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Abstract

Using Arellano-Bond dynamic panel-data estimation methods (GMM) for a balanced panel data from 1980-2010 for 14 Indian states, we try to find whether the election affects the individual components of transfers from the centre to the states, namely, grants from the centre, loan from the centre, and tax devolution. We also attempt to examine, if different transfer variables and other politico-economic characteristics of the country are able to create the possibility of retaining the political power for the incumbent. We find that the generally right wing and coalition governments are relatively less likely to transfer resources to the states. However, the state level ruling party, which is either the same party at the centre or an ally, tends to get higher transfers from the centre than a non-allied one. Similar to the pre-election political budget cycles found in the existing literature (Drazen and Eslava, 2010, Aidt, Veiga and Veiga, 2011, Klomp and Hahn, 2013, Chortareas, Logothetis and Papandreou, 2016), the political transfer cycle (PTC) is visible one year before the parliamentary election, whereas cycles are visible in the year of assembly elections in case of grants from the centre and loan from the centre. The tax devolution does not show any clear pattern of cycles, either in parliamentary or in assembly elections. The paper is also extended to a binary Logit specification to test for the incumbent's probability of winning the election. We find that grants and loans are likely to have varied impacts on an election win depending on the timing. Opportunistic grants in the year before the election are likely to help in winning whereas; a loan punishes the incumbent in parliamentary elections. Instead, opportunistic manipulations in grants and loan in the year of election help the incumbent retain political power in national elections whereas, only the opportunistic loan from the centre to the states in the year of election help to win the assembly elections. Further, it is found that a higher voters' turnout in the state is more likely to win the election, inflation reduces the possibility of the win, and a more experienced government has a higher probability of a win. Moreover, our results also show that the right wing government is more likely to win the election.

JEL Classification: C72, D72, E62, H72

Keywords: Opportunist Incumbent; Political Budget Cycle, Political Transfer Cycle, Indian Federation.

1. Background

In a federal structure, the central government has the incentive, as also the capability, to manipulate the transfers given to the states (provinces/ sub national jurisdictions) so as to enhance the possibility of winning the national election. This very idea is based on the concept of a political budget cycle (PBC), which alleges that the incumbent can opportunistically manipulate the fiscal policy to increase the possibility of winning the election (see Manjhi and Mehra (2016) for a theoretical exposition of this issue). In the similar vein, one can hypothesise the centre-state political transfer cycle (PTC) and pose the question -- can the national level incumbent government strategically transfer the resources to states? Also, whether by transferring the resources she/ he can increase the chances of winning the election and form the government? For instance, opportunistic behavior help the incumbent to win the election in Columbian municipality (Drazen and Eslava, 2010) and spending more opportunistically close to election helps to win the election in the Portuguese municipality (Aidt, Veiga and Veiga, 2011) and Chortareas, Logothetis and Papandreou (2016) also confirm that opportunistic expenditure by the incumbent is electorally rewarded.

Since the advent of the seminal paper by Nordhaus (1975), the literature on political business cycles has been significantly enriched. He considered an opportunistic pre-electoral manipulation of economic policies (that is, generation of inflation-unemployment cycles) by the incumbent to raise the chances of getting re-elected, whereas, Hibbs (1977) explained the post-electoral cycles due to varied macroeconomic goals of the policy makers, popularly known as partisan cycles. Hibbs finds that the nations having low unemployment and high inflation configuration are regulated and led by the left-oriented government, whereas those with high unemployment and low inflation are typically governed by the centre and right wing parties. These works (Nordhaus, 1975 and Hibbs, 1977) constitute the first generation models of political business cycle that utilize an exploitable inflation-unemployment trade-off and adaptive expectation hypothesis. In fact, most of the political business cycle literature analyzes the situation of an incumbent being either an opportunist or a partisan under two alternative situations of - adaptive and rational - expectation of citizen voters. Most of the literatures on the political business cycle focus on the opportunism and partisan behavior of the government. The political business cycle within a partisan framework refers to the case when different political parties have a clear

preference for specific macroeconomic objectives, and the fluctuations in the macro economic variables are a consequence of politicians having different policy objectives. In contrary, an opportunist incumbent/politician does not have any policy objective, except the desire to win the elections. It is also quite possible that an incumbent can act as an opportunist prior to election and behave in a partisan manner after winning the election (Frey and Schneider, 1978).

The second generation models led by Cukierman-Meltzer (1986), Rogoff and Sibert (1988), Rogoff (1990), Persson and Tabellini (1990) use the rational expectations concept and opportunist cycles whereas, Alesina (1987) analyzes partisan cycles. Cukierman-Meltzer (1986) state that, under asymmetry of information, the discretionary policy of the government increases the re-election prospects but with an imposed social cost. The social cost can be eliminated if both, the government and voters, have same set of information. From Nordhaus (1975), the brief forty years' history of political business cycle moved on to PBC propounded by Rogoff (1990) and further extended by Drazen (2000), where the latter two works cover the fiscal/ budget components in detail and not just the inflation-unemployment trade-off cycle based on the Phillips curve. The most recent strand of research incorporates the possibility of signaling and competency in a model of PBC, which can be attributed to Rogoff (1990), Rogoff and Sibert (1988), Persson and Tabellini (1990) and Aidt, Veiga and Veiga (2011) (henceforth AVV). Rogoff (1990) and Rogoff and Sibert (1988) show how the budget cycle can occur in the presence of rational voters, where voters are less informed about the complexities of the government budget. So, the government can signal its competency by focusing more on the expenditure on visible public good (consumption good) and assign lower priority to investment expenditure, and thus increase the chances of winning the election. The remaining papers obtain similar results and Persson and Tabellini (1990) also add the concept of competency in their analysis. AVV also analyze competency and find that the incumbent signals this by spending more on visible public goods a year before the election to gain voting support. AVV also derive that a lower victory margin in the last election makes the incumbent more opportunist in the current period. In addition, Shi and Svensson (2002a) postulate the PBC phenomenon as a moral hazard problem where the incumbent takes the advantage of asymmetry of information by signaling the competency before the election through fiscal policy measures of producing public goods without raising taxes. In a full information dynamic optimization framework, Manjhi and Mehra (2016) suggest that incumbent gets higher voting support in case of both -- opportunist

and partisan -- behavior, but reject the same when there is strong anti-incumbency in the former. Also, the cycles are more pronounced in the case of the opportunist than a partisan incumbent. Hence, opportunism is good for the incumbent to win the election but costly for the economy as a whole. There also exists empirical literature on the subject.

Shi and Svensson (2002b) use a panel of 123 countries for a period of 1975-1995 and find some evidence of PBC among developing countries whereas Alesina, Roubini and Cohen (1997) find the evidence of these cycles in aggregate fiscal variables but no evidence of cycles in any single budget component for a sample of 13 OECD countries over the period 1960-1993. In a sample of 60 democracies over the period of 1960-1980, Persson and Tabellini (2003) find a revenue cycle, but no political cycle of spending or transfers. They also find that, while all democratic systems display cycles before the elections, only presidential systems show evidence of fiscal adjustments after elections. Brender and Drazen (2005) find more pronounced PBC in new democracies than the older. Drazen and Eslava (2010), show that the incumbent can influence the voters by changing the composition of government spending, rather than the overall spending or revenues. In fact, rational voters can also support the opportunistic spending by the incumbent government. Efthyvoulou (2012) finds a stronger evidence of PBC among the European Union as compared to those who are not yet a part of the Union over the period 1997-2008.

Since, the focus of our analysis is on the centre-state transfer of funds, a discussion on some studies in this regard is in order. Kroth (2012) uses a panel dataset of 9 provinces of South Africa over the period 1995-2010, and derives two important results. First, provinces where the national ruling party faces higher electoral competition receive higher per capita transfers in the year before the election. Second, this increase is driven by a conditional grant, which is the non-formula-based component of the total inter-governmental transfer. Khemani (2004) shows that electoral budget cycle affect the composition of local budgets. That is, Indian state governments do not manipulate aggregate fiscal variables such as total spending or deficits in the run-up to an election, but instead manipulate the individual budget items and investment on public projects. The evidence of local budget cycle can also be found in Reid (1998) and Kneebone and McKenzie (2001) for the Canadian provinces. Drazen and Eslava (2010) bring a descriptive evidence of significant increase in investment prior to elections in local governments in Colombia, an increase which is only partially compensated by a decrease in government

consumption, whereas Brender and Drazen (2013) find a large change in the composition of expenditure in the established democracies during the election. Alesina and Paradisi (2014) find a strong PBC, particularly for South of Italy using a 'lower tax' regime close to the election whereas Baskaran, Brender, Blesse and Reingewertz (2016) find that a low share of revenue raised by Israeli local municipalities budget creates excessive dependence on central government transfers, and hence the PBC; however, tightening of the monitoring eliminates it. Sengupta (2011) demonstrates that federal welfare may actually increase with the politically motivated transfers, and the state ruled by the same government as the centre receives higher grants and hence more public good. Sengupta (2015) finds that if the central government grant is tied up with a public project of the province, provincial tax and central transfers tend to be strategic substitutes: higher central transfer lowers the marginal utility of public project to the province and the province responds by cutting down taxes. Chortareas, Logothetis and Papandreou (2016) (CLP henceforth) find an opportunistic PBC pattern in the budget balance, in total and investment expenditure and in borrowing revenues irrespective of whether the mayor runs for the reelection or whether the incumbents are politically aligned with the central government or not. Also, the opportunistically increased expenditure by the incumbent is electorally rewarded.

The focus of the current analysis is on centre-state political transfer cycles, a concept similar to that of PBC. The derived results in Indian federal structure state that, transfer cycles are pronounced more in case of grants from the centre and loan from the centre. Also, opportunistic transfers of this kind might help in winning the elections, both at the union and state level. Apart from these transfers the factors which help winning elections are-gross state domestic product, voters' turnout, experience of the party, right wing parties, same government ruling the union and the states. On the other hand high inflation, coalition government can reduce the winning chances for the union as well as the state government. The remaining sections of this paper are as follows. Section 2 covers a brief description of the Indian federal structure. The data and methods as well as the tracing of PTC are presented in Section 3. Section 4 discusses the key results. Finally, Section 5 concludes the paper.

2. Structure of the Fiscal Federalism and Possible Politics

With the onset of economic liberalization in a number of countries in the post 1980s many of them, namely, China, Brazil, Argentina and Russia have moved towards a federal structure of centripetal kind, whereas some big federations, such as Canada, United States and Australia have been structured more as the centrifugal type. India has moved from a centralized quasi-federation to a co-operative and competitive structure of the centre-state power relationship and it seems to have commonality with the former group. For India, the first three decades after independence, till the late 1980s, can be termed as the phase of centralized federation. The subsequent post reform era can be broadly termed as that of cooperative-cum-competitive federation. This phenomenon is also supported by the idea of a coalitional structure of the government, which came into existence effectively in the early 1990s. That is, the state government that happened to be an ally of the central government would mostly co-operate whereas the non-allied ones would compete.

The structure of the Indian federalism comprises three tiers – national (centre), sub-national (state) and sub-sub-national (panchayat/municipality/district councils). On several occasions, states have sought for higher autonomy, but the centre has always maintained its supremacy in decisions making. In fact, in some cases, centre has even amended the constitution to move items from the state list to the concurrent list, and thus increase its own share of spending (George and Gulati, 1985a). There is a clearly demarcated line of revenue generation under national and sub-national level.

