are typically very visible and have the characteristics of being easy to recall by voters as people tend to remember more visible items such as cleaner roads and regular water supply than increases in expenditures in education as these tend to take a

while before earning any returns. So as even small manipulations in visible items such as these would forward the cause of the incumbent, it is would be interesting to unearth the reason behind the results we find in case of such expenditures.

Table 1.1: Electoral cycle in expenditure in irrigation

Per Capita Irrigation						
VARIABLES	POLS	RE	FE	POLS	RE	FE
Scheduled elections	-11.54	-10.58**	-10.39**			
All elections				-7.795	-7.039	-6.777
Literacy	-2.250***	0.0476	0.731	-2.247***	0.0734	0.75
Urban	1.016***	1.134	1.661	1.027***	1.099	1.6
SC population	-1.471***	-0.559	0.182	-1.467***	-0.555	0.121
Per capita SDP	37611***	2653	1476	37539***	2796	1696
Share of agriculture	1.544***	-0.0968	-0.246	1.544***	-0.118	-0.263
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	28.04	20.16	-21.05	29.39	22.06	-17.82
Observations	657	657	657	657	657	657
R-squared	0.273		0.257	0.272		0.254

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 1.2: Electoral Cycle in expenditure on Police

Per Capita Police VARIABLES	POLS	RE	FE	POLS	RE	FE
Scheduled elections	16.48	14.09	14.04*			
All elections				18.75	12.13	12.55
Literacy	4.425***	-0.22	-0.12	4.421***	-0.239	-0.137
Urban	-4.133***	5.759**	8.208	-4.148***	5.827**	8.316
SC population	-17.65***	-11.40**	-3.218	-17.66***	-11.41**	-3.145
Per capita SDP	13540	-4347	-5801	13568	-4719	-6248
Share of agriculture	4.605***	-6.712***	-7.307**	4.614***	-6.682***	-7.284**
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	87.32	431.3***	301.2	82.96	427.0***	295.2
Observations	657	657	657	657	657	657
R-squared	0.416		0.378	0.417		0.378

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 1.3: Electoral Cycle in expenditure on Water Supply and Sanitation

Real expenditure on Water Supply and Sanitation VARIABLES	POLS	RE	FE	POLS	RE	FE
Scheduled elections	-12.21	-11.44	-10.73**			
All elections				-10.84	-11.23	-10.34*
literacy	-2.921***	1.484	3.988	-2.908***	1.458	3.998
urban	1.211**	0.281	2.917	1.221**	0.232	2.847
SC population	2.851***	1.304	-24.05	2.849***	1.348	-24.15
Population	-7.17e-07**	-2.65E-07	-1.27E-07	-7.06e-07**	-2.74E-07	-1.63E-07
Real SDP	0.000465*	0.000775**	0.000774	0.000459	0.000773**	0.000777
Share of agriculture	-2.055***	-3.912***	-4.592*	-2.056***	-3.926***	-4.612*
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	142.1***	52.66	217.9	143.8***	57.82	224.3
Observations	657	657	657	657	657	657
R-squared	0.262		0.391	0.261		0.391

Table 1.4: Electoral Cycle in Own tax revenues

Per Capita Own Tax Revenue						
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled elections	-28.56	-24.64	-24.08**			
All elections				-24.75	-15.5	-14.22
literacy	-4.793**	-0.0982	1.702	-4.786**	0.181	1.75
urban	8.586***	16.27***	21.67	8.613***	16.87***	21.54
SC population	23.42***	22.16***	-13.77	23.43***	21.40***	-13.91
Per capita SDP	833246***	789715***	770588***	833122***	788522***	771013***
Share of agriculture	-11.22***	-8.497***	-8.839	-11.23***	-8.562***	-8.879
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-118	-569.8***	-295.8	-112.9	-578.9***	-289
Observations	656	656	656	656	656	656
R-squared	0.859		0.897	0.859		0.897

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 1.5: Electoral Cycle in Property tax revenues

Per Capita Property Taxes						
VARIABLES	POLS	RE	FE	POLS	RE	FE
Scheduled elections	-5.662	-5.664	-5.520**			
All elections				-6.162	-5.559	-5.131**
literacy	-0.464*	-0.0243	1.12	-0.463	0.0135	1.126
urban	2.260***	2.082***	3.296	2.265***	2.080***	3.251
SC population	3.891***	4.423***	11.71	3.894***	4.455***	11.68
Per capita SDP	55405***	69300***	77840***	55393***	69751***	78013***
Share of agriculture	-0.152	-0.298	-0.537	-0.156	-0.314	-0.546
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-81.69***	-114.3***	-271.3	-80.26***	-114.7***	-268.9
Observations	656	656	656	656	656	656
R-squared	0.693		0.645	0.693		0.645

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 1.6: Electoral Cycle in Services and sales tax revenues

Per Capita Service and Sales Taxes						
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled elections	-18.88	-16.12	-15.90*			
All elections				-15.36	-7.55	-6.58
literacy	-4.877**	-1.865	-1.042	-4.872**	-1.747	-1.003
urban	7.399***	17.55***	22.05*	7.417***	18.07***	21.98*
SC population	20.49***	18.83***	-4.677	20.50***	18.32***	-4.778
Per capita SDP	776361***	700046***	681411***	776270***	698242***	681578***
Share of agriculture	-10.55***	-5.680***	-5.826	-10.55***	-5.705***	-5.852
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-77.46	-554.2***	-377.9	-74.4	-560.5***	-374.8
Observations	656	656	656	656	656	656
R-squared	0.859		0.896	0.859		0.896

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 1.7: Electoral Cycle in Excise tax revenues

Per Capita Excise Tax						
VARIABLES	POLS	RE	FE	POLS	RE	FE
Scheduled elections	-8.752	-7.68	-7.480*			
All elections				-8.364	-7.304	-7.440*
literacy	0.547*	0.229	-0.594	0.549*	0.19	-0.587
urban	0.608*	0.542	-0.296	0.616*	0.5	-0.36
SC population	4.564***	4.315***	-16.58	4.568***	4.236***	-16.62
Per capita SDP	70553***	45389***	30130*	70522***	44621***	30384*
Share of agriculture	2.079***	0.888	0.798	2.075***	0.851	0.785
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-175.5***	-91.50*	225.1	-173.7***	-84.17*	228.7
Observations	656	656	656	656	656	656
R-squared	0.535		0.334	0.535		0.334

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 1.8: Electoral Cycle in Revenues from Economic Services

Per Capita Revenues from Economic Services						
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled elections	-38.82	-26.44	-25.69*			
All elections				-14.85	-3.489	0.584
literacy	-7.048***	-3.684	-1.829	-7.034***	-3.562	-1.738
urban	-8.715***	2.794	19.32	-8.677***	3.629	19.3
SC population	-18.59***	-20.17***	-33.74	-18.59***	-20.15***	-33.93
Per capita SDP	543445***	430927***	365965*	543090***	425736***	365739*
Share of agriculture	-0.195	5.585***	5.421	-0.184	5.654***	5.378
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	379.3***	-65.07	-278.8	380.3***	-86.24	-279.1
Observations	657	657	657	657	657	657
R-squared	0.62		0.431	0.619		0.43

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Voter behavior in response to expenditure, taxes and other revenues in Sub-national elections

$$Incumbent\ vote\ share_t = \theta_0 + \gamma F_{t-1} + \rho Z_t + \alpha_i + \varepsilon_{it}$$

Incumbent vote share here refers to the vote share obtained by the party of the incumbent chief minister at the state in sub-national elections. Fiscal policy variables include the various taxes, non-tax revenues and expenditures of state governments.

Our results indicate that voters in the Indian states seem to be fiscal conservatives as when they do react to fiscal policy; they punish the incumbents for increases in expenditures or taxes. This implies that the voters generally perceive increases in utility from lower taxes while being indifferent or experiencing lose in welfare due to increases in certain expenditures.

Voters in general do not seem to respond to government revenue expenditures. This includes expenditures on social services such as health, education, welfare, pensions and the like, and economic services expenditure on agriculture, industries, urban and rural development. Interestingly voters seem to react strongly to infrastructural expenditures on the revenue account. Voters punish incumbents for increases in plan expenditure on irrigation, roads and bridges and power. Increases in expenditures on police are however rewarded by the electorate. Expenditures undertaken on the capital account by the incumbents evoke a stronger response from voters. Here too, voters punish the incumbent for increases in expenditures on health, agriculture, irrigation and power. While coefficients on other expenditures may not reach the required levels of significance; the fact that most of them are negative indicates that the Indian voter

generally considers perceives a disutility from government expenditures. Though fiscal conservatism is found in exist in countries such as the U.S., voters in India generally do not exhibit such an ideological bent and populist political parties do not foster such notions. Hence such a result cannot be attributed to the philosophy of desiring smaller governments; rather we need to reckon whether the voters consider government expenditures as wasteful. Let us elaborate on this by using voter responses to expenditure on heath as an example. Though government hospitals are the main providers of health care in rural areas; the quality of services provided, number of doctors and availability of medicines has deteriorated over time[46]. Given that a large percent of the population in India still lives in rural areas; their robust turn out in elections coupled with a lack of perceived benefits from health services could lead to voters reacting negatively to such wasteful expenditures.

There is some concern that the level of expenditures and taxes may be influenced by votes obtained by the incumbent in the previous election as an incumbent facing a competitive election may attempt policy accordingly. Though this may be the case, we also need to content that votes may need not necessarily be endogenous with policy as while contemporaneous factors such as popularity of an opponent may render the election unsafe for the incumbent, this may be a relatively new phenomenon and not related to votes that incumbent obtained previously. We however, ran tests to examine whether policy is influenced by past votes found that except in case of a few items of expenditures this generally was not the case. The inclusion as an independent variable; the votes in previous years also aids to control this possibility.

[46] Citizen's Report on Governance and Development (2007)

Taxes levied by the incumbents evoke a much stronger response from the electorate than expenditures undertaken. This result tends to support the notion that an individual tends to perceive differences between in-kind and cash transfers; as Indian voters' responses seem stronger when actual cash in hand is lowered due to increases in taxes than when they are faced with in-kind transfers in the form of government expenditures. Results indicate that increases in property, sales and other taxes and revenues from providing social services are penalized by the voters. Interestingly increases in motor vehicle taxes are rewarded by voters, this may stem from the fact that this is a selective tax that falls on a small percent of the population who own motor vehicles and are in general wealthier than the average voter. Also, most of the receipts from this tax are earmarked for construction and maintenance of roads and bridges; thus this tax may be viewed as a benefit tax leading to such responses by voters if they also perceive as benefits, the value added by good roads and other infrastructure. Also, while increases in revenues from social services are penalized, increases in revenues from economic services are rewarded.[47]

Many authors argue that voters are not only affected by their own taxes, but also care about their taxes relative to other states'. Therefore voter behavior would not just be influenced by taxes in their particular state, but also taxes prevailing in say, neighboring states. The rationale is that while voters may penalize incumbent for increases in taxes; they may not do so if there have been similar tax increases in the neighboring states.[48] This is examined by incorporating a variable which measures taxes in neighboring states.

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[47] These findings are similar to those of studies using data from developed countries, for example - Peltzman (1992), Kone and Winters (1993), Sobel (1998) and Landon and Ryan (1997).

[48] Voters may also not care about own tax increases if they are satisfied with the services financed by the taxes.

In this exercise we construct a ratio of average per capita taxes in neighboring states and per capita taxes in particular state. Another variable using ratio of taxes to state domestic product (SDP) is similarly constructed. [49]This variable is expected to be negatively related to votes received by the incumbent.[50] Neighbor's states are defined as those states which share border the state in question, so while some coastal states may have only two neighbors; landlocked states may have as many as seven. In addition to the usual explanatory variable, another variable, revenue expenditures is also included to control for the level of services provided.

Our results indicate that increases in property and excise taxes are penalized by the electorate. Though the property tax yardstick variable has positive sign (opposite of what we have hypothesized); the yardstick variable for excise has the correct sign. This implies that increases in own excise taxes larger than those experienced by the neighboring states are penalized. It must be noted that though the coefficients on sales tax and its yardstick variable are not significant; they do have the signs consistent with what we have hypothesized. While increases in motor vehicle taxes are rewarded; increases in own motor vehicle taxes larger than those experienced by the neighboring states are penalized. Increases in revenue from social service expenditures are also penalized. Yardstick effects do seem to exist in case of some taxes in India.[51]

The coefficient of votes in the previous election is generally negative and significant; this documents the commonly acknowledged presence of an 'anti-

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[49] Ratio = (PC taxes of $State_i$ /average PC taxes)*100

[50] Increases in ratio would be due to greater increases in own taxes relative to neighbor's taxes; hence the negative relation. So if all states increase taxes by the same proportion, voters may not penalize the incumbent. Only increases greater than that of neighbor's taxes would be penalized.

[51] Beasley and Case find that while an incumbent governor's reelection prospect reduces with increase in taxes; however the effect is mitigated if neighboring states have experienced increases too.

incumbency' effect in elections. This implies that there is some 'cost to governance' in form of lower votes in the succeeding elections. Though the schedule caste population variable is not always significant, when it is, it positively affects the incumbent's share of votes. While this may be due to patronage of incumbents, we cannot conclusively say so without further investigation.

We find that voters tend reward reductions in taxes while not reacting to expenditures or punishing their increases. We attribute such a finding to the notion that people tend to value in-kind transfers differently from in-cash transfers and there also an impression that government expenditure is wasteful.