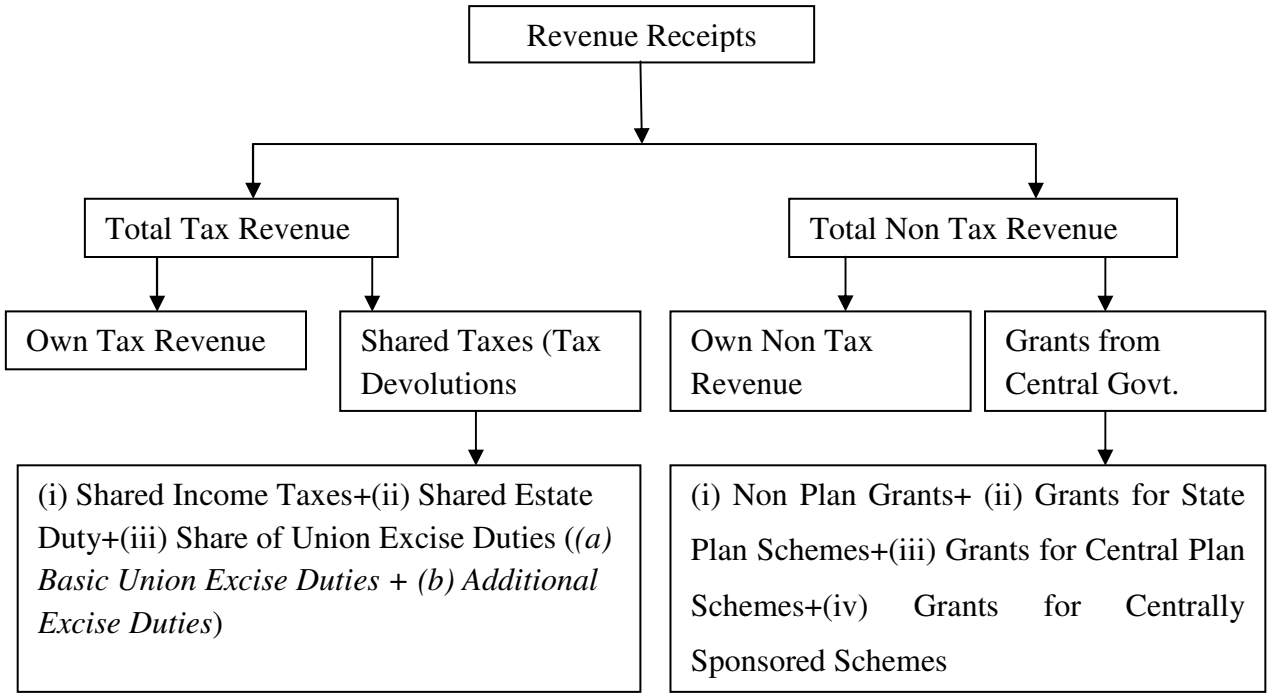
Figure 1 shows the basic structure of the revenue receipt by the states (in other words transfers from the union government). The total revenue receipts consist of total tax revenue and total non tax revenue. The total tax revenue is further segregated into states own tax revenue and shared taxes (tax devolution). The tax devolution consists of – (i) shared income taxes, (ii) shared estate duty, and (iii) share of union excise duties. Similarly, total non tax revenue consists of states own non tax revenue and grants from the union government. The grants from the centre have four components, namely – (i) non plan grants, (ii) grants for the state plan schemes, (iii) grants for central plan schemes, and (iv) grants for centrally sponsored schemes. So, far 14 FC reports have been tabled, and almost all have been accepted by the central government. Effectively, there are three ways centre can transfer the resources from centre, namely-

(i) Statutory Transfers=Shared Taxes + Non Plan Grants

(ii) Grants for State Plan Schemes

(iii) Discretionary Transfers=Grants for Central Plan Schemes + Grants for Centrally Sponsored Schemes.

Figure 1: Flow Chart of the States Revenue Receipts



Consequently, there are also three institutions, which control the transfers from the centre to the states. Firstly, Finance Commission (FC) decides on the level of the tax devolution and non plan grants and, since FC is an independent constitutional body, the direct political influence is the least possible scenario here.[4] Secondly, Planning Commission (now NITI (National Institution for Transforming India) Aayog) recommends grants and loans for implementing development schemes. Finally, grants provided by the different ministries to the specific projects fully funded by the centre (central plan schemes) or the cost of the development schemes are shared by states (centrally sponsored schemes). The grants for state plan schemes require centre's approval of the

[4] The FC is an independent body, appointed by the president of India every five years, yet there is the scope for the central government under clause 3(c) of article 280 which reads, "any other matter referred to the commission by the president in the interest of sound finance", to put certain restrictions on Finance Commission.[4]

projects proposed by states; hence, there is a possibility of some discretion (Rao and Singh, 2001). In general, the possibility of political influence cannot be ruled out in case of grants from the centre and loan from the centre but this may not directly manipulate in tax devolution unless clause 3(c) of article 280 is being used to direct the FC by the president of India for the sound finance of the state. Moreover, even if political manipulation is the least possible scenario with *Td*, comparative robustness check against *Gfc* and *Lfc* is well taken in the paper.

One of the bases for the transfer from centre to states is the revenue expenditure imbalance at the state level. That is, states might go on spending without any constraint (or without thinking much about the fiscal deficit), because that would in any case be compensated by the union through transfers. In conclusion, this mechanism can create a moral hazard problem and lack of discipline among the states. It is in this respect that FCs has been criticized for the use of grants to fill the revenue-expenditure gaps claimed by the states (Rao and Singh, 2007). The finance commission transfers (grants from the center plus the tax devolution) are mostly under the purview of FC. However, there is already a greater role to be played by the Planning Commission and central government for the transfers such as- grants from the centre and loan from the centre. Overall; it seems that central government tries to maintain political control over the transfers in some way. Also, there are evidences of the attempts of the influence on the antecedent and consequences of the whole transfer process. Rao and Singh (2007) and Rudolph and Rudolph (2001) state that even while the FC uses the different formulaic based decision on transfers or grants, it has been observed that the states which are represented as the member of the commission do relatively better in terms of the received awards.

In fact, there exists a wide range of literature covering the political aspect of the transfers in India, namely Rao and Singh (1998), Biswas and Marjit (2000), Dasgupta, Dhillon and Dutta (2003) (henceforth DDD), (Arulampalam, Dasgupta, Dillon and Dutta, 2009) (henceforth ADDD) and Rao and Singh (2007). Rao and Singh (1998) demonstrate that implicit transfers in India disproportionately benefit the richer states whereas Biswas and Marjit (2000) show that states' representation in the cabinet of the central government affects the state wise distribution of Letters of Intent and Industrial Licenses. The paper by DDD and ADDD construct a redistributive model of politics where the central government is an opportunist and uses its discretion to disproportionately grant the aligned states, whereas Rao and Singh (2007) analyze

the institutional process through which reform takes place and the influence of the politics on institutions such as Finance Commission. The structure of federalism might be different across countries of the world. There are studies that cover the political influence, for instance, Inman and Rubinfeld (1997), Dixit and Londregan (1995, 1996, 1998a, 1998b) and Lindbeck and Weibull (1987). Inman and Rubinfeld show how representation and assignment affect the political values of participation, protection of individual rights, development of civic virtues, allocation of goods and services and, hence, economic efficiency. Dixit and Londregan (1995, 1996, 1998a, 1998b) and Lindbeck and Weibull (1987) construct a theoretical model of tactical redistribution which describes how a political party will design its policy platform in order to target the electoral goals. The former study aims to maximize the vote share and the latter targets on winning the election.

One of the prime motivations underlying this research is the observed announcement of transfer packages and actual transfers operated by the centre to the states prior to and after the elections in the Indian federal structure. The transfer variables we consider here are grants from the centre (*Gfc*), loan from the centre (*Lfc*) and tax devolution (*Td*).[5] Figure 2 shows the transfers defined in terms of the level of opportunism for different years (namely, all years, year of elections, year before elections, year and year before election, year after election, non-election years) in the electoral period. In general, deviations in the electoral period with respect to *Gfc*, *Lfc* and *Td* hover around zero for all years and states. Notice that, *Gfc* in most cases deviates negatively in the election years, whereas *Td* deviates negatively in the year of and year before the election in almost all cases. However, *Gfc* deviates positively in the year before the election, more so if the state ruling party is same as the union government or the allied party. The deviations of *Gfc* and *Td* are all positive after the election. In most cases *Lfc* is positively deviated in the year of election or a year before. It appears that the opportunistic manipulations are higher in the case of *Lfc*. The opportunistic deviations have also been shown in the specific context where the state-level ruling party is an ally of the union government as well as when it is not. Some interesting points to note are – in aggregate, the allied state ruling party gets higher *Gfc* and *Lfc* in general and year before the election in particular. In fact, a state which is both aligned and swing in the

[5] The detail definition and the mechanism of transfers are provided in Appendix A

last state election is estimated to receive 16% higher transfers than a state which is non-allied and non-swing (ADDD).

In addition, so far, a bulk of research has focused on the advanced economies and not on developing or emerging countries, particularly at the sub-national level, which is an obvious lacuna. More specifically, the analysis of PBC has been largely attempted for advanced countries, and more so with focus on various fiscal heads of financing the expenditure and collecting revenue through taxes. However, hardly any work pertains to the centre-state (federal) transfers, especially for developing economies like India. In this respect, this study fills an important gap in the literature.