Table 2.1: Voter response to Revenue Expenditure on Social Services

Percent Votes	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Education	0.0195	0.0195	-0.000523	-0.0193	-0.0193	-0.00193	0.0857	0.0857	0.107
Health	0.14	0.14	0.0958	-0.0804	-0.0804	0.148	0.0648	0.0648	0.0637
Water supply & Sanitation	-0.236	-0.236	-0.259	0.021	0.021	-0.404	-0.206	-0.206	-0.0624
Labor & Employment	0.648	0.648	-0.00119	0.427	0.427	-0.176	0.344	0.344	0.184
Welfare	-0.105	-0.105	-0.0879	-0.0878	-0.0878	-0.152	-0.333	-0.333	-0.646
Calamity Relief	-0.0286	-0.0286	0.0545	-0.11	-0.11	0.0147	-0.0584	-0.0584	-0.36
Pension	-0.0352	-0.0352	-0.0451	0.0186	0.0186	-0.0507	-0.0666	-0.0666	-0.0891
Votes in previous election	-0.0457	-0.0457	-0.223***	-0.0656	-0.0656	-0.236***	-0.0421	-0.0421	-0.188**
Literacy	-1.395	-1.395	0.424	-1.369	-1.369	0.409	0.12	0.12	-1.425
Urban	3.046	3.046	6.065	2.764	2.764	7.148	4.031	4.031	9.931
Schedule caste population	7.563**	7.563**	-10.11	7.779**	7.779***	-6.893	7.700**	7.700**	29.72
Real SDP	-2.67E-06	-2.67E-06	-1.40E-05	1.05E-05	1.05E-05	-1.07E-05	-6.20E-06	-6.20E-06	-3.44E-06
Population	-1.80E-06	-1.80E-06	1.47e-05**	-5.88E-07	-5.88E-07	1.56e-05**			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-20.24	-20.24	-397	-17.71	-17.71	-505.5	-155.2	-155.2	-460.8
Observations	136	136	136	136	136	136	136	136	136
R-squared	0.099		0.16	0.103		0.17	0.095		0.117

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 2.2: Voter response to Revenue Expenditure on Economic Services

Percent Votes	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Urban Development	0.0173	0.0173	0.294	-0.0715	-0.0715	0.234	-0.0952	-0.0952	-0.0116
Cooperation	0.168	0.168	0.655	-0.179	-0.179	-0.131	-0.815	-0.815	-2.815
Agriculture & allied activities	-0.103	-0.103	0.177	-0.0287	-0.0287	-0.0213	-0.0468	-0.0468	-0.0257
Sewage & Water	0.366	0.366	-2.782**	-0.185	-0.185	-2.083	1.21	1.21	0.153
Rural Development	-0.012	-0.012	-0.1	-0.0975	-0.0975	-0.0696	-0.166	-0.166	0.0123
Industries	-0.563	-0.563	-0.901	-0.361	-0.361	-0.629	-0.979	-0.979	-1.06
Small scale industries	-0.628	-0.628	0.178	-0.505	-0.505	-0.284	0.278	0.278	0.256
Votes in previous election	-0.0714	-0.0714	-0.222***	-0.0561	-0.0561	-0.229***	-0.0475	-0.0475	-0.191**
Literacy	-0.839	-0.839	-1.811	-1	-1	-3.563	1.271	1.271	-0.689
Urban	2.216	2.216	5.698	2.886	2.886	7.625	3.222	3.222	3.211
Schedule caste population	6.886**	6.886**	-16.47	6.839**	6.839**	-13.74	8.172**	8.172**	1.879
Real SDP	1.50E-05	1.50E-05	-4.24E-05	1.26E-05	1.26E-05	-2.78E-05	-4.65E-06	-4.65E-06	-1.14E-06
Population	-1.75E-06	-1.75E-06	2.37e-05***	-3.37E-07	-3.37E-07	1.77e-05***			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-25.46	-25.46	-412.3	-16.6	-16.6	-172.6	-165.6	-165.6	27.84
Observations	136	136	136	136	136	136	136	136	136
R-squared	0.104		0.199	0.119		0.183	0.097		0.111

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 2.3: Voter response to Revenue (Plan) Expenditure on Infrastructure

Percent Votes	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Housing	-1.152**	-1.152**	-0.988	-0.661	-0.661	-0.739	-0.0154	-0.0154	-0.0816
Irrigation	-0.782**	-0.782**	-0.751*	-0.616*	-0.616*	-0.572	0.147	0.147	0.215
Power	-0.894***	-0.894***	-0.869***	-0.864***	-0.864***	-0.871***	0.0523	0.0523	0.0172
Roads & Bridges	-1.824***	-1.824***	-1.288**	-1.210***	-1.210***	-0.731	-0.00679	-0.00679	-0.387
Police	22.57***	22.57***	22.79***	21.59***	21.59***	23.14***	12.88***	12.88***	13.58***
Public works	-0.434	-0.434	2.614	-0.834	-0.834	2.136	-0.187	-0.187	-1.224
Votes in previous election	-4.893***	-4.893***	-5.119***	-4.410***	-4.410***	-4.885***	-1.155***	-1.155***	-1.307***
Literacy	-0.931	-0.931	1.624	-0.433	-0.433	1.634	0.562	0.562	0.053
Urban	1.148	1.148	4.238	1.985	1.985	3.094	3.156	3.156	0.00909
Schedule caste population	5.108***	5.108***	-5.549	4.884***	4.884***	10.04	8.528***	8.528***	7.29
Real SDP	1.92e-05***	1.92e-05***	-4.61E-06	1.03e-05*	1.03e-05*	-0.0000132	-3.64E-06	-3.64E-06	-0.0000024
Population	-2.54e-06***	-2.54e-06***	6.81E-06	-1.52e-06**	-1.52e-06**	6.21e-06*			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	200.8**	200.8**	-57.06	148.2*	148.2*	-186.4	-148.6	-148.6	-37.66
Observations	136	136	136	136	136	136	136	136	136
R-squared	0.599		0.605	0.672		0.714	0.244		0.258

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 2.4: Voter response to Capital Expenditure on Social and Economic Services

Percent Votes	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Education	0.109	0.109	0.519	-0.219	-0.219	-0.257	0.169	0.169	0.0221
Health	-0.351**	-0.351**	-0.566***	-0.351**	-0.351**	-0.444**	0.238	0.238	0.37
Agriculture & allied activities	-0.982***	-0.982***	-1.045***	-0.900***	-0.900***	-1.014***	-1.928***	-1.928***	-1.954***
Industries	-1.669**	-1.669**	-1.069	-0.777	-0.777	0.0238	0.137	0.137	-1.366
Small scale industries	-0.618	-0.618	0.985	-1.941	-1.941	-1.942	-1.227	-1.227	-0.553
Votes in previous election	-0.0567	-0.0567	-0.195***	-0.0577	-0.0577	-0.192***	-0.0301	-0.0301	-0.160**
Literacy	0.753	0.753	3.194	1.163	1.163	1.57	0.783	0.783	-4.746
Urban	0.344	0.344	4.163	1.427	1.427	5.975	2.984	2.984	4.303
Schedule caste population	3.76	3.76	-17.07	4.375*	4.375*	-29.73	4.736*	4.736*	3.824
Real SDP	1.80e-05**	1.80e-05**	-4.17E-06	1.28e-05*	1.28e-05*	-0.0000129	-3.35E-06	-3.35E-06	-2.72E-06
Population	-3.82E-07	-3.82E-07	1.61e-05***	4.63E-07	4.63E-07	1.50e-05***			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-44.98	-44.98	-412.4	-12.7	-12.7	-96.53	-62.34	-62.34	181.3
Observations	136	136	136	136	136	136	136	136	136
R-squared	0.278		0.365	0.308		0.412	0.261		0.32

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 2.5: Voter response to Capital Expenditure on Infrastructure

Percent Votes	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Water & Sanitation	-0.111	-0.111	0.172	-0.174	-0.174	0.0642	-0.0159	-0.0159	0.129
Housing	-0.636	-0.636	-2.192**	-0.957	-0.957	-2.138**	0.214	0.214	-0.42
Irrigation	0.000187	0.000187	0.00693	-0.0131	-0.0131	-0.00352	-0.0536	-0.0536	-0.216
Power	-0.0366	-0.0366	-0.197*	-0.0498	-0.0498	-0.166*	-0.00693	-0.00693	-0.0474
Roads & Bridges	0.0321	0.0321	0.0201	0.0323	0.0323	0.0134	0.0573	0.0573	-0.0315
Votes in previous election	-0.0514	-0.0514	-0.244***	-0.0569	-0.0569	-0.239***	-0.0359	-0.0359	-0.173**
Literacy	-1.037	-1.037	-0.582	-1.269	-1.269	-0.706	0.633	0.633	-0.725
Urban	2.643	2.643	7.158	2.79	2.79	7.273	2.989	2.989	2.653
Schedule caste population	7.388**	7.388**	13.05	7.422**	7.422**	11.64	7.151**	7.151**	11.33
Real SDP	3.81E-06	3.81E-06	-2.94e-05*	0.0000067	0.0000067	-2.71e-05*	-3.86E-06	-3.86E-06	-4.67E-07
Population	-1.55E-06	-1.55E-06	1.92e-05***	-1.68E-06	-1.68E-06	1.71e-05***			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-32.18	-32.18	-736.2	-18.16	-18.16	-641.4	-143.1	-143.1	-94.18
Observations	136	136	136	136	136	136	136	136	136
R-squared	0.093		0.212	0.1		0.204	0.082		0.105

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 2.6: Voter response to Tax and Non-tax Revenues

Percent Votes	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Property tax	0.00399	0.00399	-0.127	-0.0802	-0.0802	-0.216	-0.298	-0.298	-0.881*
State sales tax	-0.0626**	-0.0626**	-0.044	-0.0728***	-0.0728***	-0.0607*	-0.116	-0.116	-0.21^
Motor Vehicles tax	0.245***	0.245***	0.230**	0.266***	0.266***	0.298***	1.343***	1.343***	1.706***
Excise	0.00917	0.00917	-0.178	-0.0166	-0.0166	-0.0894	-0.276	-0.276	-0.354
Duty on Electricity	0.154	0.154	-0.0197	0.0838	0.0838	-0.0739	0.366	0.366	-0.501
Other taxes	-0.0944	-0.0944	-0.133	-0.129*	-0.129*	-0.155**	-0.67	-0.67	-0.513
Revenue from social services	-0.00764	-0.00764	0.133	-0.123	-0.123	0.0582	-1.547*	-1.547*	-1.820**
Revenue from economic services	-0.0211	-0.0211	0.123	-0.0311	-0.0311	0.122	0.222**	0.222**	0.413***
Votes in previous election	-0.0875	-0.0875	-0.286***	-0.0996	-0.0996	-0.289***	-0.158***	-0.158***	-0.356***
Literacy	0.174	0.174	-4.54	0.379	0.379	-5.736	0.963	0.963	-8.147
Urban	1.567	1.567	4.264	1.983	1.983	4.725	4.248	4.248	5.74
Schedule caste population	5.682**	5.682**	20.92	5.643**	5.643**	4.34E+01	6.942**	6.942**	88.63*
Real SDP	3.33E-06	3.33E-06	-0.00001	1.65E-05	1.65E-05	-1.07E-06	-3.50E-06	-3.50E-06	7.67E-06
Population	-1.09E-06	-1.09E-06	1.72e-05***	-8.24E-07	-8.24E-07	1.28e-05**			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-58.57	-58.57	-587	-104.1	-104.1	-718.5	-182.8	-182.8	-821.1
Observations	136	136	136	136	136	136	136	136	136
R-squared	0.155		0.301	0.195		0.335	0.314		0.501

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Note: ^ - Significant at 11%

Table 2.7: Yardstick measures in voter behavior analysis

	Per Capita Values			Ratios		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Property tax	-0.18	-0.18	-1.310**	-162.6	-162.6	-280.8**
Property tax (Ratio)	0.502	0.502	1.193*	-4.506	-4.506	-5.026
Sales Tax	-0.0185	-0.0185	-0.00096	-10.23	-10.23	-33.42
Sales Tax (Ratio)	0.0462	0.0462	-0.0627	15.75	15.75	-17.29
Excise	-0.174	-0.174	-1.162***	-36.48	-36.48	-89.51
Excise (Ratio)	-1.027**	-1.027**	-0.980*	-105.2	-105.2	-164.9**
Revenue Expenditure	0.00623	0.00623	0.00238	-0.223	-0.223	-0.261
Real SDP	-4.37E-06	-4.37E-06	2.51E-06	1.02E-06	1.02E-06	-2.20e-05*
Literacy	1.064	1.064	-1.681	0.387	0.387	-0.773
Urban	4.585	4.585	11.79	5.011*	5.011*	9.793
Population				14.01***	14.01***	18.55
Schedule class population	12.31***	12.31***	41.65	-5.1E-07	-5.1E-07	1.12e-05**
Votes in last election	-0.0554	-0.0554	-0.281***	-0.0805	-0.0805	-0.270***
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-189.4	-189.4	-503.7	-69.85	-69.85	-323.5
Observations	136	136	136	136	136	136
R-squared	0.152		0.363	0.172		0.353

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 2.8: Yardstick measures in voter behavior analysis

	Per Capita Values			Ratios		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Motor vehicle tax	1.807***	1.807***	2.307***	235.4***	235.4***	361.5***
Motor vehicle tax (Ratio)	-1.025**	-1.025**	-0.871*	-7.087	-7.087	6.972
Other taxes	-0.416	-0.416	-0.648	-43.29	-43.29	-75.22
Other taxes (Ratio)	-2.186	-2.186	-3.12	-277.2	-277.2	-505.3*
Revenues from social services	-1.413	-1.413	-1.627*	-337.8*	-337.8**	-232.7
Revenues from social services (Ratio)	-0.252	-0.252	-1.001	-115	-115	-653.8**
Revenues from economic services	0.126	0.126	0.177	13.86	13.86	22.86
Revenues from economic services (Ratio)	0.0259	0.0259	-0.224	14.29	14.29	-37.07
Revenue Expenditure	-0.00674	-0.00674	-0.0106	-0.0769	-0.0769	-1.531
Real SDP	-1.6E-06	-1.6E-06	1.84E-06	-2.6E-06	-2.6E-06	-2.38e-05**
Literacy	1.13	1.13	-7.351	0.791	0.791	-5.938
Urban	2.273	2.273	-4.752	3.84	3.84	6.536
Population				5.228	5.228	54.38
Schedule class population	3.576	3.576	84.23*	-7.2E-07	-7.2E-07	1.27e-05***
Votes in last election	-0.154**	-0.154**	-0.344***	-0.0928	-0.0928	-0.311***
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-83	-83	-484.8	-117.6	-117.6	-647
Observations	136	136	136	136	136	136
R-squared	0.316		0.488	0.229		0.48

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Cycles in Grants provided by the National government prior to national elections

$$Fiscal\ Policy\ variable_t = \beta_0 + \beta_1 Election\ Dummy_t + \delta Z_t + \alpha_i + \varepsilon_{it}$$

The fiscal policy variables in this case are centrally distributed intergovernmental transfers and loans, and the election dummy denotes national elections. This equation is estimated for all states, aligned and unaligned states independently.

There is strong evidence that electoral cycles exist in inter-governmental grants even though many of the grants are based on formulas. Our results indicate that total loans and grants from the center are systematically larger prior to national elections. Grants for state plan schemes and non-plan grants are also larger prior to a national election. [52] As in the case with sub-national elections, we can conclude that cycles are generally found prior to scheduled elections

Many economists argue that the grant system in India taken in its entirety is not transparent and is subject to increasing discretion of central government in grant provision. While formula based transfers have shown large fluctuations from one plan period to another, many have also pointed out that the construction of formula themselves are politicized with the presence of central ministers and chief ministers of states in the various commissions. Even the so-called non-plan or statutory grants provided by the finance commission are not transparent with its 'gap filling' methodology. Also, though the Finance Commission is a constitutional body established to oversee distribution of statutory grants; its importance has greatly reduced in the years since majority of the

[52] An interesting digression – Results indicate that total grants in within the Indian union are not equalizing; this is mainly due to the non-equalizing nature of non-plan grants provided by the finance commission. Since these grants tend to be 'gap-filling' grants it begs the question whether richer states are fiscally profligate?

grants now come under the preview of the Planning commission. Since the Planning commission has various ministers as its members, it can be argued that such manipulations can easily creep in.[53]

An interesting variation of tactical distributions hypothesis is then examined. While Dixit and Londregan (1998) argue that an incumbent would try to manipulate distribution of resources to favor 'swing' voters; Cox and McCubbins (1986) argue that such distributions would generally favor an incumbents 'core' supporters. While existing research use time series data on all years to test these theories; here it is examined in conjunction with political cycle theories. A caveat is in order, though many papers do use alignment with a higher tier of government to measure the nature of 'swing' of a state, such a measure is generally imprecise as a state may be a swing state in terms of it being up for grabs but it could also be aligned with the center. So if we find that states aligned with the center are being targeted, it not only captures the notion that the incumbent at center is attempting to help a co-partisan at the state level, but it could also pick up the effect of the center attempting to target a swing state. Therefore though we may use alignment here, we use insights from the 'clarity of responsibility' literature to interpret these results, though content that this may also be picking up 'swing' effects and we need to include measures of 'swing' independently to examine its effects. To test the hypothesis that the national government may treat aligned (here taken to mean 'core' support states) and unaligned (swing states) differently prior to national level elections, a variable align is constructed. Align takes the value of 1 if the chief minister of a state

[53] These arguments are drawn from various papers, book chapters and other discussions on the Indian transfer system. References to these papers are included in the bibliography. See Rao and Singh (2001) for an excellent overview of issues regarding institutions and transfers.

belongs to any party in the national coalition at the time of the election. The same regressions are then estimated by each category, aligned and unaligned states.

Interestingly, the cycles in grants seem to exist mainly in case of unaligned states.[54] This may indicate that the central incumbent's objective is to maximize votes across the country; and is attempting to do so by influencing the more visible expenditures at the state level in states which do not form his or her support base by influencing their transfers. Loans provided by the central government however; are higher in aligned states prior to national elections. This would be the case if it is easier to provide loans which would be repaid in future than wrangle grants for these aligned states.

Ideally if the central incumbent's motivation is to internalize all the 'credit' accruing due to expenditures based on these grants, we would expect to find persistent cycles in grants for central plans and centrally sponsored schemes as these fund programs are undertaken by the states at the behest of the center or the central ministries operate these programs; respectively. Also, these grants would be higher prior to election in case of unaligned states. However; while cycles do seem to exist in case of central plan schemes, it's not so in case of centrally sponsored schemes. As expected; unaligned states obtain higher central plan grants prior to a national election.[55]

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[54] This is consistent with Khemani's (2003) finding that political manipulation is present in the distribution of grants in India. However while we find unaligned states are favored with higher plan at times of elections, she finds that such grants are higher in case of aligned states. However, given that we test for slightly different hypothesis it may be the case that while at times of elections, unaligned states are favored, across the entire time period, aligned states may be favored. We also must keep in mind that the data set we use comprises of more years and a larger number of Indian states. Our results in case of non-plan grants however are similar.

[55] This is consistent with Rao and Singh (2000) finding of lower central plan transfers and centrally sponsored transfers to aligned states.

Though we find evidence in favor of the notion that the central incumbent provides higher transfers to unaligned states, given the caveat mentioned above we cannot emphatically conclude that the central incumbent does not favor ‘swing’ states. We would prefer to couch an argument for such a result on the notion that an incumbent would attempt to internalize the perceived gains from his or her actions and the degree of ‘clarity of responsibility’. This implies that the central incumbent would attempt to increases those types of transfers for which they can claim sole responsibility to unaligned states. If it is the case that the central incumbent is focusing on ‘swing’ states; it would also be interesting to examine the duration of such behavior as this may lead to erosion of support in ‘core’ states and therefore threaten the favorable electoral chances of the incumbent.

Table 3.1: Cycles in total grants provided by alignment of states

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	52.92	-6.218	1293***	531.6**	56.34	356.2	1742***	39.56	1249***
Literacy	4.599**	19.10***	16.46***	3.206	3.206	25.78**	5.644*	5.644*	10.26
Urban	-21.99***	-36.88***	-47.31***	-32.13***	-32.13***	-82.15***	-13.53***	-13.53***	-25.03**
SC population	-4.334*	-22.63***	-92.77***	-4.85	-4.85	-221.8***	-3.949	-3.949	71.82
Population	8.87e-06***	1.32e-05***	2.93e-05***	4.44e-06***	4.44e-06***	3.02e-05***	1.34e-05***	1.34e-05***	1.66e-05**
Real SDP	0.00387***	0.00548***	0.00346***	0.00681***	0.00681***	0.00371**	0.00115	0.00115	0.00648***
Share of agriculture	4.134	15.84***	18.35***	-0.789	-0.789	17.65**	11.46***	11.46***	16.87***
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-88.99	-706.7**	-36.98	415.8	415.8	1915**	-577.7**	-577.7**	-1748**
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.793		0.829	0.781		0.829	0.837		0.837

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 3.2: Cycles in total grants for state plan schemes provided by alignment of states

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	8.53	-19.7	765.4***	276.5**	14.69	132.9	878.6***	-11.04	677.9***
Literacy	3.455**	9.688***	7.876**	3.233	3.233	15.07**	4.222**	4.222**	4.651
Urban	-13.32***	-19.52***	-22.44***	-19.65***	-19.65***	-49.79***	-8.725***	-8.725***	-8.339
SC population	-4.712***	-13.77***	-54.97**	-5.756**	-5.756**	-136.4***	-4.745**	-4.745**	41.71
Population	5.44e-06***	8.16e-06***	1.75e-05***	3.51e-06***	3.51e-06***	2.50e-05***	7.81e-06***	7.81e-06***	3.96E-06
Real SDP	0.00048	0.000859	-0.000408	0.00196***	0.00196***	-0.000947	-0.00104*	-0.00104*	0.00133
Share of agriculture	1.443	5.720**	6.453**	0.352	0.352	12.02***	3.997	3.997*	4.285
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	10.14	-229.9	135.8	215.6	215.6	1036*	-206	-206	-664.4
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.675		0.712	0.683		0.756	0.712		0.702

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 3.3: Cycles in total grants for central plan schemes provided by alignment of states

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	13.12	15.87	70.75**	2.996	8.846	12.2	64.58*	16.46	170.6***
Literacy	-0.42	-0.52	-0.55	0.0599	0.0599	0.49	-1.107**	-1.107**	-3.206**
Urban	0.21	0.439	-0.932	-0.368*	-0.368*	0.29	0.825	0.825	-2.34
SC population	-0.511	-0.37	0.756	-0.277	-0.277	0.165	-0.0448	-0.0448	1.379
Population	5.68e-07***	4.21e-07*	-1.30e-06**	7.27e-07***	7.27e-07***	-4.92E-08	2.91E-07	2.91E-07	-6.76E-07
Real SDP	0.000160*	0.000147	0.000402***	0.000244***	0.000244***	0.000325***	0.000167	0.000167	0.000231
Share of agriculture	0.467	1.193**	1.756***	0.359	0.359	1.160**	0.564	0.564	1.574
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0493	-27.16	11.14	-13.54	-13.54	-64.51	15.02	15.02	140
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.28		0.137	0.679		0.356	0.199		0.168

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 3.4: Cycles in total non-plan grants provided by alignment of states

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	-4.685	-6.514	482.3***	96.88	-15.27	148.7	467.7***	17.64	537.5***
Literacy	1.202	3.823*	2.748	0.427	0.427	7.858	1.113	1.113	1.372
Urban	-6.144***	-8.390***	-21.04***	-8.956***	-8.956***	-28.82***	-3.572**	-3.572**	-15.62**
SC population	2.168	-1.019	-23.37	2.709	2.709	-44.51	2.403	2.403	14.58
Population	-5.11E-09	-5.35E-08	8.42E-07	-1.02E-06	-1.02E-06	-2.01E-06	0.0000005	0.0000005	2.32E-06
Real SDP	0.00168***	0.00227***	0.00247***	0.00237***	0.00237***	0.00283***	0.00133**	0.00133**	0.00314***
Share of agriculture	-0.349	4.906**	9.233***	-2.815	-2.815	3.321	2.514	2.514	11.67***
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	46.04	-180.5	212.3	241.6*	241.6*	728.6	-118.7	-118.7	-448.7
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.586		0.627	0.623		0.648	0.578		0.623

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 3.5: Cycles in total loans provided by alignment of states[56]

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	98.57	83.62	647.5**	693.3***	153	756.6**	607.2***	19.62	602.6
Literacy	0.966	3.072	-6.708	0.243	0.243	-23.92**	4.262	4.262	0.701
Urban	-1.267	-5.181	-16.54*	0.663	0.663	-17	-3.177	-3.177	-26.05*
SC population	4.41	2.674	123.0***	-0.0566	-0.0566	128.0**	3.617	3.617	154.5**
Population	9.67e-06***	1.06e-05***	3.57e-05***	8.67e-06***	8.67e-06***	5.67e-05***	1.24e-05***	1.24e-05***	5.57E-06
Real SDP	0.00468***	0.00495***	0.00133	0.00466***	0.00466***	-0.0025	0.00310***	0.00310***	0.00662***
Share of agriculture	7.301**	6.603	5.608	4.754	4.754	-4.817	13.23***	13.23***	15.25**
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-642.0***	-627.3**	-1987***	-510.9*	-510.9*	-1588	-900.6***	-900.6***	-1909**
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.716		0.562	0.769		0.726	0.739		0.47

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

[56] Similar cycles exist in case of real values too, but we do not present them here due to space constraints.

Voter behavior in response to grants and loans provided by the center in National elections

$$Incumbent\ vote\ share_t = \theta_0 + \gamma F_{t-1} + \rho Z_t + \alpha_i + \varepsilon_{it}$$

Incumbent vote share here refers to the vote share obtained by the national coalition in national elections. Fiscal policy variables analyzed here include the various intergovernmental transfers and loans provided by the central government.

We must bear in mind that we are examining the effects of larger 'invisible' items on voter response. Though the inter-governmental grants are one of the main sources of revenue to state governments, and hence influence expenditure and taxes collected by them, these are not generally visible to the electorate. Given this we may not expect to see strong economic voting effects in case of inter-governmental transfers. However, voters do seem to respond to these in small measures. Voters respond positively to increases in non-plan grants. This may be due to the fact that components of these non-plan grants (generally Finance Commission grants) are used for gap-filling. There grants therefore could be used to in place of tax revenues and the positive effect of these grants may in fact be due to voters rewarding the incumbents for thus financed lower taxes.