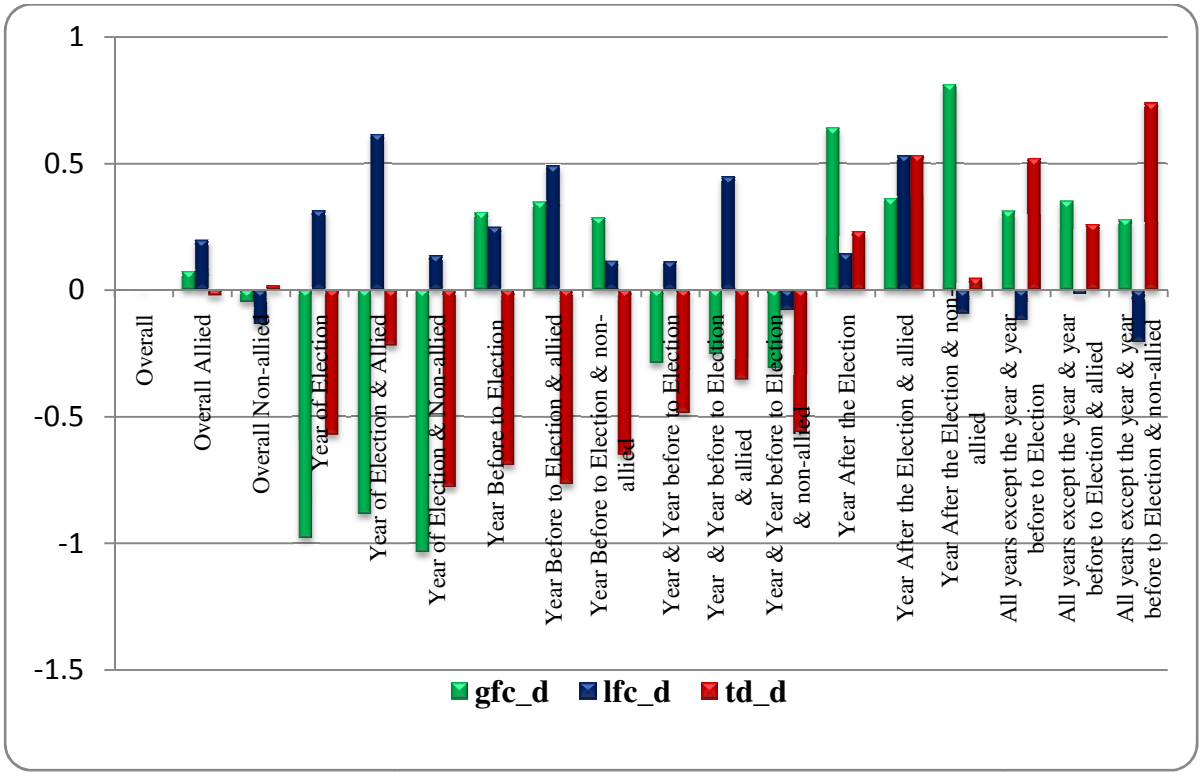
The study analyzes the union government's politically motivated transfer behaviour toward its provinces with the aim to win the election. It is especially interesting to analyze the effect of transfers on election outcomes in a country where caste and religion based politics and political alignment are frequently used for political gains (Yadav, 1999). In some cases, if riots occur in the year preceding the assembly elections, the vote share of right wing party in India goes up by 5 to 7 percent (Iyer and Shrivastava, 2015). However, in the current research, factors such as religion, caste and riot are not modeled. Instead, the focus is on transfer variables, with others, namely, gross state domestic product, inflation, parties' year of experience as an incumbent etc. used as controls. Figure 2 provides an indication of the presence of opportunistic behavior of the ruling party, particularly for the allied parties at the state level. The economic opportunism has been defined as $Opportunistic\ Deviation = [B_{ts} - Mean(B_s)]$, where B_{ts} is the reference year value for a particular year '*t*' in the electoral period '*s*' and '$Mean(B_s)$' is the mean of all the values in that electoral period '*s*'. The calculation of the mean of 'B_s' excludes the reference year t^{th} value. Also, if the electoral period is incomplete then, we consider next electoral period including the incomplete period as well. The $Opportunistic\ Manipulation = \left[B_{yts} - Mean(B_s)\right]$, where 's' is an electoral period and 'yt' is the year before election or year of the election value.[6] For our purpose, year before election fiscal changes have been considered as the opportunistic manipulation behavior of the incumbent. It can be seen that the opportunistic transfers are more pronounced for the same ruling party in both the union and state governments

[6] Another way to calculate the opportunistic deviation and manipulation is deviation of reference year values of the fiscal variables from the trend (HP filter values) in the electoral period, which has been exercised by Aidt, Veiga and Veiga (2011).

or allied parties than for the non-allied ones in the year of election and one year before the election (DDD, ADDD).

In general, fiscal variables in a federal context are expected to follow an expansionary trend before the election. In fact, Figure 2 shows the similar structure of cycles in case of *Gfc* and *Lfc;* however, it is not so with *Td*. In fact, *Td* mostly displays a negative deviation before and during the election than otherwise. The analysis is also extended to look at whether the expansion of transfers in the year prior to the election is higher or lower if the ruling party in the state is an ally of the union government?

Figure 2: Opportunistic transfers in the electoral period for parliamentary election



Source: Ministry of Finance and Handbook of Statistics on Indian Economy

Specifically, this paper attempts to analyze whether, in the federal structure, transfers under various heads to the states (for example-*Gfc*, *Lfc* and *Td*) have been operated opportunistically by the union government? That is, whether there is expansion in the transfer from the centre to the states prior to the election? Also, whether the opportunistically created transfer cycles impacts the electoral outcome at the union and the states levels? To trace these questions we proceed to

look at whether there are effects of election years on these transfers? Followed by whether these opportunistic behaviors of the incumbent confirm their re-election?

3. Tracing the Political Transfer Cycle

3.1 Data and Methods

We utilize a balanced panel of 14 Indian states[7], excluding the newly created states such as Jharkhand, Chhattisgarh, Uttarakhand and Telangana as well as some additional states where regular elections did not take place, namely, Goa and Jammu and Kashmir. Also, all North-East states have been dropped from the sample as these are special category states. By virtue of being 'special category' states they receive very generous financial treatment from the union government (Rao and Singh, 2001; ADDD) and would not reveal the correct picture in terms of electoral politics. The testing of the PTC model, utilizes the Arellano-Bond dynamic panel-data estimation method where the sample data ranges from 1980 to 2010. This is a variant of the Generalized Method of Moments (GMM) for which the justification is discussed later in the section. The election data have been taken from the *Election Commission of India*[8] and from *myneta.info*[9]. The fiscal variables, such as Gross State Domestic Product (GSDP) and Net State Domestic Product (NSDP) are extracted from Central Statistical Organization (CSO) database for India. Inflation has been calculated as the percentage change of NSDP deflator for the states and RBI website has been used to get the WPI data for the national level inflation. The predicted population for non-census years has been collected from CSO, and the geographical area of the states has been taken from the Census, 1991. Grants from the Center, Loan from the Center and Tax Devolution have been collected from Reserve Bank of India (Handbook of Statistics on State Government Finances)[10] and the *Ministry of Finance, Government of India*[11].

[7] States included in the empirical estimation are - Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu , Uttar Pradesh and West Bengal.
[8] http://eci.nic.in/eci_main1/ElectionStatistics.aspx
[9] http://myneta.info/
[10] State Finances: A Study of Budgets, https://www.rbi.org.in/Scripts/AnnualPublications.aspx?head=State%20Finances%20:%20A%20Study%20of%20Budgets
[11] http://finmin.nic.in/reports/ipfstat.asp

The question to be posed here is whether and how centre-state fiscal transfers affect the national level election outcomes approximated by using state wise results of the parliamentary elections? That is, will the national level election (parliamentary election) be influenced by transfers operated from the centre to the states on account of wooing the voters, well year prior to the election? We attempt to find answer to the same question for the assembly elections as well. The focus of the paper is on the transfers of resources from centre to the states through various heads, such as - *Gfc*, *Lfc* and *Td*. More generally, political cycles are possible on *Gfc* and *Lfc* as union government has some discretion on these components and not on *Td*. The key question for which an answer is sought is whether these fiscal variables are electorally motivated? The same exercise has been repeated even for the state level assembly elections.

3.2 *Estimation Method*

Based on the method by Klomp and Haan (2013), we first analyse whether fiscal decisions by the incumbent are affected by the election year or the year before the election. That is, whether there exists a PTC? If yes, what is the time pattern that it follows? Following Klomp and Haan (2013), the structure of the equation is postulated to be:

$$TR_{it} = \sum_{p=1}^{n} \pi_p TR_{i,t-p} + \beta Elect_{it} + \delta X_{it} + \gamma Z_{it} + \sigma_i + \vartheta_{it} \qquad (1)$$

where, TR_{it} is the transfer variable for i^{th} state at time *t*, where the fiscal variable TR could be any of the following variables – *Gfc, Lfc,* and *Td*. The variables $TR_{i(t-p)}$, where *p*=1, 2 are the lagged dependent variables, which are expected to affect the dependent variable auto-regressively; so we expect $\pi_1 > 0$, $\pi_2 > 0$. The '*Elect*' is a vector of electoral variables which consists of two dummy variables such as year before the election (Yr_bf_elect) and year of the election (Yr_elect). The variable defined in binary form as, $Yr\_bf\_elect = 1$ if it's a year before the election and 0 otherwise. Similarly, $Yr\_elect = 1$, if it is a year of the election and 0 otherwise. The corresponding expected sign for both – the coefficients of Yr_bf_elect and Yr_elect is positive. This would imply that the year prior to election is expected to have higher transfers to the states so that state level (both the parliamentary and assembly) election results could be influenced opportunistically. A similar postulation is done for Yr_elect.

The variable X_{it} is the vector of two variables: density of population (*Density*) and number of years party was in power (*Nypp*), that is, years of experience of administering the state. The corresponding expected signs are positive for both, because more densely populated states require more transfers on account for a higher need for public investment (ADDD) and more experienced the party is in power higher is the corresponding transfers. Next, Z_{it} is the vector of binary variables that represent the following group of variables -- political ideology (for parliament elections, *Pidum*=1 if the ruling party is of right wing ideology and 0 otherwise; in case of assembly elections, political ideology has been ranked from '1' to '5' where '1' represents the extreme right and '5' the extreme left party ideology) [12], *Allied*=1, if party at the state and union are same or state ruling party is allied and 0 otherwise, coalition binary *Cldum*=1, if the union is a coalition government, and 0 otherwise and if coalition government at the union level and state ruling party being an ally then it is expressed as *Clal_dum*=1, and 0 otherwise. Veiga and Veiga (2007) and AVV find that right wing Portuguese mayors are less opportunist than the left wing parties. Similar results have been found by Mourao and Veiga (2010) for a panel of 68 countries for 40 years. While Brug, Eijk and Franklin (2007) argued that, being more opportunist a left wing government aims more at reducing unemployment, while a right wing government, being less opportunist, worries more about inflation. In our case, we do not start with a prior for *Pidum*. If the center and states are ruled by the same party or ruled by the allied (*Allied*), states can garner more resources from the centre and, hence, the expected sign for the coefficient of *Allied* is positive (ADDD). For the coalition governments at the centre, Table 1 shows that out of 434 data points, only 23% states report that the state ruling parties are the coalition partner of the union, and these allied states are on average getting more transfers than the non-allied ones. Hence, *Cldum* is expected to have the negative sign but *Clal_dum* (coalition partner) is expected to have positive sign. The state level fixed effect (FE)[13] has been denoted as 'σ_i' and ϑ_{it} is the random variable such that $E(\vartheta_{it}) = 0$.

[12] In this analysis, Bhartiya Janata Party (BJP) or national democratic alliance (NDA) has been considered as the right wing party as this party is pro economic liberalism which is noted as the binary '1' and '0'to rest of the parties. Since at the union level the Indian National Congress (INC) has ruled for most of the time and also pro economic liberalism but also follow many other ideologies such as – populism, social democracy etc. In total, INC can be termed as the centrist party. In case of assembly election political ideology has been ranked from 1 (right) to 5 (left).

[13] Since, we are interested to trace the political transfer cycle hence, the state cross sectional unit over time analysis is very important here. Consequently, we have used the state fixed effect and not the time fixed effect.