In case of centrally sponsored schemes, where there is a higher clarity of responsibility i.e., a direct link can be established between the grant provider and the programs undertaken; there is some evidence that voters reward the central incumbent for increases in such grants.

As hypothesized, we do not find strong economic voting effects in case of transfers. Among those items we do find muted responses, we surmise that this is

generally due to the use which the grants are put into and the greater degree of clarity of responsibility associated with those.

Table 4.1: Voter response to Non-Plan Grants and Loans

	Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**
Grants – State	0.00574***	0.00574***	0.00534**
Grants – Other	-0.0106	-0.0106	-0.00858
Loans – Other	-0.00471	-0.00471	-0.00907
Votes in previous election	0.641***	0.641***	0.589***
Literacy	0.0832	0.0832	0.834*
Urban	0.0456	0.0456	0.616
Schedule class population	-0.0576	-0.0576	-1.354
Real SDP	5.07E-08	5.07E-08	4.68E-07
Time Dummies	Yes	Yes	Yes
Constant	17.44***	17.44***	-11.71
Observations	165	165	165
R-squared	0.665		0.667

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 4.2: Voter response to Plan Grants and Loans

	Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**
Grants - State Plan schemes	-0.00018	-0.00018	-0.0019
Grants - Central Plan schemes	-0.00612	-0.00612	-0.0125
Grants - Centrally sponsored schemes	0.0107*	0.0107*	0.00506
Loans - State Plan schemes	-0.00536	-0.00536	-0.00623
Loans - Central Plan schemes	0.0125	0.0125	0.0149
Loans - Centrally sponsored schemes	0.107	0.107	0.0591
Votes in previous election	0.625***	0.625***	0.601***
Literacy	0.091	0.091	0.823*
Urban	0.107	0.107	0.123
Schedule class population	-0.145	-0.145	-1.966
Real SDP	-5.55E-08	-5.55E-08	3.63E-07
Time Dummies	Yes	Yes	Yes
Constant	18.54***	18.54***	10.31
Observations	165	165	165
R-squared	0.663		0.668

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Cycles in Grants provided by the National government prior to sub-national elections

$$Fiscal\ Policy\ variable_t = \beta_0 + \beta_1 Election\ Dummy_t + \delta Z_t + \alpha_i + \varepsilon_{it}$$

The fiscal policy variables in this case are centrally distributed intergovernmental transfers and loans, and the election dummy denotes sub-national elections. In this section we attempt to explore the existence of electoral cycles in grants and loans provided by the center to the states at the time of sub-national elections. We may see such behavior if the central incumbent attempts to aid co-partisans contesting at the sun-national levels by influencing voter behavior through grants and loans provided. Interestingly, no cycles emerge in case of grants or loans.

Sub-national elections in the Indian states occur at different times, with some states having elections at the same time as the national elections and others having them in between. Given that we find strong evidence of political cycles in grants and loans at the time of national election; the lack of such evidence at the time of sub-national elections, some which take place at the same time as the national election, is surprising. This may be due to the fact that the central incumbent does not consciously attempt to manipulate grants and loans prior to sub-national elections; but where there is a bigger prize in terms of being in power at the national level; manipulations do occur. It may also be the case that the ill effects caused by the distortions and inefficiencies caused by such manipulations during sub-national elections; especially when they do not occur in congruence with national election are not worth the gains accrued by the central incumbents in terms of higher votes.

Voter behavior in response to grants and loans provided by the center in Sub-national elections

$$Incumbent\ vote\ share_t = \theta_0 + \gamma F_{t-1} + \rho Z_t + \alpha_i + \varepsilon_{it}$$

Incumbent vote share here refers to the vote share obtained by the national coalition in sub-national elections. Fiscal policy variables analyzed here include the various intergovernmental transfers and loans provided by the central government.

Here, the effect on votes obtained by the central incumbents at the sub-national elections due to grants and loans provided by the same is analyzed. Since these transfers are not visible, voter behavior towards them may be non-existent. Interestingly, in case of central plan scheme grants where the central incumbent can clearly take the credit i.e., there is higher clarity of responsibility; voters respond positively to increases. While voters seem to be punishing the incumbents for increases in non-plan loans for miscellaneous purposes; there is some evidence that they reward grants provided for such purposes. As mentioned previously, since non-plan loans may lead to lower tax revenues collected by state governments, the positive coefficient on non-plan loans may be capturing that effect.

Table 6.1: Voter response to Plan Grants and Loans

		Nominal Variables		Real Variables		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Grants - State Plan	-0.0013	-0.0016	-0.00149	-0.00255	-0.00255	-0.00189
Grants - Central Plan	0.0271	0.0283	0.0577*	0.00328	0.00328	0.028
Grants - Centrally Sponsored schemes	0.00238	0.0026	-0.00295	-0.0017	-0.0017	-0.00231
Loans - State Plan	0.00292	0.00293	0.00233	0.0016	0.0016	0.00265
Loans - Central Plan	0.00399	0.0426	0.141	-0.0371	-0.0371	0.0109
Loans - Centrally Sponsored schemes	-0.000231	-0.0107	-0.0356	0.0162	0.0162	-0.032
Votes in Previous election	0.580***	0.578***	0.600***	0.585***	0.585***	0.586***
Literacy	-0.183	-0.153	0.309	-0.225*	-0.225*	0.149
Urban	0.0615	0.0485	5.74E-01	0.0467	0.0467	5.61E-01
Schedule class Population	0.221*	2.22E-01	1.77E-01	1.99E-01	1.99E-01	1.13E+00
Population	-1.90e-07***	-1.82e-07***	2.93E-07	-1.49e-07**	-1.49e-07**	2.95E-07
Real SDP	4.71E-07	4.88E-07	2.52E-07	5.23E-07	5.23E-07	3.17E-07
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	26.18***	24.92***	-21.12	28.17***	28.17***	-25.84
Observations	136	136	136	136	136	136
R-squared	0.566		0.57	0.561		0.56

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 6.2: Voter response to Non - Plan Grants and Loans

	Nominal Variables			Real Variables		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Grants - Non-plan state	0.000182	-0.000646	-0.00205	0.000688	-0.0000923	-0.002
Grants - Non-plan other	0.0121**	0.0110**	0.00766	0.0139**	0.0126**	0.00768
Loans - Non-plan other	-0.0329*	-0.0344*	-0.0332*	-0.0239**	-0.0242***	-0.0231**
Votes in Previous election	0.576***	0.565***	0.555***	0.588***	0.579***	0.563***
Literacy	-0.254**	-0.232*	0.00811	-0.273**	-0.258**	0.000205
Urban	0.103	0.0933	0.266	0.13	0.121	0.267
Schedule class Population	0.213	0.228	0.507	0.256*	0.270*	0.309
Population	-1.43e-07***	-1.35e-07**	1.17E-07	-1.54e-07***	-1.50e-07***	2.99E-08
Real SDP	3.45E-07	3.43E-07	2.88E-08	3.55E-07	3.6E-07	1.69E-07
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	29.51***	28.78***	4.701	30.37***	29.96***	10.63
Observations	136	136	136	136	136	136
R-squared	0.583		0.566	0.592		0.573

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Cycles in expenditures undertaken and revenues collected by the sub-national governments prior to national elections

$$Fiscal\ Policy\ variable_t = \beta_0 + \beta_1 Election\ Dummy_t + \delta Z_t + \alpha_i + \varepsilon_{it}$$

The fiscal policy variables in this case are state level tax and non-tax revenues collected and expenditures undertaken. And the election dummy denotes national elections. We may expect to find such manipulations of fiscal policy if the state incumbent is attempting to influence voters in its favor at the time of national elections.

As in case of transfers; alignment matters in case of political cycles in taxes, other revenues and expenditures too. However; in case of expenditures, political cycles are persistent only in case of aligned states. Revenue expenditures, expenditures on education and labor are significantly higher prior to elections in case of aligned states. Interestingly while expenditures on social services, especially health are higher pre-election in case of aligned states; they are lower in case of unaligned states. No cycles are found for total capital outlay, own tax and non-tax revenues for aligned states; however these are significantly lower pre-election in case of unaligned states. While both aligned and unaligned states experience electoral cycles in pensions; higher pensions are distributed in unaligned states.

There is strong evidence to the fact that state incumbents attempt to aid their co-partisans at the national level by manipulating expenditures. This result fortifies the rationale given for cycles found in transfers to unaligned states. Since national incumbents seem to be able to manipulate visible expenditures through their so-partisans

at the state level, they may use to transfer system to influence indirectly, the behavior unaligned states prior to elections.[57]

It is also interesting to note that while aligned states seem to manipulate expenditures, unaligned states seem to manipulate tax and non-tax revenues. This behavior is optimal if the state incumbent is attempting to improve his (her) own chances in the national election, as the credit for lower taxes accrues exclusively to him or her while the credit would have been 'shared' with the central incumbent in case of expenditures undertaken.

[57] This is consistent with Khemani's (2003) finding that aligned states are generally more fiscally profligate than unaligned states.

Table 7.1: Cycles in Revenue expenditures undertaken by states by alignment

					Nominal Values				
		All States			Aligned States			Unaligned States	
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	35.61	-25.98	688.6	3550***	368.3	2252*	6171***	-352.5	-2763
Literacy	39.44***	50.89***	87.75***	4.822	4.822	-30.38	74.87***	74.87***	131.6***
Urban	-85.93***	-108.1***	-135.2***	-94.77***	-94.77***	-193.9***	-85.68***	-85.68***	-95.21
SC population	-46.33***	-64.60***	-64.06	-38.25*	-38.25*	-567.1**	-83.62***	-83.62***	629.8*
Population	-1.11e-05*	-2.04e-05***	0.000193***	-5.12e-05***	-5.12e-05***	0.000136***	3.84e-05***	3.84e-05***	0.000154***
Real SDP	0.145***	0.159***	0.167***	0.162***	0.162***	0.178***	0.126***	0.126***	0.191***
Share of agriculture	65.09***	72.10***	35.49	39.51	39.51	24.59	95.02***	95.02***	27.97
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-4418***	-4435***	-9836***	-1509	-1509	3742	-6623***	-6623***	-18893***
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.912		0.93	0.934		0.957	0.913		0.909

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.2: Cycles in Expenditures on social services undertaken by states by alignment

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	42.56	-35.54	183.2	1311***	126.5	1479***	1753***	-49.01	-1199**
Literacy	9.917**	26.08***	30.50***	2.178	2.178	-18.9	16.43**	16.43**	47.90***
Urban	-33.15***	-56.06***	-58.83***	-42.21***	-42.21***	-83.71***	-24.27***	-24.27***	-29.24
SC population	-17.90***	-39.86***	-28.68	-23.10***	-23.10***	-300.5***	-16.65**	-16.65**	207.9*
Population	-6.41e-06***	-1.28e-05***	3.71e-05***	-1.84e-05***	-1.84e-05***	2.38e-05**	6.69e-06**	6.69e-06**	3.37e-05**
Real SDP	0.0522***	0.0644***	0.0623***	0.0585***	0.0585***	0.0669***	0.0456***	0.0456***	0.0666***
Share of agriculture	11.52*	23.41***	21.38***	4.628	4.628	26.68**	22.98**	22.98**	12.48
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-789.7**	-1170**	-2658***	136.9	136.9	3137**	-1635***	-1635***	-6160***
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.921		0.934	0.938		0.963	0.922		0.913

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.3: Cycles in expenditures on education undertaken by states by alignment

					Nominal Values				
		All States			Aligned States			Unaligned States	
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	-15.19	-34.46	605.5**	580.3***	31.34	995.1***	581.6**	-89.76	-462.7
Literacy	12.18***	16.55***	1.684	9.760***	9.760***	-18.21**	14.92***	14.92***	18.16*
Urban	-23.90***	-34.75***	-43.01***	-26.08***	-26.08***	-55.49***	-20.89***	-20.89***	-32.53**
SC population	-15.52***	-27.03***	-12.21	-17.56***	-17.56***	-165.1***	-18.01***	-18.01***	100.5
Population	-1.05E-06	-4.38e-06**	3.32e-05***	-6.31e-06***	-6.31e-06***	3.41e-05***	5.20e-06**	5.20e-06***	2.53e-05***
Real SDP	0.0286***	0.0347***	0.0324***	0.0298***	0.0298***	0.0329***	0.0269***	0.0269***	0.0368***
Share of agriculture	11.60***	16.79***	15.55***	10.21**	10.21**	23.74***	15.60***	15.60***	8.652
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-790.7***	-803.7***	-1134*	-496.8*	-496.8*	1384*	-1066***	-1066***	-2789***
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.909		0.916	0.929		0.958	0.912		0.884

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.4: Cycles in expenditures on health undertaken by states by alignment

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	23.68	-10.65	-44.32	280.3***	43.51	223.2**	369.4***	-8.511	-253.5*
Literacy	2.109**	8.361***	10.24***	0.887	0.887	4.055	3.298**	3.298**	10.82***
Urban	-5.541***	-12.36***	-13.05***	-6.932***	-6.932***	-13.60***	-3.941***	-3.941***	-10.58**
SC population	-0.534	-6.698***	-14.63	-1.356	-1.356	-39.02**	-0.353	-0.353	31.83
Population	3.23E-07	4.88E-07	1.19e-05***	-2.36e-06***	-2.36e-06***	5.64e-06***	3.40e-06***	3.40e-06***	1.29e-05***
Real SDP	0.00872***	0.0108***	0.00963***	0.0100***	0.0100***	0.0107***	0.00718***	0.00718***	0.0104***
Share of agriculture	2.624**	4.812***	4.484***	0.44	0.44	7.859***	5.725***	5.725***	1.427
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-234.9***	-383.4***	-624.4***	-33	-33	-65.04	-427.8***	-427.8***	-1142***
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.902		0.906	0.942		0.948	0.893		0.869

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.5: Cycles in expenditure on labor and employment undertaken by states by alignment

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	-4.485	0.279	32.20***	-4.97	-5.029	53.25***	-14.73*	-4.791	5.073
Literacy	0.393***	-0.597***	-1.158***	0.435***	0.435***	-2.529***	0.432***	0.432***	-0.441
Urban	-0.302***	0.124	0.357	-0.280**	-0.280**	-0.131	-0.360***	-0.360***	0.799*
SC population	-0.416***	-0.0464	3.542***	-0.349**	-0.349**	-0.277	-0.666***	-0.666***	3.187
Population	-9.21e-08**	-4.19e-07***	-5.10e-07***	-7.01E-08	-7.01E-08	-2.73E-07	-5.43E-08	-5.43E-08	-8.93e-07***
Real SDP	0.000715***	0.000860***	0.000886***	0.000677***	0.000677***	0.000918***	0.000725***	0.000725***	0.000909***
Share of agriculture	0.156	-0.212	-0.326**	0.206	0.206	-0.443	0.106	0.106	-0.239
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-15.45**	30.11***	11.15	-18.73*	-18.73*	120.9***	-13.73	-13.73	-15.18
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.834		0.801	0.842		0.857	0.846		0.759

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.6: Cycles in pensions provided by states by alignment

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	-33.87	-11.22	942.7***	274.3*	-6.094	736.9***	716.1***	-55.06	437.0*
Literacy	5.204**	-0.0706	-15.27***	2.473	2.473	-30.07***	7.565**	7.565**	-10.17
Urban	-8.112***	-14.21***	-13.34**	-8.216***	-8.216***	-22.99***	-7.741**	-7.741**	-8.017
SC population	3.007	-4.663	-4.235	0.673	0.673	-55.43	3.049	3.049	160.6***
Population	-9.14E-07	-5.70e-06***	9.55e-06***	-3.33e-06***	-3.33e-06***	1.53E-06	1.42E-06	1.42E-06	2.95E-06
Real SDP	0.0101***	0.0161***	0.0153***	0.0105***	0.0105***	0.0141***	0.00980***	0.00980***	0.0231***
Share of agriculture	1.561	0.928	-2.09	2.087	2.087	-3.522	2.67	2.67	-3.349
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-351.1**	122.2	418.1	-186.9	-186.9	2144***	-511.9*	-511.9*	-1754***
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.772		0.833	0.799		0.85	0.775		0.865

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.7: Cycles in total capital outlay undertaken by states by alignment

					Nominal Values				
		All States			Aligned States			Unaligned States	
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	38.44	211.7	-1584***	-20.76	743.4***	-975.9**	1409***	1409***	-1581**
Literacy	0.897	22.10***	58.56***	-4.258	-4.258	37.10***	4.327	4.327	49.29***
Urban	-12.25***	-29.43***	-9.285	-22.09***	-22.09***	-49.53***	-6.837	-6.837	40.90*
SC population	-20.27***	-30.39***	16.2	-13.99***	-13.99***	-143.5**	-28.12***	-28.12***	159
Population	-4.29e-06**	-3.61E-06	3.00e-05***	-1.49e-05***	-1.49e-05***	-2.46e-05***	7.85e-06***	7.85e-06***	7.66e-05***
Real SDP	0.0214***	0.0261***	0.0227***	0.0291***	0.0291***	0.0380***	0.0136***	0.0136***	0.00829**
Share of agriculture	12.43**	11.32*	3.823	4.379	4.379	3.427	16.36**	16.36**	-0.13
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-273.2	-673.3	-3685***	474.6	474.6	1146	-629.6	-629.6	-6735***
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.728		0.738	0.845		0.867	0.677		0.637

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.8 Cycles in Own tax revenues collected by states by alignment

					Nominal Values				
		All States			Aligned States			Unaligned States	
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	13.46	-119.1	-1207**	928.2	86.62	-289.2	1894***	-97.21	-2743***
Literacy	0.833	9.34	32.40**	-7.271	-7.271	-25.83	6.44	6.44	61.07***
Urban	-13.34**	-17.9	50.40***	-31.13***	-31.13***	-15.54	-2.181	-2.181	133.4***
SC population	-18.35**	-30.14	-25.43	-10.58	-10.58	-242.8**	-27.74**	-27.74**	60.09
Population	-4.70e-05***	-6.88e-05***	-5.62e-05***	-5.91e-05***	-5.91e-05***	-8.69e-05***	-3.20e-05***	-3.20e-05***	-3.34e-05*
Real SDP	0.0969***	0.122***	0.122***	0.107***	0.107***	0.136***	0.0869***	0.0869***	0.113***
Share of agriculture	11.45	-4.46	-18.80*	3.12	3.12	-34.71**	15.63	15.63	-18.87
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-688.2	-65.13	-2353*	222.2	222.2	5197***	-1133	-1133	-6584***
Observations	608	608	608	294	294	294	314	314	314
R-squared	0.924		0.946	0.939		0.968	0.92		0.925

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 7.9: Cycles in Non-tax revenues collected by states by alignment

	Nominal Values								
	All States			Aligned States			Unaligned States		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Scheduled election	109	-34.47	-683.1**	600.0**	141.8	-341.4	1136***	33.87	-687.5**
Literacy	-12.11***	0.424	25.67***	-11.10**	-11.10**	14.93	-9.504**	-9.504**	32.81***
Urban	11.52***	5.245	26.23***	13.41***	13.41***	37.63**	7.515*	7.515*	20.56*
SC population	6.813**	19.42**	77.10*	9.936**	9.936**	133.0*	-0.401	-0.401	-163.2**
Population	-1.20e-05***	-1.18e-05***	-1.76e-05***	-1.11e-05***	-1.11e-05***	-0.0000126	-1.02e-05***	-1.02e-05***	-2.01e-05***
Real SDP	0.0185***	0.0189***	0.0196***	0.0181***	0.0181***	0.0189***	0.0177***	0.0177***	0.0165***
Share of agriculture	12.66***	-13.89***	-22.62***	11.09*	11.09*	-22.47**	15.14***	15.14***	-18.80***
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-301.8	178.7	-1498**	-410.3	-410.3	-2224	-298.3	-298.3	1176
Observations	609	609	609	295	295	295	314	314	314
R-squared	0.73		0.711	0.782		0.738	0.71		0.674

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Voter behavior in response to expenditure, taxes and other revenues in national elections

$$Incumbent\ vote\ share_t = \theta_0 + \gamma F_{t-1} + \rho Z_t + \alpha_i + \varepsilon_{it}$$

Incumbent vote share here refers to the vote share obtained by the national coalition or the chief minister's party in national elections. Fiscal policy variables analyzed here include the various taxes, non-tax revenues and expenditures of the state government.

Since both the central incumbent and state incumbents have a role to play in undertaking expenditures; estimations using percent votes received by both the central and state incumbents in the elections are carried out.

Results from estimations using the percent votes obtained by the state incumbents are similar to those obtained in the case of sub-national elections. Voters tend to penalize most increases in expenditures. While voters seem to be indifferent to revenue expenditures on social services; increases in economic and infrastructural expenditures on items such as agriculture, industries, rural development and roads are penalized. Increases in expenditures on public works and small scale industries however, are rewarded. While increases in capital expenditures on health and sanitation are rewarded, expenditure in agriculture and small scale industries are penalized.

Interestingly, while voters penalized state incumbents for increases in taxes in sub-national elections, in case of the national elections, voter do not seem to be basing their votes on taxes or non-tax revenues. Voters therefore seem cognizant of the division of functional responsibility between the levels of government and basing their voting

decisions in national elections on items wherein both the center and the state have a role to play.

Evidence of economic voting is more muted in case of estimations using the percent votes obtained by the central incumbent. This is not very surprising as the central incumbent is directly responsible for a small percent of expenditures undertaken and they do not share the same tax base with the sub-national government. Revenue expenditures on infrastructure such as housing, irrigation, roads and public works are rewarded by voters. This is interesting as the increases in these were either ignored or penalized by voters in case of sub-national election or in the exercises outlined in the previous paragraph. Since the national government has always been seen as the agent behind infrastructural development, voters are reacting to expenditure on these items. It may also indicate those voters are more satisfied with performance of the national government in this area, than with the performance of the sub-national government. Voters also do not base their votes on any taxes, providing further credence to the supposition that voters are aware of the different functional responsibility among governments. This result would also imply that voters perceive incumbents at different levels of governments are distinct entities even though they may be co-partisans. In other words, national elections are a referendum on the performance of the national incumbent and not on the performance of co-partisans at the sub-national level.

Table 8.1: Voter response to Revenue Expenditures on Economic services (State incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Urban Development	0.0195	0.0192	-0.00796	0.0239	0.0233	-0.00123	0.178***	0.175***	0.0978
Cooperation	0.0613	0.0609	0.0819*	0.0252	0.0241	0.0344	0.141	0.133	0.121
Agriculture & allied activities	-0.00234	-0.00212	0.000019	0.0026	0.00371	0.00689	-0.0104	-0.00989	-0.0387**
Sewage & Water	0.0561	0.0546	0.0262	0.0593	0.0553	0.041	0.0886	0.0868	0.0913
Rural Development	-3.14E-03	-0.00318	-0.00522	-7.91E-04	-0.00121	-0.00331	-2.06E-02	-0.0247	-0.0441**
Industries	-0.045	-0.0466	-0.0722	-0.0182	-0.0203	-0.0298	-0.138*	-0.142**	-0.176**
Small scale industries	-0.0701**	-0.0698**	-0.0347	-0.0601**	-0.0623**	-0.0646	0.101**	0.105**	0.111**
Votes in previous election	0.357***	0.346***	0.197***	0.350***	0.314***	0.206***	0.382***	0.350***	0.192***
Align	-0.331	0.00656	3.451	-0.0205	0.957	3.565	1.04	1.582	4.698*
Literacy	0.187	0.187	0.0664	0.173	0.174	0.0608	0.126	0.137	-0.046
Urban	-0.360**	-0.367**	-2.580***	-0.306*	-0.329*	-2.193***	-0.468***	-0.480***	-1.324**
Schedule caste population	-1.17E-01	-1.23E-01	-4.14E+00	-6.89E-02	-8.43E-02	-2.85E+00	2.19E-01	1.96E-01	-2.68E+00
Real SDP	1.15E-07	1.27E-07	2.02E-06	-5.16E-07	-5.16E-07	1.14E-06	1.78E-07	1.52E-07	-3.60E-08
Population	-5.86E-08	-6.01E-08	-4.96E-07	-6.36E-08	-6.60E-08	-4.67E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	34.38***	34.82***	148.8***	33.31***	34.20***	122.4**	29.46***	30.93***	113.3**
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.301		0.255	0.308		0.247	0.375		0.307

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.2: Voter response to Revenue Expenditures on Infrastructure (State incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Housing	0.0215	0.0148	-0.0458	0.0248	0.0201	-0.0547	0.0674***	0.0627***	-0.00884
Irrigation	0.0046	0.00413	0.00599	0.00552	0.00521	0.00796	-0.0162	-0.0153	0.0228
Power	0.000666	0.000621	0.000696	0.000805	0.000796	0.000828	0.0103**	0.0101**	0.00213
Roads & Bridges	-0.00219	-5.36E-06	0.00343	-0.00749	-0.00599	-0.000794	-0.0266**	-0.0274**	-0.0574***
Police	-4.60E-03	-0.00435	0.00184	-5.68E-03	-0.00574	0.00301	0.0177**	0.0175**	-0.00249
Public works	0.0301	0.0259	-0.00425	0.0221	0.0213	-0.02	0.0317*	0.0362**	0.0852***
Votes in previous election	0.350***	0.313***	0.186**	0.337***	0.307***	0.180**	0.333***	0.307***	0.182***
Align	-1.206	-0.00356	3.676	-1.132	-0.128	3.928	0.76	1.214	3.714
Literacy	0.185	0.183	-0.0278	0.19	0.189	-0.0172	0.192	0.202	-0.163
Urban	-0.391**	-0.411**	-2.049***	-0.421**	-0.440**	-2.130***	-0.408**	-0.428**	-0.697
Schedule caste population	-0.038	-0.0705	-3.6	-0.0262	-0.0538	-3.889	0.326*	0.315	0.041
Real SDP	-2.62E-07	-1.41E-07	1.13E-06	-1.57E-07	-5.55E-08	1.02E-06	4.25E-07	4.29E-07	2.66E-07
Population	-6.37E-08	-7.54E-08	-5.86E-07	-6.09E-08	-7.15E-08	-5.01E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	35.06***	36.70***	139.7***	35.56***	36.97***	142.9***	24.41***	25.25***	60.95
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.274		0.207	0.279		0.209	0.403		0.347