Eq. (1) is the dynamic panel data specification model, where lagged dependent variable has been included along with the state level FE. In this case, OLS with FE estimates are biased and inconsistent unless the time dimension *T* is large (see Nickell, 1981; Kiviet, 1995). The degree of FE biasedness is measured by $\frac{1}{T}$, where *T* is the panel time length. As *T* gets larger, FE becomes consistent; however *T* does not seem to be very large in our case, so the presence of Nickell bias cannot be denied. In our analysis, the number of length of years is 31 for 14 cross sectional states and the use of the FE estimates in the context of a dynamic panel model may result in biased outcomes. Thus, to eliminate this problem, we impose Blundell and Bond (1998) two step GMM estimator for dynamic panel data (also see, Veiga and Veiga, 2007a, Efthyvoulou, 2012 and CLP). This model built on Arellano and Bond (1991) dynamic panel data estimation with two step system GMM estimation utilizing lag differences of the dependent variables as instruments in the right hand side, in addition to the lag levels of the dependent variables (see Arellano and Bover, 1995, Baltagi, 2008). Also, since the standard errors of the two step GMM estimates tend to be negatively biased, we eliminate the bias by using Windmeijer (2005) finite sample correction and two-step robust GMM (Windmeijer, 2005; Roodman, 2009a). To avoid errors in the results caused by instrument proliferation, we collapse the instrument set as suggested by Roodman (2009b) to reduce the number of moment conditions. Finally, we use the Arellano and Bond (1991) tests for first- and second-order serial correlation of the differenced residuals and the Hansen test for over-identifying restrictions.[14]

In accordance with Eq. (1), two equations that have been estimated to capture the transfer cycles are as follows-

$$TR_{it} = \sum_{p=1}^{n} \pi_p TR_{i,t-p} + \delta X_{it} + \gamma Z_{it} + \sigma_i + \vartheta_{it} \quad (2)$$

and

$$TR_{it} = \sum_{p=1}^{n} \pi_p TR_{i,t-p} + \beta Elect_{it} + \delta X_{it} + \gamma Z_{it} + \sigma_i + \vartheta_{it} \quad (3)$$

Notably, PTC has been captured by the difference between the estimated error term of eq. (1) without the election dummy variables (pertaining to both – year before and year of the election)

[14] We do not use the Sargan test for the Null of over-identifying restrictions because Arellano and Bond (1991) show that this has the tendency of over rejecting the null of over identifying restrictions are valid in the presence of heteroskedasticity.

and the error term of eq. (2) when the election variables are included in it. These equations have been estimated for both the parliament election for the union as well as the assembly elections. The pattern of state-wise transfer cycles are shown in the diagrams included in Appendix A. There is evidence of transfer cycles in *Gfc* and *Lfc* in the year before the election.

3.3 *Baseline Result*

Table 1 presents the basic descriptive statistics for all the transfer variables defined in level as well as in opportunistic deviation/manipulation form.[15] The section also presents the basic statistics for the additional variables, namely, Inflation (*Infs*), population density (*Density*), political ideology (*Pidum*), state ruling party is same as union or the allied of it (*Allied*), coalition binary (*Cldum*) and coalition in the union and state ruling party being an ally (*Clal_dum*). In the post-1980 period, India has mostly had a coalition government, frequently ruled by a left-of-the-centre government. Statistically, in general two variables -- *Gfc* and *Td*—display a positive deviation from the average, but this is not the case for *Lfc*. However, *Gfc* and *Lfc* have positive opportunistic manipulation year before to the parliamentary election, whereas only former is positive in the assembly elections. Observably, the right wing government tends to provide less transfer but more opportunistic transfers in *Lfc* and not in *Gfc* and *Td*. If the state ruling government is same as the union or is an ally of it, *Gfc* and *Lfc* are higher than the otherwise. Also, coalition governments in the union generally transfer less. India has experienced around 7% inflation on an average during the analysis period (1980-2010), whereas in some cases, it goes up to as high as 53% at the state level and as low as a level of deflation of -3.31%. An interesting point to note is that during the right wing government regime, the level of inflation is generally low -- hovering around 4.35%. Period of low inflation for the right wing regime is also confirmed by Hibbs (1977).

Table 1: Descriptive Statistics

Variables/ Statistics	Parliamentary Elections			Assembly Elections		
	Mean	Min	Max	Mean	Min	Max
Gfc	9.795	2.818	27.372	9.795	2.818	27.372
Lfc	10.077	0.009	39.085	10.077	0.009	39.085

[15] This is the opportunistic deviation as defined earlier.

Td	16.138	3.707	53.102	16.138	3.707	53.102
Gfc_d	0.050	-8.716	8.502	0.084	-7.244	9.946
Lfc_d	-0.126	-22.570	20.017	-0.037	-14.508	20.299
Td_d	0.086	-12.102	11.164	0.012	-13.545	9.362
Gfc_d*	0.073	-7.116	8.502	0.135	-7.244	5.734
Lfc_d*	0.939	-15.526	20.017	-0.253	-14.508	15.274
Td_d*	-0.228	-7.776	8.595	-0.188	-13.545	6.081
Gsdp	104718.1	3386.41	1100000	104718.1	3386.41	1100000
Infs	7.413	-3.32	53.06	7.413	-3.32	53.06
Inf if Pidum=1	4.350	-2.717	11.393	5.967	-2.717	18.861
Density	423.978	100.11	1023.64	423.978	100.11	1023.64
Allied	0.410	0.000	1.000	0.410	0.000	1.000
Cldum	0.709	0.000	1.000	0.405	0.000	1.000
Clal_dum	0.230	0.000	1.000	-	-	-
Pidum	0.193	0.000	1.000	0.405	0.000	1.000
Gfc if Pidum=1	7.321	2.818	16.957	9.124	2.817	27.371
Lfc if Pidum=1	7.941	1.758	31.499	11.142	0.063	39.084
Td if Pidum=1	14.335	3.708	41.482	17.083	3.707	35.543
Gfc_d* if Pidum=1	-1.233	-7.116	3.047	-0.140	-7.244	8.431
Lfc_d* if Pidum=1	2.439	-2.899	14.955	-0.343	-14.507	20.299
Td_d* if Pidum=1	-1.193	-6.536	3.506	0.020	-10.984	9.362
Gfc if Allied=1	9.874	2.951	27.372	9.874	2.951	27.372
Lfc if Allied=1	10.748	0.112	29.349	10.748	0.112	29.349
Td if Allied=1	14.494	3.707	29.476	14.494	3.707	29.476
Gfc if Cldum=1	9.574	2.818	23.210	9.770	2.817	27.371
Lfc if Cldum=1	8.038	0.009	35.029	8.562	0.008	39.084
Td if Cldum=1	16.317	3.708	53.102	16.524	3.707	53.102

Note – the variables –Gfc_d, Lfc_d and Td_d are in opportunistic deviation and Gfc_d*, Lfc_d* and Td_d* are in the form of opportunistic manipulations.

The results of the estimation for parliamentary election are shown in Table 2 and that of the assembly election in Table 3. Since transfer variables are expected to follow an auto-regressive process, the inclusion of the lagged dependent variable was inevitable along with additional explanatory binary variables. As mentioned earlier, we have used the Arellano-Bond dynamic panel-data estimation method namely, a two step system GMM. In our estimation, the dependent variable refers to different variants (components) of the fiscal transfers to the states by central government, namely, *Gfc, Lfc* and *Td*, as also discussed earlier. Notice that the first lag of the

dependent variable is highly significant in all the cases, although, the second lag of it is not statistically significant, except in case of the result in column 2 of Table 2. However, we still include it in the estimation as it is considered to be an important variable. Intuitively, this means that higher the last period transfer, larger is the successive year respective transfers. Next, there is the vector $Elect_{it}$ that consists of dummies for the years prior to and the year of the election. An opportunist incumbent is expected to expand the transfer before the election and induce a downturn in it in the post election period. The opportunistic manipulations are possible more in the case of *Gfc* and *Lfc* as there is greater scope for the role of the Planning Commission (now NITI Aayog) and union ministries. This is evident from the fact that the year before the election in case of *Gfc* and *Lfc* shows significant results (also supported by Klomp and Hahn, 2013, CLP and AVV), whereas *Td* is decided by the FC, which is an independent body, and hence political opportunism is less pronounced in this case. In fact, *Td* is lower in the year before the elections. However, all three components show less transfers in the year of election. Interestingly, since loan entails a liability to be repaid back to the centre, so the central government seems to woo the state government as well as the voters prior to the election, providing more loans to the state and, thus, also transferring the burden but not really being noticed by the voters. However, both *Gfc* and *Lfc* show evidence of opportunistic transfers before the election hence, clear political transfer PTC could be traced.

The results are similar for assembly elections as well (Table 3). The first lagged of the dependent variable is positive and significant, whereas the second lag is not. Individually, opportunistic grants (*Gfc*) can be traced, whereas coefficients are not significant in case of both *Lfc* and *Td*.

3.4 Political Ideology, Experience and Form of the Government

This section analyzes the behavior of the three transfers – *Gfc*, *Lfc* and *Td* -- with respect to the following variables – population density (*Density*), political ideology (*Pidum*) and its interactions with the year before the election and also the year of election, state is ruled by same political party or allied (*Allied*) and coalition government at the centre (*Cldum*). The vector X_{it} consists of population density (*Density*) and number of year party has been in power (*Nypp*). As expected, the coefficient of *Density* is positive in case of *Gfc* and *Td* but negative for *Lfc*. In fact, population density is one of the criteria for higher grants and devolution to the higher density states (60% weight is given to the population of the states according to Gadgil-Mukherjee

Formula, 1991)[16]. However, high density states are getting less loans transfer may be because the formula based grants and devolution are sufficient enough to manage the fiscal policy. Further, a more experienced (higher *Nypp*) incumbent government is expected to provide higher transfers from the centre and this is found to be true in case of all *Gfc*, *Lfc* and *Td*. Also, higher is the experience of the party in ruling the country; greater is the decentralization (thus more *Td*). However, *Nypp* for *Gfc* and *Td* specifications are not significant in some of our cases. It also appears that the more experienced government interested in giving loan transfers than otherwise as it gets repaid back. Results are similar in case of assembly elections as well.

The remaining vector Z_{it}, consists of political ideology (*Pidum*) and its interaction with the year before the election and also the year of election, union and state being ruled by the same party or state being ruled by the allied party (*Allied*), coalition government (*Cldum*) at the union and state ruling party being an ally (*Clal_dum*). The *Clal_dum* has been dropped from the regression results because of the multi-collinearity problem. The right wing (*Pidum*) government exhibits the tendency to transfer less to the states in terms of *Gfc* and *Td* whereas more in terms of *Lfc*. The right wing government (*Pidum*) is significant only in case of *Lfc*. The right wing government seems to have a tendency to encourage the states to push for self-sufficiency in revenue generation; this is corroborated by the fact that the abolition of loan from centre to states was one of the steps taken by the right wing government in India at the time of the Twelfth Finance Commission submitted its report in 2004, which was well accepted by the union government. The right wing government provide less *Gfc* in the year before the election but more in the year of election. However, opposite happens in the case of *Lfc* and *Td*. In case of assembly election

[16] http://www.pbplanning.gov.in/pdf/gadgil.pdf. This formula for allocation of central assistance is called Gadgil-Mukherjee Formula-1991. The main features are – (I) From the total Central assistance, set apart funds required for externally aided schemes (II) From the balance, provide reasonable amounts for Special Area Programmes viz. (i) Hill Areas;(ii) Tribal Areas;(iii) Border Areas; (iv)N.E.C. (v) Other Programmes (III) From the balance, give 30% to the Special Category States. (IV) Distribute the balance among the non-Special Category States as per the following criteria and weights – (a) Population (1971) - 60% (b) Per Capita Income -25% (deviation' method-covering states with per capita SDP below the national average (20%) and Distance method-covering all states (5%)) (c) Performance (Tax Effort, Fiscal Management and Progress in respect of National objective) – 7.5% (d) Special Problems – 7.5%.

years, *Gfc* is positive in the year before the election and in the year of election, but less *Lfc* has been traced. Also, the transfers in terms of *Lfc* and *Td* are not found to be significant.