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.3: Voter response to Capital Expenditures on Economic and social services (State incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Education	-0.0897	-0.0791	-0.0161	-0.0934	-0.0844	-0.0462	-0.0121	-0.0121	0.0239
Health	0.0139	0.0143	0.0161	0.0144	0.0152	0.0213	0.0658***	0.0658***	0.0693***
Agriculture & allied activities	0.0219	0.0179	0.00623	0.0212	0.0191	0.00817	-0.0164	-0.0164	-0.0559***
Industries	0.00893	0.00981	0.00752	-0.00256	0.000785	0.0182	0.0875	0.0875	0.0911
Small scale industries	-0.305	-0.262	-0.266	-0.173	-0.152	-0.222	-0.223***	-0.223***	-0.281***
Votes in previous election	0.350***	0.299***	0.187***	0.353***	0.307***	0.189***	0.365***	0.365***	0.263***
Align	-1.358	0.276	3.415	-1.438	0.0511	3.404	-0.347	-0.347	2.523
Literacy	0.216	0.211	-0.232	0.2	0.197	-0.271	0.066	0.066	-0.492
Urban	-0.379**	-0.405**	-2.079***	-0.385**	-0.409**	-2.001***	-0.158	-0.158	-1.916***
Schedule caste population	-0.0413	-0.0818	-3.008	-0.0434	-0.0801	-3.481	0.258	0.258	-2.169
Real SDP	-9.96E-08	-6.13E-08	2.56E-07	-1.14E-07	-7.64E-08	2.11E-08	4.34E-07	4.34E-07	6.7E-07
Population	-4.30E-08	-4.97E-08	-1.59E-07	-3.95E-08	-4.90E-08	2.43E-09			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	32.33***	34.67***	132.2***	31.94***	33.95***	132.4***	21.64***	21.64***	117.9***
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.295		0.209	0.296		0.212	0.457		0.334

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.4: Voter response to Capital Expenditures on Infrastructure (State incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Water & Sanitation	0.0137	0.0118	0.000015	0.015	0.0126	-0.00567	0.0733***	0.0733***	0.0502**
Housing	0.116	0.112	0.0829	0.0773	0.0758	0.0415	0.127***	0.127***	0.0142
Irrigation	0.000275	-0.00153	-0.0036	0.00116	-0.00087	-0.00369	-0.00327	-0.00327	-0.0254
Power	0.00155	0.000149	-0.00302	0.00148	-0.0000664	-0.00382	-0.00812	-0.00812	0.00369
Roads & Bridges	-0.00574	0.000202	0.0182	-0.00349	0.00311	0.0265*	-1.24E-02	-0.0124	0.0243
Votes in previous election	0.363***	0.274***	0.187***	0.358***	0.270***	0.187***	0.320***	0.320***	0.220***
Align	-0.77	1.824	4.143	-0.898	1.762	4.293*	0.736	0.736	3.931
Literacy	0.204	0.193	0.0496	0.217	0.198	0.0392	0.0751	0.0751	-0.0049
Urban	-0.409**	-0.456**	-2.270***	-0.416**	-0.454**	-2.311***	-0.211	-0.211	-1.648**
Schedule caste population	-0.171	-0.222	-2.798	-0.154	-0.203	-3.284	0.108	0.108	-2.105
Real SDP	3.5E-07	4.06E-07	3.28E-07	2.17E-07	2.66E-07	-8.11E-09	5.63e-07*	5.63e-07**	8.85E-07
Population	-8.49E-08	-9.77E-08	-2.54E-07	-8.19E-08	-9.46E-08	-1.68E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	34.42***	38.68***	123.4***	33.54***	37.84***	127.5***	29.50***	29.50***	90.79**
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.282		0.236	0.276		0.236	0.434		0.27

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.5: Voter response to Tax and Non-tax revenues (State incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Property tax	-0.0017	-0.00682	-0.0132	-0.00156	-0.00611	-0.012	-0.0716	-0.0663	-0.0227
State sales tax	-0.00312	-0.00233	-0.00107	-0.00302	-0.00275	-0.000858	-0.0047	-0.00374	0.00362
Motor Vehicles tax	0.00441	0.0053	0.0107*	0.00371	0.0044	0.00977	0.0136	0.0155	0.0289
Excise	0.00797	0.00369	-0.00606	0.00499	0.00449	0.00235	0.00494	0.00942	0.0205
Duty on Electricity	0.0137	0.0173*	0.0274**	0.0122	0.015	0.0249*	5.24E-02	0.0626*	0.113*
Other taxes	-0.00716	-0.00819	-0.00931*	-0.00622	-0.007	-0.00725	-0.064	-0.0684	-0.0966*
Revenue from social services	0.0164	0.0179	0.0388	0.0126	0.0136	0.0246	0.0147	0.017	0.025
Revenue from economic services	-0.00428	-0.00479	-0.00453	-0.00238	-0.00285	-0.00199	0.0109	0.00944	0.00288
Votes in previous election	0.340***	0.252***	0.182**	0.341***	0.261***	0.176**	0.326***	0.260***	0.173**
Align	-0.716	2.124	4.398*	-0.441	2.166	4.591*	-0.592	1.445	4.155
Literacy	0.226	0.218	-0.223	0.241	0.247	-0.0903	0.356**	0.350**	0.0603
Urban	-0.476***	-0.550***	-2.401***	-0.478***	-0.538**	-2.239***	-0.392**	-0.482**	-2.496***
Schedule caste population	-1.81E-01	-2.39E-01	-3.77E+00	-1.85E-01	-2.36E-01	-3.27E+00	-5.92E-03	-1.21E-01	-2.63E+00
Real SDP	6.87E-07	9.98E-07	1.22E-06	7.62E-07	1.02E-06	9.39E-07	5.12E-07	4.75E-07	2.77E-07
Population	-9.45E-08	-1.12E-07	-4.97E-07	-8.99E-08	-9.63E-08	-4.23E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	34.72***	39.30***	155.4***	32.09***	35.46***	136.5***	23.11**	27.45***	115.6**
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.289		0.266	0.292		0.256	0.295		0.251

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.6: Voter response to Revenue Expenditures on Infrastructure (Central incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Housing	-0.00514	-0.00514	0.0238	-0.0075	-0.0075	0.0085	0.000608	0.000608	0.0502*
Irrigation	0.00584	0.00584	0.00358	0.00488	0.00488	0.00507	0.0133	0.0133	0.0472*
Power	-0.0000153	-0.0000153	-0.00137	0.000365	0.000365	-0.00101	0.00287	0.00287	0.00569
Roads & Bridges	-0.0132	-0.0132	-0.0037	-0.0178*	-0.0178*	-0.0119	0.013	0.013	0.0263*
Police	0.00226	0.00226	0.00521	-0.009	-0.009	-0.00711	-0.00588	-0.00588	-0.0618***
Public works	-0.0337	-0.0337	-0.0446	-0.0225	-0.0225	-0.0339	0.0338**	0.0338**	0.0418*
Votes in previous election	0.605***	0.605***	0.577***	0.606***	0.606***	0.581***	0.622***	0.622***	0.549***
Align	-0.123	-0.123	0.486	0.133	0.133	0.456	-0.447	-0.447	-0.714
Literacy	0.0946	0.0946	0.839*	0.0795	0.0795	0.824*	0.143	0.143	0.912**
Urban	-0.00953	-0.00953	0.685	-0.00974	-0.00974	0.571	-0.0488	-0.0488	1.013
Schedule caste population	-0.159	-0.159	-1.74	-0.167	-0.167	-1.743	-0.00839	-0.00839	0.0408
Real SDP	4.04E-07	4.04E-07	-6.61E-07	8.39E-07	8.39E-07	-5.11E-08	1.34E-07	1.34E-07	-1.08E-07
Population	-5.46E-08	-5.46E-08	5.00E-07	1.00E-08	1.00E-08	5.35E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	23.29***	23.29***	-18.91	24.67***	24.67***	-15.11	16.37**	16.37**	-33.27
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.653		0.662	0.66		0.664	0.669		0.713

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.7: Voter response to Capital Expenditures on Economic and social services (Central incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Education	0.0151	0.0151	-0.0339	-0.0282	-0.0282	-0.0936	0.0083	0.0083	-0.00281
Health	0.00676	0.00676	0.00395	0.00416	0.00416	-0.000591	-0.00685	-0.00685	-0.0391**
Agriculture & allied activities	0.00863	0.00863	0.0123	0.00113	0.00113	0.00813	-0.0114	-0.0114	-0.00813
Industries	0.0191	0.0191	0.0285	0.000244	0.000244	0.0282	-0.0305	-0.0305	-0.057
Small scale industries	-0.145	-0.145	-0.0748	-0.0795	-0.0795	-0.00812	0.0846	0.0846	0.169
Votes in previous election	0.612***	0.612***	0.588***	0.616***	0.616***	0.585***	0.613***	0.613***	0.589***
Align	-0.469	-0.469	0.112	-0.365	-0.365	0.37	-0.26	-0.26	1.248
Literacy	0.0804	0.0804	0.811*	0.0806	0.0806	0.808*	0.136	0.136	1.108**
Urban	0.0178	0.0178	0.66	0.0118	0.0118	0.784	-0.0151	-0.0151	0.382
Schedule caste population	-0.152	-0.152	-1.686	-0.158	-0.158	-2.023	-0.222	-0.222	-1.856
Real SDP	-1.26E-08	-1.26E-08	-5.11E-07	1.02E-07	1.02E-07	-4.59E-07	-1.03E-07	-1.03E-07	2.2E-07
Population	-3.83E-08	-3.83E-08	4.34E-07	-2.56E-08	-2.56E-08	5.77E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	22.94***	22.94***	-17.13	22.81***	22.81***	-20.67	22.65***	22.65***	-7.426
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.648		0.659	0.646		0.662	0.649		0.679

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.8: Voter response to Capital Expenditures on Infrastructure (State incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Water & Sanitation	0.0172	0.0172	0.0155	0.0128	0.0128	0.00994	-0.0231*	-0.0231**	-0.0576***
Housing	-0.124**	-0.124**	-0.101	-0.128**	-0.128**	-0.107	-0.0357	-0.0357	-0.0811*
Irrigation	0.00135	0.00135	0.0016	0.000038	0.000038	0.00102	0.000731	0.000731	-0.00064
Power	0.000231	0.000231	-0.00188	0.0000186	0.0000186	-0.00254	0.00336	0.00336	-0.0000348
Roads & Bridges	0.00015	0.00015	-0.00169	0.00103	0.00103	0.00179	0.00981	0.00981	0.0158
Votes in previous election	0.606***	0.606***	0.586***	0.613***	0.613***	0.590***	0.625***	0.625***	0.620***
Align	-0.293	-0.293	0.222	-0.00235	-0.00235	0.518	-0.409	-0.409	0.937
Literacy	0.0925	0.0925	0.742	0.0792	0.0792	0.796*	0.162	0.162	0.990**
Urban	0.00298	0.00298	0.592	0.0107	0.0107	0.517	-0.0183	-0.0183	-0.101
Schedule caste population	-0.119	-0.119	-2.004	-0.119	-0.119	-2.078	-0.168	-0.168	-2.403
Real SDP	6.47E-08	6.47E-08	-4.43E-07	2.38E-07	2.38E-07	-4.17E-07	-1.98E-07	-1.98E-07	-2.96E-07
Population	-3.46E-08	-3.46E-08	0.00000045	-4.38E-08	-4.38E-08	3.91E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	22.92***	22.92***	-8.446	24.02***	24.02***	-6.166	18.97***	18.97***	11.4
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.657		0.664	0.658		0.664	0.658		0.683

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 8.9: Voter response to Tax and Non-tax revenues (Central incumbents)

	Nominal Values			Real Values			Per Capita Values		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Property tax	0.00651	0.00651	0.00266	0.00363	0.00363	0.00441	-0.00145	-0.00145	-0.00187
State sales tax	-0.00154	-0.00154	0.00112	-0.00043	-0.00043	0.00176	-0.00438	-0.00438	0.0116
Motor Vehicles tax	-0.000823	-0.000823	-0.00419	0.000223	0.000223	-0.00259	0.0116	0.0116	0.0148
Excise	0.0102	0.0102	0.0123	0.00115	0.00115	0.0035	-0.00517	-0.00517	-0.0109
Duty on Electricity	0.00372	0.00372	0.00921	0.00267	0.00267	0.0145	0.0193	0.0193	0.108*
Other taxes	-0.00134	-0.00134	0.000658	-0.00161	-0.00161	0.000791	-0.0297	-0.0297	-0.0178
Revenue from social services	0.037	0.037	0.0169	0.00562	0.00562	-0.000692	0.0393	0.0393	-0.0129
Revenue from economic services	0.00103	0.00103	0.00388	-0.000632	-0.000632	-0.000321	0.00159	0.00159	0.00379
Votes in previous election	0.605***	0.605***	0.581***	0.618***	0.618***	0.590***	0.619***	0.619***	0.585***
Align	-0.104	-0.104	0.894	-0.0893	-0.0893	0.712	-0.294	-0.294	0.595
Literacy	0.115	0.115	0.902*	0.0701	0.0701	1.003**	0.127	0.127	1.076**
Urban	-0.0151	-0.0151	0.533	-0.00233	-0.00233	0.515	-0.0423	-0.0423	-0.318
Schedule caste population	-1.75E-01	-1.75E-01	-1.49E+00	-1.77E-01	-1.77E-01	-2.14E+00	-2.07E-01	-2.07E-01	-8.38E-01
Real SDP	-8.95E-07	-8.95E-07	-2.23E-06	-1.64E-07	-1.64E-07	-1.34E-06	1.24E-07	1.24E-07	2.55E-07
Population	-7.44E-09	-7.44E-09	6.45e-07*	-3.64E-08	-3.64E-08	4.93E-07			
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	22.67***	22.67***	-23.29	23.29***	23.29***	-18.18	20.34***	20.34***	-7.94
Observations	165	165	165	165	165	165	165	165	165
R-squared	0.655		0.671	0.645		0.666	0.65		0.675

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Voter responses to economic growth and inflation in national and sub-national elections

$$Incumbent\ vote\ share_t = \theta_0 + \gamma O_{t-1} + \rho Z_t + \alpha_i + \varepsilon_{it}$$

This section analyses voter responses to economic outcomes in terms of GDP growth, SDP growth and inflation. This also aids in quantifying a popular notion in India that economic growth and inflation have had a sizeable impact on election outcomes. We also examine the effects of political clarity of responsibility by examining the effect of these economic outcomes on not only the PM's party, but also on the major parties of the coalition and all parties (including those providing 'outside' support). We expect stronger responses when we examine the PM's party alone than in other cases as a greater number of coalition members makes it difficult for voters to attribute responsibility.