Table 2: Dependent variables are Grants from the Centre, Loan from the Centre and Tax Devolution (Parliamentary Elections)

	Grants from the Centre (*Gfc*)			Loan from the Centre (*Lfc*)			Tax Devolution (*Td*)		
Variables	1	2	3	4	5	6	7	8	9
Dep.var(-1)	**0.748 [0.171]*** **	**0.490 [0.157]*** **	**0.822 [0.393]***	**0.985 [0.134]*** **	**1.033 [0.117]*** **	**1.042 [0.104]*** **	**0.396 [0.165]** **	**0.460 [0.157]** **	**0.401 [0.144]** **
Dep.var(-2)	0.130 [0.113]	**0.254 [0.109]** **	0.077 [0.216]	0.024 [0.101]	-0.048 [0.097]	-0.031 [0.081]	0.093 [0.170]	0.040 [0.159]	0.064 [0.153]
Yr_bf_elect	0.364 [0.183]*	**0.805 [0.139]*** **	-	**1.005 [0.444]** **	0.288 [0.694]	-	-0.805 [0.374]**	-0.559 [0.376]	-
Yr_elect	-0.812 [0.302]**	-	-0.955 [0.353]***	-0.416 [0.774]	-	-0.390 [0.474]	-0.868 [0.401]**	-	-0.259 [0.222]
Density	**0.003 [0.001]** **	**0.002 [0.001]** **	**0.002 [0.002]*** **	-0.003 [0.002]*	-0.002 [0.001]	-0.001 [0.001]	**0.015 [0.009]***	0.013 [0.008]	**0.015 [0.007]** **
Nypp	-0.031 [0.034]	**0.027 [0.011]** **	-0.001 [0.015]	**0.079 [0.027]** **	**0.044 [0.006]*** **	**0.024 [0.008]*** **	**0.030 [0.029]**	**0.055 [0.014]*** **	**0.036 [0.024]**
Pidum	-1.931 [1.411]	-	-	**2.012 [1.174]***	-	-	-1.134 [1.384]	-	-
Pidum*Yr_bf_elect	-	-1.520 [0.398]***	-	-	**3.017 [0.821]*** **	-	-	0.146 [1.107]	-
Pidum*Yr_elect	-	-	0.383 [1.487]	-	-	-2.173 [0.638]***	-	-	-1.469 [1.124]
Allied	**1.191 [0.529]***	**0.914 [0.315]** **	**0.749 [0.668]** **	-0.402 [0.247]	0.030 [0.136]	-0.322 [0.166]	-0.051 [0.739]	-0.460 [0.638]	-0.168 [0.558]
Cldum	0.593 [0.860]	0.278 [0.410]	-0.168 [0.608]	**-1.598 [0.773]***	**-1.250 [0.155]*** **	-0.697 [0.304]	1.625 [1.970]	0.788 [1.847]	1.139 [1.813]
AR(1)	-2.33 [Pr.=0.020]	-2.13 [Pr.=0.033]	-1.62 [Pr.=0.105]	-2.59 [Pr.=0.010]	-2.70 [Pr.=0.007]	-2.83 [Pr.=0.005]	-1.89 [Pr.=0.009]	-2.09 [Pr.=0.037]	-2.00 [Pr.=0.046]
AR(2)	0.882 [Pr.=0.773]	-0.36 [Pr.=0.720]	0.43 [Pr.=0.664]	1.48 [Pr.=0.139]	1.71 [Pr.=0.088]	1.98 [Pr.=0.047]	-1.09 [Pr.=0.275]	-1.07 [Pr.=0.286]	-1.23 [Pr.=0.218]
#Obs.	406	406	406	406	406	406	406	406	406
F-Stat(.)	6383.32 [Pr.=0.00]	397.25 [Pr.=0.00]	1344.87 [Pr.=0.00]	5817.81 [Pr.=0.00]	20021.53 [Pr.=0.00]	22787.61 [Pr.=0.00]	109.99 [Pr.=0.00]	122.76 [Pr.=0.00]	52.28 [Pr.=0.00]
Hansen Test χ^2(.)	3.80 [Pr.=0.579]	2.51 [Pr.=0.776]	5.24 [Pr.=0.387]	4.75 [Pr.=0.447]	1.50 [Pr.=0.913]	2.14 [Pr.=0.829]	10.14 [Pr.=0.071]	10.27 [Pr.=0.068]	10.01 [Pr.=0.075]

***, **, * Significant at 1%, 5% and 10% respectively (standard errors in parentheses). Sargan Test- H0: over identifying restrictions are valid (p-values in the parentheses)

Table 3: Dependent variables are Grants from the Centre, Loan from the Centre and Tax Devolution (Assembly Elections)

	Grants from the Centre (*Gfc*)			Loan from the Centre (*Lfc*)			Tax Devolution (*Td*)		
Variables	1	2	3	4	5	6	7	8	9
Dep.var(-1)	**0.715 [0.209]*** **	**0.646 [0.134]*** **	**0.673 [0.217]*** **	**1.016 [0.091]*** **	**1.009 [0.077]*** **	**0.986 [0.084]*** **	**0.388 [0.204]***	**0.405 [0.176]** **	**0.409 [0.187]** **
Dep.var(-2)	0.177 [0.115]	0.188 [0.076]**	0.182 [0.118]	-0.029 [0.066]	-0.004 [0.061]	0.005 [0.063]	0.080 [0.155]	0.048 [0.165]	0.043 [0.152]
Yr_bf_elect	-0.001 [0.290]	**0.087 [0.278]*** **	-	-0.557 [0.354]	-0.442 [0.418]	-	0.164 [0.375]	0.130 [0.360]	-
Yr_elect	0.062 [0.193]	-	**0.040 [0.411]*** **	0.173 [0.672]	-	0.461 [0.646]	0.263 [0.449]	-	0.039 [0.430]
Density	0.002 [0.001]	0.002 [0.001]**	0.002 [0.001]	-0.002 [0.001]	-0.002 [0.001]	-0.001 [0.001]	0.013 [0.010]	0.014 [0.009]	0.014 [0.009]
Nypp	-0.003 [0.019]	**0.018 [0.009]***	0.014 [0.012]	**0.071 [0.022]*** **	**0.044 [0.006]*** **	**0.042 [0.009]*** **	**0.065 [0.037]***	**0.057 [0.019]*** **	**0.063 [0.020]*** **
Pidum	-0.976 [0.978]	-	-	**1.798 [0.932]***	-	-	0.044 [1.415]	-	-
Pidum*Yr_bf_elect	-	**0.820 [0.450]***	-	-	-0.187 [1.382]	-	-	-0.518 [1.092]	-
Pidum*Yr_elect	-	-	0.087 [1.237]	-	-	-0.510 [1.229]	-	-	0.950 [0.888]
Allied	**0.871 [0.504]***	**0.811 [0.385]** **	**0.783 [0.382]***	-0.249 [0.243]	0.037 [0.149]	0.070 [0.168]	-0.608 [0.814]	-0.475 [0.743]	-0.541 [0.726]
Cldum	-0.068 [0.678]	-0.243 [0.358]	-0.294 [0.462]	**-1.601 [0.445]*** **	**-0.968 [0.139]*** **	**-1.046 [0.157]*** **	0.858 [1.999]	1.040 [1.940]	0.983 [2.026]
AR(1)	-2.25 [Pr.=0.025]	-2.64 [Pr.=0.008]	-2.17 [Pr.=0.030]	-2.81 [Pr.=0.005]	-2.79 [Pr.=0.005]	-2.72 [Pr.=0.006]	-1.75 [Pr.=0.080]	-1.90 [Pr.=0.058]	-1.89 [Pr.=0.059]
AR(2)	0.58 [Pr.=0.559]	-0.53 [Pr.=0.596]	0.45 [Pr.=0.665]	1.68 [Pr.=0.093]	1.66 [Pr.=0.097]	1.59 [Pr.=0.112]	-1.29 [Pr.=0.195]	-1.16 [Pr.=0.246]	-1.18 [Pr.=0.239]
#Obs.	406	406	406	406	406	406	406	406	406
F-Stat(.)	4032.39 [Pr.=0.00]	3928.87 [Pr.=0.00]	5169.54 [Pr.=0.00]	14492.82 [Pr.=0.00]	20664.68 [Pr.=0.00]	41076.54 [Pr.=0.00]	89.84 [Pr.=0.00]	36.53 [Pr.=0.00]	77.26 [Pr.=0.00]
Hansen Test χ^2(.)	3.92 [Pr.=0.561]	3.73 [Pr.=0.589]	3.86 [Pr.=0.570]	3.55 [Pr.=0.616]	1.92 [Pr.=0.861]	1.53 [Pr.=0.909]	10.91 [Pr.=0.053]	10.75 [Pr.=0.057]	10.72 [Pr.=0.057]

***, **, * Significant at 1%, 5% and 10% respectively (standard errors in parentheses). Sargan Test- H0: over identifying restrictions are valid (p-values in the parentheses)

At the parliamentary elections, the states run by the same party as the centre or the allied (*Allied*) states tend to get more grants but less loans. This is confirmed from the results in DDD and ADDD as well. The coalition (*Cldum*) government operates higher transfers in terms of *Gfc* and *Td* but lower loans to the states. If the same government exist even at the state level (*Allied*) then, routes to get higher *Gfc* and *Td* seems trivial. Also, if the state ruling party is a coalition partner of the union government, then allied has to be happier with the regular flow of resources for the smooth functioning of the union government and if the interest of these regional players is not taken care of, there is the fear of withdrawal of support to the government by the allied parties, which poses a political constraint. The results for the assembly elections are not very different with respect to *Allied* and *Cldum*.

Similar to what is found in the Drazen and Eslava, 2010, Aidt, Veiga and Veiga, 2011, Klomp and Hahn, 2013 and CLP, the budgetary expansion before the election in case of *Gfc* and *Lfc* is visible from the estimates in Table 2 and 3. Since the loans have to be repaid back, it does not seem difficult for the union government to transfer higher of it to the states before the election. Even when *Gfc* is operated as per the FC's recommendations, interestingly, some components of *Gfc* are determined by the Planning Commission as well as the central ministries. Thus, the year before the election effect appears to be very strong in case of both *Gfc* and *Lfc* transfers but not in case of *Td*. In sum, we can conclude from this analysis that centre-state transfer displays the electoral transfer cycle in terms of *Gfc* and *Lfc* but not in *Td*. The Arellano-Bond (1991) tests for first and second-order serial correlation of the differences in residuals confirm the auto-regression of AR(1) and AR(2). The Hansen test has been carried out to check whether the over-identifying restrictions are valid or not. Except *Td* we find very strong non-rejection of the null of the validity of over-identifying restriction. Finally, the F-statistics results are strongly supporting the models strength.

To trace the transfer cycles graphically, we first estimate Eq.(1) without the election year dummies (year before and year of election) and then estimated the second equation with these election years included. Intuitively, the residuals in the first case will capture the effect of the election years, whereas in the second case, the election years are not captured by the residuals. Finally, the residuals of the latter equation have been correspondingly subtracted from the former to get the transfers cycles. The resulting graphs of the cycles have been shown in Figures a (i) to

a(iii) for parliamentary election and Figures b (i) to b (iii) for assembly elections in Appendix A. The graphs display a pattern similar to what the empirical results suggest. That is, we have strong electoral cycles for *Gfc,*and *Lfc* but no clear cycles in case of *Td* in both the parliamentary and assembly elections.