Though conclusions from empirical studies are equivocal; in the case of India, preliminary results indicate that economic performance measured by economic growth and inflation influence voter responses. At the national level, voters tend to reward incumbents for consistent increases in income over their term in office while election year increases are penalized.[58] This may imply that the Indian voters have long memories and utilize a large set on information on growth to base their decision. Incumbents are also penalized for increases in inflation prior to elections.[59] These results are consistent across the types of electoral outcomes used. Interestingly; the PM's party seems to bear

[58] This finding is consistent with many other US and cross county studies. Brender and Drazen (2006) conclude that economic growth is rewarded by voters in developing countries while Wilkin et al. (1997) concludes that economic growth positively affects incumbent's vote share. Chappell (1990) finds that in the US presidential and House elections, voters reward economic growth while they disapprove of inflation.
[59] This is consistent with Chapel and Veiga (2000) findings that higher inflation adversely affects incumbents.

the brunt of voter's decisions. Economic voting effects seem to diminish as we move from examining the PM's party to including all members of the ruling coalition. When we use percent votes obtained by all coalition members as our dependent variable; we find that average growth over the incumbent's term is not a significant factor in their electoral fortunes. This implies that economic voting effects may be weaker when there is a lower clarity of responsibility in form of a large coalition and electoral fortunes of junior coalition members may not be affected as much as larger partners. We also find that income growth in the period prior to the elections affect incumbent vote share adversely; we are unable to provide a satisfactory explanation for this phenomenon. It may be the case that the electorate view previous period growth as a proxy for changes in economic policies of the government.[60] However examining the effects of both these growth variables, we conclude that Indian voters do tend to reward good economic performances.

While examining the effect of economic conditions on incumbent vote share reflects the decisions of the electorate; examining their effects on seats won by incumbents would enable us to conclude whether such effects on votes translated into changes in the constituent assemblies. We find similar results using seats and percent seats won as independent variables.

[60] This argument is advanced in the light of the results obtained in previous sections. Voters seem to penalize increases in certain expenditures. If these expenditures lead to temporary growth in incomes, the voters may perceive this as a pre-election ploy which may not continue in later years and therefore react negatively to such income growth.

Table 9.1: Effect of economic conditions on percent votes obtained in National elections by incumbents

	Percent Votes obtained by PM's Party			Percent votes obtained by Main Coalition members			Percent votes obtained by All Coalition members		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Real GDP Growth	-6.213***	-6.213***	-12.22***	-5.303***	-5.303***	-12.29***	-3.858***	-3.930***	-9.678***
Growth over term	10.87***	10.87***	24.01***	7.507***	7.507***	21.82***	-16.89***	-16.76***	-4.509
Inflation	-2.963***	-2.963***	-4.181***	-2.682***	-2.682***	-3.958***	-0.339	-0.364	-1.351*
Real SDP Growth	-0.142	-0.142	-0.0697	-0.0954	-0.0954	-0.0791	0.0528	0.0546	0.11
Performance in past election	0.570***	0.570***	0.450***	0.634***	0.634***	0.586***	0.564***	0.555***	0.513***
Literacy	0.0812	0.0812	0.766*	0.106	0.106	0.989**	0.00799	0.0123	0.708**
Urban	-0.000519	-0.000519	0.779*	0.00348	0.00348	0.847**	0.0733	0.0856	1.019***
Schedule Cast Population	-0.198*	-0.198*	-2.668	-0.191	-0.191*	-1.147	-0.239*	-0.23	-1.706
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	17.67	17.67	-29.17	25.06	25.06	-53.94	129.8***	129.4***	65.72
Observations	168	168	168	168	168	168	168	168	168
R-squared	0.727		0.742	0.636		0.645	0.468		0.482

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 9.2: Effect of economic conditions on seats won in National elections by incumbents

	Seats won by PM's Party			Seats won by Main Coalition members			Seats won by All Coalition members		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Real GDP Growth	-2.683***	-2.683***	-7.616***	-2.563***	-2.563***	-7.693***	-1.978**	-1.978**	-6.149***
Growth over term	3.202***	3.202***	14.17***	2.756*	2.756*	13.53***	1.985	1.985	10.32**
Inflation	-1.218***	-1.218***	-2.123***	-1.163***	-1.163***	-2.156***	-0.617	-0.617	-1.362***
Real SDP Growth	0.0511	0.0511	0.104	0.065	0.065	0.111	0.0707	0.0707	0.145
Performance in past election	0.488***	0.488***	0.310***	0.475***	0.475***	0.286**	0.563***	0.563***	0.336**
Literacy	-0.0489	-0.0489	0.664***	-0.0593	-0.0593	0.655***	-0.0681	-0.0681	0.493*
Urban	0.072	0.072	0.164	0.126*	0.126*	0.397	0.138*	0.138*	0.449*
Schedule Cast Population	0.0643	0.0643	-2.418	0.116**	0.116**	-1.719	0.0884	0.0884	-1.633
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	13.76*	13.76*	-16.94	13.92	13.92	-25.7	10.16	10.16	-17.85
Observations	168	168	168	168	168	168	168	168	168
R-squared	0.53		0.387	0.505		0.324	0.523		0.244

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Table 9.3: Effect of economic conditions on percent seats won in National elections by incumbents

	Percent Seats won by PM's Party			Percent Seats won by Main Coalition members			Percent Seats won by All Coalition members		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Real GDP Growth	-14.16***	-14.16***	-42.09***	-15.99***	-15.99***	-38.52***	-15.23***	-15.23***	-36.47***
Growth over term	11.5	11.5	71.23***	8.199	8.199	55.23***	2.747	2.747	45.34***
Inflation	-7.673***	-7.673***	-13.18***	-6.933***	-6.933***	-11.04***	-6.467***	-6.467***	-10.46***
Real SDP Growth	-0.207	-0.207	-0.0633	-0.0807	-0.0807	-0.0121	0.0185	0.0185	0.126
Performance in past election	0.214**	0.214**	0.0473	0.302***	0.302***	0.229*	0.260***	0.260***	0.139
Literacy	-0.0619	-0.0619	3.763***	0.298	0.298	3.478***	0.123	0.123	3.038***
Urban	0.194	0.194	1.08	-0.102	-0.102	0.606	0.0635	0.0635	0.706
Schedule Cast Population	-0.0667	-0.0667	0.462	-0.081	-0.081	-0.416	-0.2	-0.2	-0.372
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	122.3***	122.3***	-211.3*	124.9***	124.9***	-139.7	153.5***	153.5***	-80.37
Observations	168	168	168	168	168	168	168	168	168
R-squared	0.33		0.384	0.344		0.379	0.321		0.357

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Interestingly, voters do not seem to base their votes in sub-national elections on growth in real state domestic product. Rodden and Ebid (2006) argue that at the sub-national level voters care more about relative income growth i.e., how their state has fared compared to the entire nation. To test this proposition, a variable measuring the difference between the state's growth and national growth has been included. Relative growth too seems to have no part to play in voter responses in sub-national elections. They also argue that economic geography of a state matters, for example if a state's domestic product is heavily dependent on primary products; SDP will be affected mainly by factors other than state's economic policies. In India this is especially true is case of agriculture as its output is heavily dependent on nature and not necessarily on a state's policy. To account for this, another variable is constructed as the product of relative growth and primary product index (share of primary sector in SDP). Results indicate however that this hypothesis too is not accepted.[61]

Given the results in the previous sections it seems that voters in India hold the national government responsible for the performance of the economy and inflation while they evaluate state governments on the basis of expenditures undertaken and taxes collected. This would attribute a high level of sophistication to the Indian electorate as this closely corresponds to the functional division of responsibilities in the Indian constitution.

[61]Many other papers have found similar results; i.e., strong evidence of voter responses to income and inflation in national elections and none in sub-national elections.

Table 9.4: Effect of economic conditions on electoral outcomes of incumbents in Sub-national elections

	Percent votes obtained by Incumbent			Seats obtained by Incumbent			Percent seats won by Incumbent		
VARIABLES	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**	**POLS**	**RE**	**FE**
Real SDP Growth	14.5	14.5	16.2	-2.306	-2.306	-2.504	1.669	1.669	2.495*
Growth over term	0.974	0.974	-1.699	-1.818	-1.818	-0.889	-0.878	-0.878	-0.678
Relative Growth	-8.101	-8.101	-3.369	2.527	2.527	2.963	-1.259	-1.259	-2.186
Relative Growth (interacted with state's economic geography)	-18.69	-18.69	-38.71	-1.243	-1.243	-2.447	0.208	0.208	0.635
Performance in previous election	-0.0258	-0.0258	-0.177***	0.339***	0.339**	0.00668	0.196*	0.196	-0.00794
Literacy	1.192	1.192	-1.668	-0.911	-0.911	-0.409	-0.29	-0.29	-0.188
Urban	0.721	0.721	0.35	0.517	0.517	1.328	0.406	0.406	1.262
Scheduled caste population	4.845**	4.845	11.14	0.369	0.369	-4.299	-0.302	-0.302	-9.788
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-154.3	-154.3	-91.99	91.66***	91.66**	136.6	32.18**	32.18**	128.8
Observations	139	139	139	139	139	139	139	139	139
R-squared	0.076		0.117			0.165			0.124

Note: *** indicates significance at 1%. ** indicates significance at 5% and * indicates significance at 10%.

Summary

The results obtained, while consistent with the findings in existing literature also extend the same by providing insights on phenomena which are rarely studied in depth in developing countries and new democracies.

We find that political cycles exist incase of almost all fiscal policy instruments available to Indian government at various levels. Though such manipulations are economically inefficient; these manipulations are strategic politically. The incumbents tend to manipulate those items of fiscal policy whose responsibility lies solely in their domain, thereby internalizing all the gain (or loss) they can obtain from these manipulations. Therefore we find that taxes and non-tax revenues of state governments are lower prior to sub-national elections while at the time of national elections; aligned states increase some expenditures (a responsibility which they share with their co-partisan at the center) and unaligned states reduce taxes and non-tax revenues (items for which they alone are responsible). Similarly, there is no evidence of any cycles in intergovernmental transfers or loans at the time of sub-national elections indicating perhaps that inefficiencies from such manipulations out weigh the political gains that can be obtained by the central incumbent whose distributes these transfers. The central incumbent increases grants to unaligned states prior to elections probably hoping to influence expenditures; an item both tiers of the government can claim responsibility for. The central incumbent also increases transfers to unaligned states for those projects which are jointly undertaken by both thereby solidifying the link between the good and the provider in the voters' eyes.

Indian voters seem to be fiscal conservatives, as they penalize increases in most items of expenditures and generally reward reductions in taxes. Such a finding is attributed to the perceived differences in in-kind versus in cash transfers and the notion that voters may find government expenditures wasteful or voters being unsatisfied with the quality of government services and goods. Evidence of yardstick effects in taxes is also presented. As we hypothesized, when there is a higher degree of clarity of responsibility, economic voting effects are stronger. We find that while responses to taxes while are the sole responsibility of the state is stronger than what we find in case of expenditures, a responsibility the states share with the center. While economic voting effects are almost non-existent in case of grants provided by the central incumbent as these are not directly 'visible' to the voters; they do seem to reward central government incumbents in sub-national and national elections for increases in grants for central plan and centrally sponsored schemes, which can be easily attributed to them. Economic voting effects with respect to growth and inflation are stronger when only the PM's party is considered. Peripheral coalition partners are considered to be less responsible for economic outcomes. Voters seem to be cognizant of the division of functional responsibility between the two levels of government and they evaluate their performance independently. We come to this conclusion since our results indicate that voters do not base their decisions of voting for or against the national incumbent on changes in sub-national taxes and respond to only those sub-national expenditures for which a more direct link can be established with the central incumbent, while voting in national elections. Also, we find results consistent with the notion that the central government is responsible for the overall health of the economy as voters seem to penalize the central

incumbent for increases in inflation and reward them for steady growth while being indifferent to such outcome variables while voting for the state level incumbent. We also find that when political clarity of responsibility is less clear (as in case of coalitions), economic voting effects are more muted.

CHAPTER VII

Conclusions and Policy Implications

This dissertation has established that economic voting and political cycles are entrenched in the Indian political landscape. This study has provided insight into economic voting behavior of Indian voters, a phenomenon many agree needs to be examined, and by doing so; it extends a well established developed country literature to developing countries and newer democracies. Indian voters seem to be fiscal conservatives; they dislike both increases in expenditures as well as taxes. Indian politicians on the other hand do seem to be working 'efficiently' in a political sense by manipulating fiscal policies in a manner that would help them internalize the ramifications of doing so. We also find that economic voting effects are stronger when there is a greater clarity of responsibility. A higher degree of clarity enhances the ability of the voter to effectively evaluate the incumbent. When many agents are in charge of any economic policy, the voter is unable to assign responsibility and hence may not effectively punish any detrimental actions by agents.

These results beg the question of whether such manipulations of polices and economic voting effects have led successive Indian governments to follow untenable economic policies. We have seen that intergovernmental grants have been distributed to states on the basis of co-partisanship, i.e., the central and the state incumbent are of the same party. In absence of any economic reasoning to validate such manipulations, we may expect a different trajectory of development for these states; different than if they did not have to deal with election-grant cycle. The states may also face significant

economic losses if higher grants at time of elections lead to the establishment of new programs which are abandoned due to a lack of funds in the future. That is, grants given for political reasons (not well thought-out development) may not be sustainable and thereby waste scarce resources. A particularly troubling phenomenon is the increasing use of centrally sponsored schemes and central government programs, such programs run by the central government generally preempt the state's decision making authority. If we assume that the lower level of governments are more aware of the specific needs of their constituents, such concentration of responsibilities in the hand of the top tier of government may lead to dissatisfaction among the voters. We have seen that governments have a tendency to increase expenditures prior to elections, if most of these increases translate to mere transfer payments such as debt forgiveness, increasing support prices of crops and food subsidies; in the long run they do not contribute towards the development of the economy. Also, increasing expenditures and reducing taxes may set the states on an unsustainable deficit path and led them to be overly dependent on the central government.

Indian voters are fiscal conservatives who reward lower taxes and expenditures. However such actions taken by the incumbents may be inequitable given that they may affect some sections of voters more that others. Given the structure of the Indian economy where there are parallel private and state run enterprises that provide goods and services to people, reducing taxes and expenditures would affect the already vulnerable section of the society which relies heavily on government services.

By showing that economic voting effects are present in India; we have established that they are aware of the government's responsibilities and their performance is

consistently evaluated. Vigilant voters are perhaps the best defense against political interferences which cause economic in efficiencies in the economy. Since we also found that these effects are stronger when there is grater clarity of responsibility; it behooves reformers to push for better delineations in responsibility and power of various levels of the government.

Indian states have embarked on a journey of decentralization to lower levels of government. It would be interesting to see, given the results we find regarding economic voting and arguments regarding clarity of responsibility, the size of such local governments and the effects of increasing agents who are now responsible for outcomes and policies. Since Indian states are at different stages on this journey state specific analysis may prove really fruitful.

While the presence of economic voting has been catalogued for many developed countries, there was a lack of similar studies in case of developing nations. Here we have thus established that economic voting is not just a phenomenon in western democracies, but voters are sophisticated in developing countries too.

Many have argued that voters in India base their votes on caste and regional associations, though this may also be the case; we find that economic factors play an important role. This finding is heartening as this would imply that voters; immaterial of their affiliations do evaluate a government's performance objectively.

While the most general recommendation in the face of evidence of political influence in the grants system is to clamor for independent grant distribution agencies; such agencies are by their very nature hard to construct. This dissertation on the other

hand argues that we need to take such interferences as a given; examine the nature of such influences and then formulate specific guidelines and practices to combat inefficiencies. This is of at most importance as we find such evidence in almost all countries but the nature of these differs significantly across them. So a general one-size-fits-all recommendation is somewhat futile.

This dissertation can also be considered as evidence for those newer models in tax setting, redistribution and provision of public goods which now include rational political agents. Given the realities of today's worlds we believe that these models should form the backbone of any reform project and not the traditional models which typically ignore politics.

Appendix

Table A.1: Summary Statistics

Summary Statistics					
		Mean	Std. Dev.	Min	Max
Revenue Expenditures					
Plan	Revenue Expenditure	1243.613	1890.394	0	15766.03
Non-Plan		6125.355	8973.328	0	55399.71
Total		7270.792	10568.68	0	67550.73
Plan	Developmental Expenditure	1191.315	1730.807	0	14664.58
Non-Plan		3097.062	4369.222	0	30579.75
Total		4243.504	5936.334	0	40950.06
Plan	Social Services Expenditures	649.9067	1110.654	0	10642.75
Non-Plan		1931.202	2744.941	0	19954.93
Total		2551.669	3704.652	0	27408.8
Plan	Education	165.9524	295.585	0	3141.23
Non-Plan		1231.832	1784.641	0	13159.93
Total		1378.904	1972.992	0	13885.49
Plan	Health	182.7033	258.9179	0	1827.91
Non-Plan		332.322	441.7537	0	2823.65
Total		507.7779	659.9157	0	4602.13
Plan	Water supply & Sanitation	70.62527	128.124	-2.25	1022.81
Non-Plan		65.2816	133.8046	-1.98	1060.16
Total		133.172	204.5032	-0.09	1700.84
Plan	Housing	21.96198	77.03107	0	1093.75
Non-Plan		15.5412	32.76178	0	275.04
Total		37.31706	94.34834	0	1111.09
Plan	Labor and Employment	10.05323	37.02618	-0.43	617.34
Non-Plan		24.63157	41.90631	-481.82	290.52
Total		34.38761	53.89085	-1.36	520.42
Plan	Welfare	161.7206	343.4201	0	3483.8
Non-Plan		156.3563	264.1897	0	2556.92
Total		316.871	576.2744	0	6040.71
Plan	Calamity Relief	4.600365	29.96806	-0.1	395.69
Non-Plan		93.92778	206.1507	-22.06	2503.89
Total		96.08648	207.9872	-22.06	2503.89
Plan	Cooperation	8.950502	28.3372	0	544.62
Non-Plan		32.27123	97.85822	0	1396.83
Total		40.93883	119.6186	0	1941.46
Plan	Agriculture and allied activities	144.5678	169.3423	0	1778.49
Non-Plan		284.4239	413.8243	0	3064.16
Total		425.6165	554.4636	0	4667.46
Plan	Agriculture	64.95154	88.0107	0	743.16
Non-Plan		91.61327	148.5495	0	1372.7
Total		155.3255	216.9545	0	1594.85
Plan	Sewage and Water conservation	17.23037	34.27552	0	297.44
Non-Plan		7.942055	10.74447	0	90.81
Total		24.98306	42.19802	0	368.7
Plan	Rural Development	200.0935	273.6452	0	1970.2
Non-Plan		110.9856	235.4859	0	1898.03
Total		310.1827	461.7443	0	3033.3

Plan	Industries and Minerals	42.07645	61.95079	0	486.5
Non-Plan		31.12546	57.29073	-0.98	1012.04
Total		72.6321	102.9423	0	1049.33
Plan	Industries	15.51787	38.99468	-0.09	428.31
Non-Plan		12.68024	44.00609	0	978.78
Total		28.06093	63.79729	0	988.72
Plan	Small Scale Industries	25.09753	36.42645	0	282.11
Non-Plan		17.30301	27.02858	-1.22	235.74
Total		42.14177	58.8634	0	517.86
Plan	Irrigation	42.29671	98.83315	-2.41	1758.35
Non-Plan		229.8559	411.4756	-3.45	3726.06
Total		268.5693	481.3448	-0.75	5484.41
Plan	Power	37.03184	162.5422	-0.01	1917.4
Non-Plan		267.0251	773.8078	-0.04	13401.72
Total		301.4572	810.6227	0	13552.94
Plan	Transport and Communication	21.98075	60.10722	-22.84	581.58
Non-Plan		171.595	234.3776	-0.69	2096.05
Total		191.2017	263.5478	0	2296.23
Plan	Roads and Bridges	19.79338	55.90935	-22.84	581.58
Non-Plan		131.2552	196.8828	-0.69	2093.82
Total		149.4674	222.9387	0	2233.88
Plan	Police	6.154368	45.41141	0	838.28
Non-Plan		356.0593	481.0516	0	3201.35
Total		355.7165	485.2282	0	3237.79
Plan	Public works	2.036621	12.99404	-94.04	237.7
Non-Plan		56.99781	83.70087	-24.48	623.34
Total		57.76973	83.62225	-24.36	627.15
Plan	Pension	5.966073	86.51181	-1.05	1685.28
Non-Plan		586.9295	982.045	0	6718.22
Total		581.3413	981.5869	0	6718.22
Plan	Economic Services	542.1655	686.2863	0	5133.03
Non-Plan		1167.552	1755.966	0	17354.46
Total		1695.84	2337.607	0	18878.24
Capital Expenditures					
	Total capital outlay	1027.686	1933.02	-238.79	18995.44
	Developmental Capital outlay	992.1879	1875.562	-271.28	18317.64
	Social services	175.916	350.3659	0	3200
	Education	19.18699	43.31604	0	652.48
	Health	97.40802	213.2613	0	2353.87
	Family Welfare	22.09866	80.96034	0	1481.67
	Water supply & Sanitation	72.49665	181.565	-0.6	2254.99
	Housing	15.24438	28.69446	-14.83	321.67
	Economic Services	816.2718	1633.161	-300.07	15925.43
	Cooperation	13.69933	76.81564	-19.61	1378.12
	Agriculture and allied activities	45.14192	150.0019	-542.3	1598.76
	Industries and Minerals	22.66035	49.71104	-30.31	861.71
	Small Scale Industries	3.275282	6.195655	-11.01	62.16
	Irrigation	369.2449	932.2582	0	11227.05
	Power	119.159	461.4064	-907.36	6665.53
	Transport and Communication	187.7295	406.9619	0	4854.38
	Roads and Bridges	172.855	395.0149	0	4792.97
Tax and Non-tax Revenues					
	Total tax revenues	4746.757	7694.528	0	57882.46
	Own tax revenues	3268.258	5672.261	0	46611.91
	Property tax	384.6714	828.7015	0	8695

	Commercial services and goods tax	2835.216	4784.457	0	36462.91
	Sales tax	1965.637	3461.633	0	26612
	State sales tax	1548.831	2806.709	0	21720.99
	Central sales tax	246.5734	433.7729	0	2547.66
	Motor vehicle tax	330.3496	629.6383	0	4668.59
	Excise	274.7915	519.7867	0	4634.44
	Electric duty	120.1961	289.8657	0	2318
	Other taxes	33.99759	136.3643	-1.02	2966.81
	Own non-tax revenues	881.109	1229.842	0	7518.23
	Social services revenue	71.51679	172.0462	0	2757.82
	Economic Services revenue	359.6054	514.091	0	4158.08
Grants and Loans					
	Grants from Center	1054.107	1352.103	0	11907.76
	State plan grants	464.982	609.4514	0	4337.02
	Calamity Relief grants	1.159366	12.59761	0	242.88
	Central plan grants	47.71772	101.893	0	1544.36
	Centrally sponsored schemes	249.5349	376.6181	0	4509.32
	Non-plan grants	285.9181	474.4595	0	3636.81
	Non-plan grants (State)	146.5229	320.6493	0	3256.39
	Non-plan grants (Calamity relief)	31.541	98.96529	0	1850.83
	Non-plan grants (Other)	107.8159	292.2416	0	3054.05
	Loans from center	628.395	806.1879	-80.28	5687.07
	State plan loans	395.6714	590.7514	-236.01	4086.9
	Calamity Relief loans	1.500685	13.6881	-62.69	208.03
	Central plan loans	3.27793	25.6882	-2.8	625.72
	Centrally sponsored schemes	7.384825	24.11971	0	440.67
	Non-plan loans	184.2052	395.6139	-462.37	3933.76
	Non-plan loans (Other)	19.35991	66.64165	-462.37	701.72
Controls					
	Literacy	59.64152	15.66824	20.8	94.539
	Urbanization	24.56591	10.90479	6.6	56.98
	Schedule class population	12.16988	8.428323	0	29.249
	Population	3.56E+07	3.70E+07	311800	1.88E+08
	State domestic product (SDP)	44800.23	71833.13	52.07	576553.9
	SDP - Agriculture	10383.6	14224.24	15.16	97149.91
	Primary sector	12153.32	16516.22	20.63	106048.6
	Share of agriculture in SDP	28.28709	9.590443	5.824582	52.9735
	Share of Primary sector in SDP	33.6683	10.01005	12.30847	55.29387
	Gross Domestic Product (GDP)	1296541	1191719	132520	4303654
	Inflation	7.842815	3.153292	3.767	13.87
Election data					
National elections	Votes received by incumbent in current election	29.82012	19.6039	0	67.58
	Votes received by incumbent in previous election	32.29958	20.68097	0	82.83
Sub-national election	Votes received by incumbent in current election	33.75993	13.01951	0	71.09
	Votes received by incumbent in previous election	37.40079	9.975627	0.21	70.41
	Alignment	0.486607	0.500193	0	1

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