Once the budget cycle is traced, an immediate question that arises is whether the opportunistic transfer cycles created by the incumbent at the union and state level help to win the parliamentary and assembly elections? That is, since pre-electoral cycles have been created in the case of *Gfc* and *Lfc,* the specific question is whether these pre-electoral opportunistic cycles of *Gfc* and *Lfc* can help the incumbent to win the election?

3. **Effect of Transfers on Electoral Outcome**

To analyze at the re-election prospects ascribable to opportunistic manipulations of transfers by the central government in the parliamentary election by states, we rely on a state-level analysis. Using the same dataset as above, again for 14 states, covering the parliamentary as well as the assembly elections in India, separately spanning the period 1980 to 2010, we attempt to estimate the equation of the electoral outcome. We take different transfer variants as the independent variables along with other binary and exogenous variables. The binary variable of victory has been defined state-wise in the following manner:

$$V = \begin{cases} 1, \ if \quad V^* = \frac{Seats\ Won\ by\ Incumbent - Seats\ Won\ by\ Opponent}{Total\ Parliamentary\ Seats\ at\ the\ State} > 0, \\ 0, \ otherwise, \end{cases} \qquad (4)$$

where, V is the victory as binary limited dependent variable in election to form the government and V^* is the majority victory at the state level based on both the result of the parliamentary elections and assembly elections.

4.1. Estimation Method

We now employ the fixed effect Logit model approach for the panel dataset for 14 states. The econometric equation for the fixed effect model can be specified as- $V_{it}^* = X_{it}'\beta + \theta_i + \varepsilon_{it,}$ with

$$\Pr[V_{it} = 1|X_{it},\ \theta_i] = \Pr[V_{it}^* > 0] = \Pr[\varepsilon_{it,} > -X_{it}'\beta - \theta_i] = F(X_{it}'\beta + \theta_i), \qquad (5)$$

where, F is the standard logistics distribution function, V_{it} is the binary outcome as the dependent variable (victory), which takes a value of '1' if the incumbent party has the state level majority (re-elected) and zero otherwise, θ_i is the state level fixed effect. Using the Hausman test as suggested by Baltagi (2008) under the null hypothesis of homogeneity (no individual effects), both conditional and unconditional estimator is consistent but the conditional Logit estimators are inefficient, as these may not use all the available data. Under the alternative hypothesis, the unconditional estimator is inefficient while the conditional estimator is both consistent and efficient (Greene, 2002). The Hausman test results suggest that the conditional fixed effect model for the estimation in case of union elections, whereas a random effect model is suitable in case of assembly elections. This result may be because of the different years of election in the state assembly elections. The Logit model in its estimable framework is as follows:

$$V_{it} = \Gamma_0 TR_{it} + \Gamma_1 (TR * EL)_{it} + \Gamma_2 (\Delta TR * EL)_{it} + \Gamma_3 ECO_{it} + \Gamma_4 POL_{it} + \Gamma_5 Pol\_dum_{it} + \theta_i + \varepsilon_{it,} \quad (6)$$

where, i = 1, 2, 3……14, indicates the index of states for variables (*Gfc*, *Lfc* and *Td*) and t indicate the times series in years. The equation includes state fixed effects (θ_i) and random variable is ε_{it} which is assumed as $E(\varepsilon_{it,})=0$. Our prime objective is to estimate the equation for electoral outcome (V_{it}), where the dependent variable (V_{it}) is defined as the state-wise win-margin of the national level election from the incumbent versus the opponent.

The vector TR_{ijt} variable has been used to denote as *Gfc*, *Lfc* and *Td,* each as a separate equation, and their respective coefficients in the corresponding equations will be represented by Γ_0 and expected to be positive in each case. The vector $TR * EL$ is the interaction terms of the transfer and the election (year before the election and year of election) variables. These interaction terms are expected to positively affect the wining probability of the incumbent. Similarly, the vector $\Delta TR * EL$ includes the interaction terms of the transfer in opportunistic manipulation form and election variables (year before the election and the year of election). The opportunistic transfers are expected to yield a positive electoral outcome. The vector ECO_{it} consists of gross state domestic product (*Gsdp*), Inflation (*infs*) and Population *Density*. The *Gsdp* variable shows the affluence of the state and can have affirmative results in election whereas *Infs* create unhappiness among the voters by creating hole in the pockets. The higher population density shows higher transfers in *Gfc* and *Td* (Table 2 and 3) consequently it can have

some implications for the victory of the incumbent as well, however for *Density*; we do not consider any prior. So, the corresponding effect on electoral outcome is expected to be positive, negative and dichotomous respectively. Next, the vector POL_{it} consists of voters' turnout in percentage (*Turn*) and the years of experience of incumbent party (*Nypp*) in the office. Historically, the higher turnout was always a debatable issue in terms of its effect on electoral outcome wherever, Hansford and Gomez (2010) find that high turnout produces less predictable electoral outcome but Grofman, Owen and Collet (1999) find that higher turnout rates could be a bad news for the incumbent. Consequently, we do not have any prior for *Turn*. The probability of winning the elections for the experienced incumbent is higher hence the expected sign is positive for *Nypp*. The vector of dummies are Pol_dum, which consists of political ideology (*Pidum*), state ruling party being the same as that of the union or an ally of it (*Allied*), coalition government (*Cldum*) at the union for parliamentary election and coalition government at the states for the assembly elections, and if there exist coalition governments at the centre and state ruling party is an ally of it (*Clal_dum*). In these three cases we again do not assume any priors.

The Logit model has been estimated for both the union as well as the assembly elections.

4.2 Baseline Results

Tables a(i) to a(iii) and b(i) to b(iii) in the appendix report the results of the regression for parliamentary election and assembly elections respectively. The dependent variable is a binary variable of victory that takes the value '1', if the ratio of the difference between the number of seats won by incumbent and seats won by opponent and the total number of parliamentary seats (assembly seats in the case of state level elections) in the state is greater than '0' and takes the value '0' otherwise. The remaining variables have been used as the independent variables. Both, in -- parliamentary and assembly elections -- the transfers variables used as the independent variables are - *Gfc*, *Lfc* and *Td*. Table a(i) to a(iii) present the results for the effect of transfers and opportunistic transfers along with other economic and political variables that affect the probability to win at the state level outcomes of the parliamentary elections. Similarly, Table b(i) to b(iii) presents the result for the assembly elections.

Generally, *Gfc* and *Lfc* levels on the average, help to win the election, whereas, when interacted with the year before and the year of election dummy the effect in general are less likely to win

the election. However, the opportunistic manipulation in the year before and the year of election in *Gfc* helps in winning the election whereas the same holds only in the case of year of election for *Lfc*[17]. The opportunistic manipulation in the year before to election by the incumbent in case of *Lfc* is strongly punished by the voters. There are pre-electoral cycles in the case of *Gfc* and *Lfc,* and these also help the incumbent to win the election.[18] *Td* has a negative sign and is less likely to help in winning the election, may be because of the independent nature of the FC controls over it. Surprisingly, the year before the election manipulation of *Td* significantly helps the incumbent to win the election; this is denied by the proponents of the view that Td is not subject to political manipulations.

Observing the assembly elections, generally *Gfc* and *Lfc* help in winning the elections. However, the year before election *Gfc* and *Lfc* are less likely to win the election, although the year of election levels has a positive effect on the winning probability. In fact, the year before the election opportunistic manipulation of these two variables are less likely to win the elections but the year of election opportunism has a positive effect on victory possibility. *Td* at the general level as well as in its opportunistic behavior in the year of election and the year before the election is found to win the assembly elections. This is in stark contrast to the results for the parliamentary election in our analysis.

Evidently, the year of election can help the incumbent to regain its power (as confirmed by AVV, Drazen and Eslava, 2010, CLP etc.). It appears that being an opportunist with the transfers itself are not enough as this behavior is not significantly helping the incumbent to win the election. That is, there might be the role of other factors such as -- media, actual implementation of the schemes at which transfers are being utilized etc. It states that, there are very likely for other variables such as the characteristics of the parties and its members might play a role in victory in the election as well (i.e. candidate having more education, higher age, wealthier and have at least one serious pending criminal case against can garner higher share of votes, Gupta and Panagariya, 2014).

[17] This refers to the opportunistic manipulations of Gfc and Lfc interacted with the year before the election and the year of election dummies respectively.

[18] This is probably because the component of *Gfc*, which is more open to political manipulations, whereas in the case of *Lfc*, the state has the liability to pay back to the central government and central government does not have big problem in allowing for the loans to be transferred.

4.3 Ideological and other Economic Factors Affecting Victory

This section analyzes the behavior and impact of the following variables on probability of win of the incumbent – Gross State Domestic Product (*Gsdp*), population density (*Density*), Inflation (*Infs*), Percentage of state-wise voters' turnout (*Turn*), years of experience of the party in the power (*Nypp*), if the incumbent is right wing government (*Pidum*), if the union/state government is of coalition type (*Cldum*) and if the union government is a coalition government and the state is ruled by the same party as the centre or the allied (*Clal_dum*). In the case of assembly elections, the political ideology (*Pidum*) has been ranked from 1 (right) to 5 (left). So if, the coefficient of *Pidum* is positive for parliamentary elections and negative for assembly elections, the result is coinciding. That is, a right wing government has a higher probability of winning the elections. In general, the results show that the vectors of variables like -- ECO_{it}, POL_{it} and Pol_dum_{it} have similar and robust impact on the possibility of winning the election. In fact, the behavior of these variables is not changing within and across the models. The vector ECO_{it} consists of *Gsdp*, *Infs* and *Density*. A higher *Gsdp* as an economic affluence of the states increases the likelihood of winning the election for the incumbent; however, its magnitude is small though highly significant. In India, a high inflationary situation has never been a positive signal for the incumbent's winning possibilities. That is, *Infs* is highly sensitive to the victory prospects. In fact, for instance, the inflation in case of basic food items, such as increased onion prices, indeed brought tears in Delhi's assembly election for the incumbent BJP in 1998 when they lost the power to the Congress party. For much the same reason, the Congress party hardly managed to retain the power in 2010 election. A higher population density (*Density*) is less likely to win the election. The vector POL_{it} consists of voters' turnout (*Turn*) and number of years of experience (*Nypp*). Generally, it is believed that a higher voter turnout works against the incumbent, but in our case it is helping the winning possibility of the incumbent. Similarly, greater experience (*Nypp*) is more likely to win the election. The last set of variables comprise political ideology (*Pidum*) and coalition government at the centre and the state ruling party being allied to it (*Clal_dum*); these variables are contained in vector Pol_dum_{it}. The results show that the chances of the right wing incumbent to win the election are higher, and the results are highly significant. If the state and centre have the same government or the state government is allied (*Allied*), then the prospects of winning the election are less. The coalition government is less likely to win the elections. Similarly, if there exist coalition government at the centre and the

same coalition is in power at the state or it is allied (C*lal_dum*) then the incumbent is less likely to win the election.

In most of cases, the results of the parliamentary elections and assembly elections are similar except few differences in statistical modeling, that is, the presence of conditional fixed effect in parliamentary elections and random effect in assembly elections. The additional dis-similarities are: *Density* is more likely to win the assembly election but not the parliamentary elections of the state-wise results. Also, if there is a coalition government at the union and the state ruling party is an ally then, the winning probability is higher in the parliamentary election whereas there is less likelihood of winning the assembly election.

5. Conclusion

The sub-national transfer of different kind, such as *Gfc*, *Lfc* and *Td*, involve three important institutions in the biggest democracy of the world, namely - Planning Commission (Now NITI Aayog)), Finance Commission and the incumbent government. Although, the FC is an independent constitutional entity, constituted every five years by President, yet there is the scope for the central government under clause 3(c) of article 280 which reads, "any other matter referred to the commission by the president in the interest of sound finance", to put certain restrictions on Finance Commission.[19] The most of the components of grants from the centre (*Gfc*) and the *Td* are under the purview of FC. However, the Planning Commission and central government play a greater role in the *Gfc* and *Lfc*.

To trace the political transfer cycles, we find that, *Gfc* and *Lfc* are politically motivated and exhibit pre-electoral cycles, whereas no clear cycles have been traced in the case of *Td*. This finding is similar to the literature on political budget cycle (PBC)[20]. The PTC traces the cycle in the year before the election for the parliamentary elections but it is the year of election for the assembly elections. Also, in almost all the cases the transfer variables are autoregressive up to two lags but mostly significant only up to first lag. A right wing and coalition incumbents have a

[19] Finance Commission is an independent constitutional body, constituted every five year by president under article-280(iii).
[20] This is analyzed in another paper by the authors.

tendency to transfer less to the states, however, the former provide more loans to the states. Additionally, if there exist the same party rule at the state level or if the state is an ally of the centre then the allied state receives more rewards from the centre in the form of *Gfc* and *Lfc*.

In the second part of the paper, we analyze whether such politically motivated transfers actually impact the probability of winning the election. Using the Logit estimation method, we find that *Gfc* and *Lfc* in the year before the election punish the incumbent, whereas an opportunistic manipulation in the year of election rewards the incumbent by positively affecting the probability of winning the election. That is, even if there is a pre-electoral cycle in *Gfc* and *Lfc*, it does not really affect the electoral outcome and the role of other factors cannot be ignored. In fact, in case of pre-electoral cycle in *Lfc*, the incumbent is strongly punished by the voters. The remaining economic, political variables and political dummies are robust in its results. That is, a higher *Gsdp* help the central incumbent government to win the election, though the increase is very less in magnitude. Inflation (*Infs*) is very harmful for the incumbent as it increases the likelihood of losing the election. However, a higher voters' turnout (*Turn*) in the state is more likely to help in winning the election to incumbent and a more experienced government (*Nypp*) has a higher probability of winning the election. Similarly, a right wing (*Pidum*) government is more likely to win the election, whereas the presence of a coalition government where states are its allies reduces the possibility of winning the election.

The likely questions that emerge from this paper that can lead to further research are as follows: how do these transfers' cycles behave when the allied parties of the coalition government operate as a special interest group? How will the results be affected if the model involves an industry special interest group, to which the union government provides the regulatory benefit and, in return, receives bribes to fund the election campaign expenditure? The third extension from this paper could analyze the effect of decentralization on economic growth.

References

Aidt, T. S., Veiga, F. J. and L.G. Veiga.(2011). "Election Results and Opportunistic Policies: A new test of the rational political Business Cycle model", *Public Choice*, 148: 21-44.

Alesina, A., and M. Paridisi. (2014). "Political Budget Cycles: Evidence from the Italian Cities", *NBER Working Paper* 20570.

Alesina, A., Roubini, N. and G. D. Cohen. (1997). "Political Cycles and the Macroeconomy", Cambridge: MIT Press.

Arellano, M., Bond, S. (1991). "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations", *Review of Economic Studies*, Vol. 58, pp. 277–297.

Arellano, M., Bover, O. (1995), "Another look at the instrumental variable estimation of error-components models.", *Journal of Econometrics*, Vol. 68, pp. 29–51.

Arulumpalam, W., Dasgupta, S, Dhillon, A and B. Dutta. (2009), "Electoral goals and center-state transfers: A theoretical model and empirical evidence from India", *Journal of Development Economics*, Vol. 88, pp. 103-119

Bagchi, A. (2003), "Rethinking Federalism: Changing Power Relations between the centre and and the States", *Publius*, Vol. 33, No.04, Emerging Federal Process in India, pp.21-42.

Baltagi, B.H., (2008). Econometric Analysis of Panel Data. fourth ed. John Wiley & Sons, Chichester, UK; Hoboken, NJ.

Baskaran, T., Brender, A., Blesse, S. and Reingewertz, Y. (2016). "Revenue Decentralisation, central oversight and the Political Budget Cycle: Evidence from the Israel", *European Journal of Political Economy*, Vol. 42, pp.1-16

Biswas, R, and Marjit, S. (2000). "Political Lobbying and Discretionary Finance in India: An Aspect of Regional Political Influence in a Representative Democracy", *Working Paper*, Centre for Studies in Social Sciences, Calcutta.

Blundell, R., Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. J. Econometrics, Vol. 87, pp.115–143.

Brender, A. and Drazen, A. (2005). "Political Budget Cycles in New versus Established Democracies." *NBER Working Paper* 10539

Brender, A. and Drazen, A. (2013). "Elections, Leaders, and the Composition of Government Spending", *Journal of Public Economics*, Vo. 97, Issue-1, pp. 18-31

Brug, W., Eijk, C. and Franklin, M. (2007), "The Economy and the Vote: Economic Conditions and Elections in Fifteen Countries". Cambridge University Press.

Chakraborty, P. (2003). "Unequal Fiscal Capacities Across India States: How Corrective is the Fiscal Transfer Mechanism?" National Institute of Public Finance and Policy, mimeo

Chortareas, G., V. Logothetis and Papandreou, A. A. (2016). "Political budget cycles and reelection prospects in Greece's municipalities", *European Journal of Political Economy*, Vol. 43, pp. 1-13.

Cukierman, A. and Meltzer, A.H.(1986). "A Positive Theory of Discretionary Policy, the Cost of Democratic Government and the Benefits of the Constitution", *Economic Enquiry*, Vol. XXIV.

Dasgupta, S., Dhillon, A and Dutta, B. (2003). "Electoral Goals and Centre-State Transfers: A Theoretical Model and Empirical Evidence from India". New Delhi: Indian Statistical Institute.

Dixit, A. and Londregan, J. (1995), "Redistributive Politics and Economic Efficiency.", *American Political Science Review*, Vol. 89, pp. 856-866.

Dixit, A. and Londregan, J. (1996), "The Determinants of Success in Redistributive Politics.", *Journal of Politics*, Vol. 58, pp.1132-1155.

Dixit, A. and Londregan, J. (1998a), "Ideology, Tactics and Efficiency in Politics.", *Quarterly Journal of Economics*, Vol. 113, pp. 497-529

Dixit, A. and Londregan, J. (1998b), "Fiscal Federalism and Distributive Politics.", *Journal of Public Economics*, Vol. 68, pp. 153-180.

Drazen, A., (2000). "The Political Business Cycle after 25 Years", Ben S. Bernanke and Kenneth Rogoff (eds.), *NBER Macroeconomic Annual 2000*, MIT Press, Volume 15, 75-138.

Drazen, A. and Eslava, M. (2010). "Electoral manipulation via expenditure composition: theory and evidence", *Journal of Development Economics*, Vol. 92, pp. 39-52.

Dutta, B. and Gupta, P. (2014), "How Indian Voters Respond to Candidates with Criminal Charges Evidence from 2009 Lok Sabha Elections", Vol. XLIX, No. 04, pp. 43-51

Efthyvoulou, G. (2012), "Political Budget Cycles in the European Union and the impact of political pressures", *Public Choice*, Vol. 153, pp. 295-327.

Frey, B. S. and Schneider, F. (1978). "A Politico-Economic Model of the United Kingdom", *The Economic Journal*, Vol. 80, No. 350, pp. 243-253.

George, K.K. and Gulati, I. S. (1985a), "Central Inroads into States subjects", *Economics and Political Weekly*, April 6, 1985.

George, K.K. and Gulati, I. S. (1985b), "Central-state Resource Transfers, 1951-84- An Appraisal", *Economics and Political Weekly*, February 16, 1985.

Green, W. (2003), "Econometric Analysis", Pearson Publication

Grofman, Bernard, Guillermo Owen, and Christian Collet (1999)., "Rethinking the Partisan Effects of Higher Turnout: So What's the Question?", *Public Choice,* Vol. 99 (June), pp. 357-376.

Gulati, I.S. and George, K. K. (1978), "Inter-state re-distribution through budgetary transfers ", *Economic and Political Weekly*, Special Number August, 1978.

Gupta, P. and Panagariya, A (2014), "Growth and Election Outcome in a Developing Country", Economics and Politics, Vol. 26, 'No. 02, pp. 332-354

Hansford, T.G and Gomez, B.T. (2010), "Estimating the Electoral Effects of Voter Turnout", *American Politcal Science Review*, Vol. 104, No.2, pp.268-288.

Hibbs, D. (1977). "Political Parties and Macroeconomic Policy", *American Political Science Review*. Vol. 71, No. 4, pp. 1467-1487.

Iyer, S., and Shrivastava, A. (2015), "Rligious Right and Electoral Politics in India", Cambridge Working Papers in Economics, CWPE 1536.

Inman, Robert P. and Rubinfeld Daniel L. (1997). "The political economy of federalism". In Perspectives on Public Choice :A Handbook, ed. Dennis C. Mueller, 73-105. Cambridge, U.K. and New York: Cambridge University Press

Khemani, S. (2004). "Political Cycles in a Developing Economy: Effect of Elections in the Indian States", *Journal of Development Economics*, Vol. 73, pp. 125-154.

Kiviet, J.F. (1995). On bias, inconsistency, and efficiency of various estimators in dynamic panel data models. *Journal of Econometrics*, Vo. 68, pp. 53–78.

Klomp, J and J. de Haan (2013), "Political budget cycle and election outcomes", *Public Choice*, Vol. 157, pp. 245-s267.

Kneebone, R. and McKenzie, K. (2001). "Electoral and Partisan Cycles in Fiscal Policy: An Examination of Canadian Provinces," *International Tax and Public Finance*, Vol. 8, pp. 753-774.

Kroth, V. (2012), Political budget cycles and intergovernmental transfers in a dominant party framework: empirical evidence from South Africa, Political Science and Political Economy Working Paper, Department of Economics, London School of Economics, No. 6/2012.

Lindbeck, A. and Weibull, J. (1987), "Balanced-Budget Redistribution as the Outcome of Political Competition.", *Public Choice*", Vol. 52, pp. 273-297.

Manjhi, G and Mehra, M. K. (2016), "Dynamics of Political Budget Cycle", *NIPFP Working Paper*, no. 163.

Mourao, P and Veiga, L.G. (2010), "Elections, Fiscal Policy and Fiscal Illusions", NIPE, WP 18/2010.

Nickell, S.J. (1981). "Biases in dynamic models with fixed effects", *Econometrica*, Vol. 49, pp. 1417–1426.

Nordhaus, W. (1975). "The Political Business Cycle," *Review of Economic Studies*, Vol. 42, pp. 169-90.

Persson, T. and Tabellini, G. (1990), *Macroeconomic Policy, Credibility and Politics*, London: Harwood

Persson, T. and Tabellini, G. (2000). "Political Economics, Explaining Economic Policy, Cambridge, MA: The MIT Press.

Persson, T. and Tabellini, G. (2003), "Do Electoral Cycles differ across Political Systems?", *CEPR Working Paper Series*, No. 232.

Rao, M.G. and N. Singh, (2001), "The Political Economy of Center-State Fiscal Transfers in India", Working Paper No. 107, Stanford Center for International Development

Rao, M.G. and N. Singh, (1998), "An analysis of Explicit and Implicit Intergovernmental Transfers in India." University of California at Santa Cruz, mimeo.

Rao, M.G. and N. Singh, (2007), "The Political Economy of India's Fiscal Federal System and its Reform", *Publius*, Vol. 37, No. 1, pp. 26-44.

Reid, B. G. (1998), "Endogenous elections, electoral budget cycles and Canadian provincial governments", *Public Choice*, Vol. 97, Issue 1-2, pp 35-48.

Rogoff, K. (1990), "Equilibrium political budget cycles", *American Economic Review*, Vol. *80*, pp. 21–36.

Rogoff, K. and A. Sibert (1988), "Elections and macroeconomic policy cycles", *Review of Economics Studies*, Vol. *55*, pp. 1–16.

Roodman, D., 2009a. How to do xtabond2: an introduction to difference and system GMM in Stata. Stata Journal, Vol. 9, pp. 86–136.

Roodman, D., 2009b. A note on the theme of too many instruments. Oxford Bulletin of Economics and Statistics, Vol. 71, pp. 135–158.

Rudolph, L.I., and Rudolph, S. H. (2001). "Iconisation of Chandrababu: Sharing sovereignty in India's federal market economy", *Economic and Political Weekly*, 36, May 5, 1541-1552.

Sengupta, B. (2011). "Provision of public goods in a federal economy: The role of Party Politics", *European Journal of Political Economy*, Vo. 27, pp. 104-119.

Sengupta, B. (2015). "Endogenous Leadership in a Federal Transfer Game", http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2782338

Shi, M. and Svensson, J. (2002a). "Political budget cycles in developed and developing countries" (mimeo), Development Research Group, World Bank.

Shi, M. and Svensson, J. (2002b). "Conditional political budget cycles" (mimeo), Development Research Group, World Bank

Shi, M. and Svensson, J. (2006). "Political budget cycles: do they differ across countries and why?" *Journal of Public Economics*, Vol.*90*, pp. 1367–1389.

Veiga, L. G. and Veiga, F. J. (2007), "Political Business Cycle at the Municipal Level", Public Choice, Vol. 131, No. 1/2, pp. 45-64

Yadav, Y. (1999). "Electoral Politics in the Time of Change: India's Third Electoral System, 1989-99", Economic and Political Weekly, Vol. 34, No. 34/35, pp. 2393-2399.

Election Commission of India, All the General Election State wise Results, (http://eci.nic.in/eci_main1/ElectionStatistics.aspx)

Association for Democratic Reform, India and myneta.info.

Reserve Bank of India, Yearly Database on State Finance: A Study of Budgets (State Finances: A Study of Budgets, https://www.rbi.org.in/Scripts/AnnualPublications.aspx?head=State%20Finances%20:%20A%20Study%20of%20Budgets)

Database of Central Statistical Organization

Database of Ministry of Finance database

Appendix

Table A1: Variables and Data Definitions

Variables	Data Sources	Definitions and Details
Grants from the Centre (*Gfc*)	1980-2010 , Reserve Bank of India (Handbook of Statistics on State Government Finances)	Grants given to states are one of the channels to transfer the fund processed through the Planning Commission. This is being given for state and central plan schemes, centrally sponsored schemes, North Eastern Councils/Special plan schemes and non-plan grants (Statutory Grants, Grants for Natural Calamities, non plan non-statutory grants). The basic principles for Grants are – determining the need of states from its budget, observing the efforts made by states to realize their potential revenue and equalizing standards of basic services across states. Grants could be given to take care of any special burden or obligations of national concern within the States' sphere, as well for providing any beneficial service of national interest to less advanced States. The earlier finance commissions have predominantly adopted a gap-filling approach to determine the quantum of grants to states to cover the deficit in the non-plan revenue account. Effectively there are five purposes for which *Gfc* can be provided – revenue deficit, disaster relief, to supplement the resources to the local bodies, sector specific and states specific.
Loan from the Centre (*Lfc*)	1980-2010 , Reserve Bank of India (Handbook of Statistics on State Government Finances)	Loan is also processed through the Planning commission. However, in this case states are liable to pay back the loan. It can be plan loan or non plan loan from the centre.
Gross Devolution and Transfer of Resources from Centre (*Gdtr*)	1980-2010 , Reserve Bank of India (Handbook of Statistics on State Government Finances)	Devolution and other transfer of resources are done through the Finance Commission. It is also the shared taxes of the Union from the states.

(I) Transfer Cycles using Parliamentary Elections

Figure a(i): Grants from the Centre (*Gfc*)

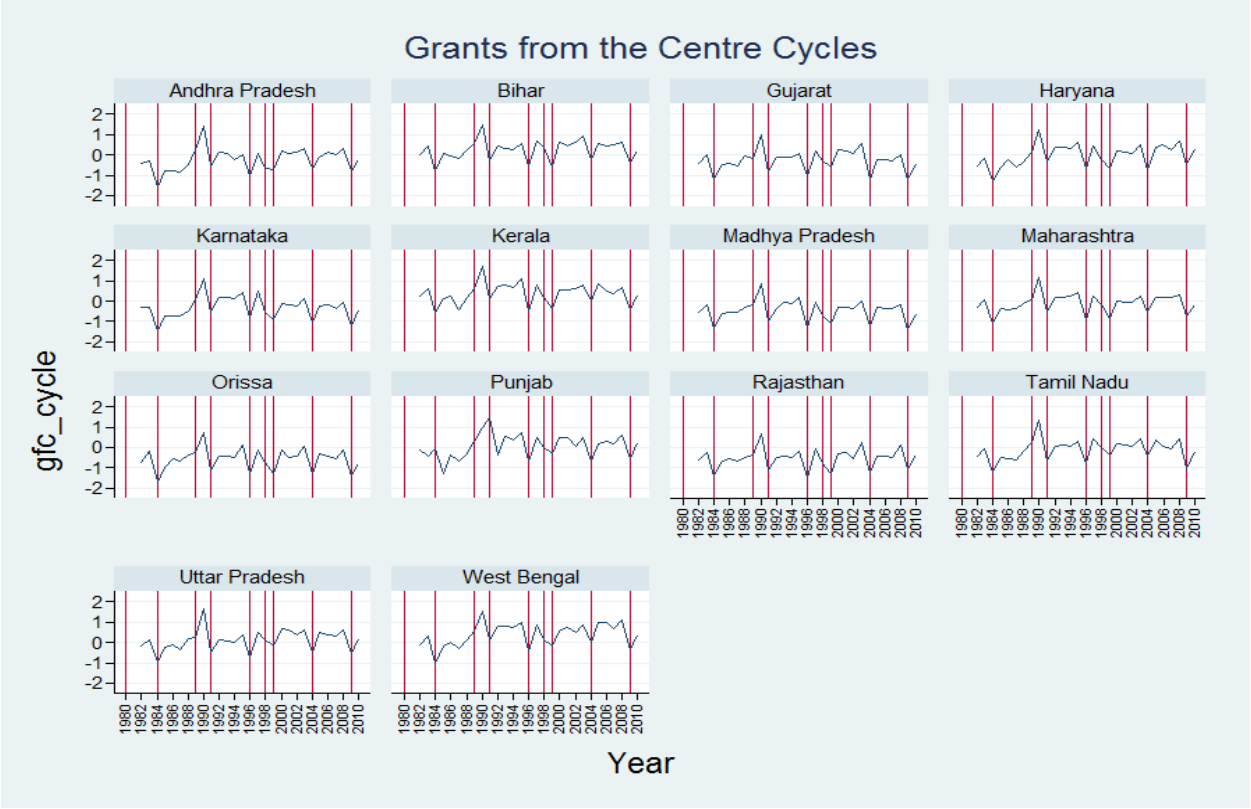


Figure a(ii): Loan from the Centre (*Lfc*)

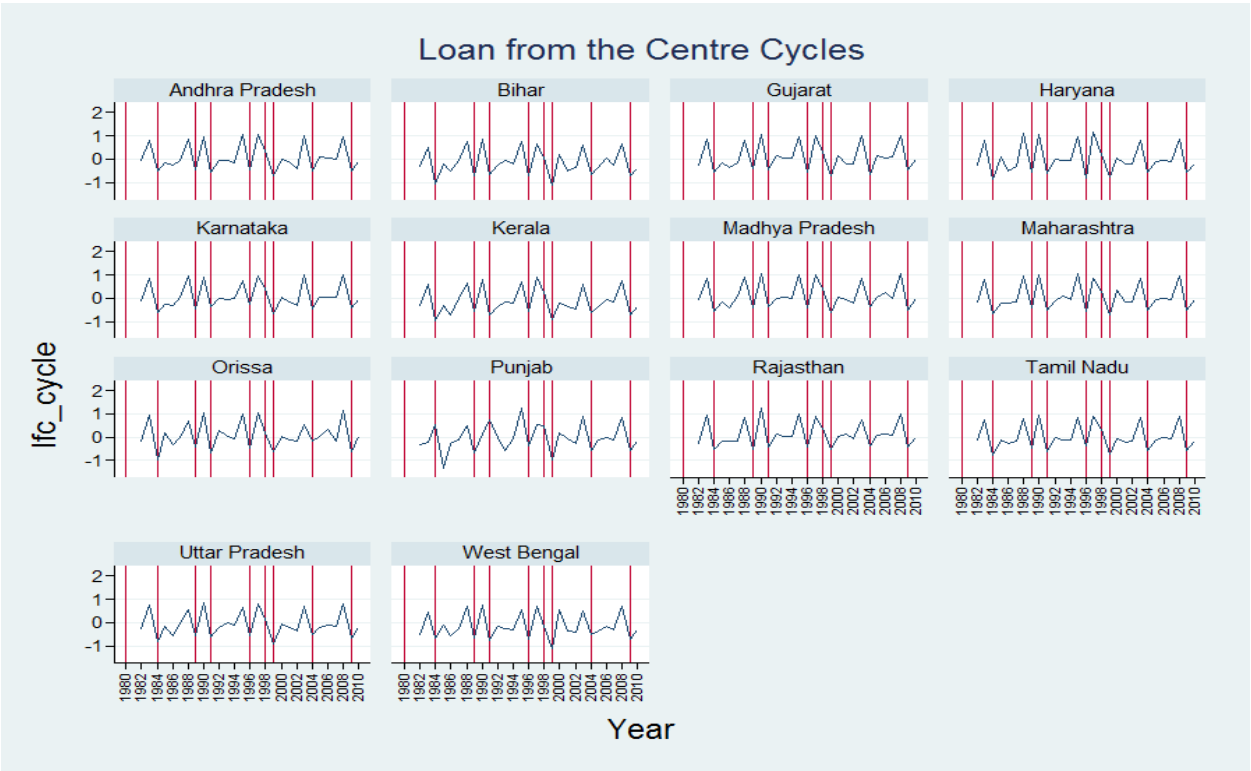
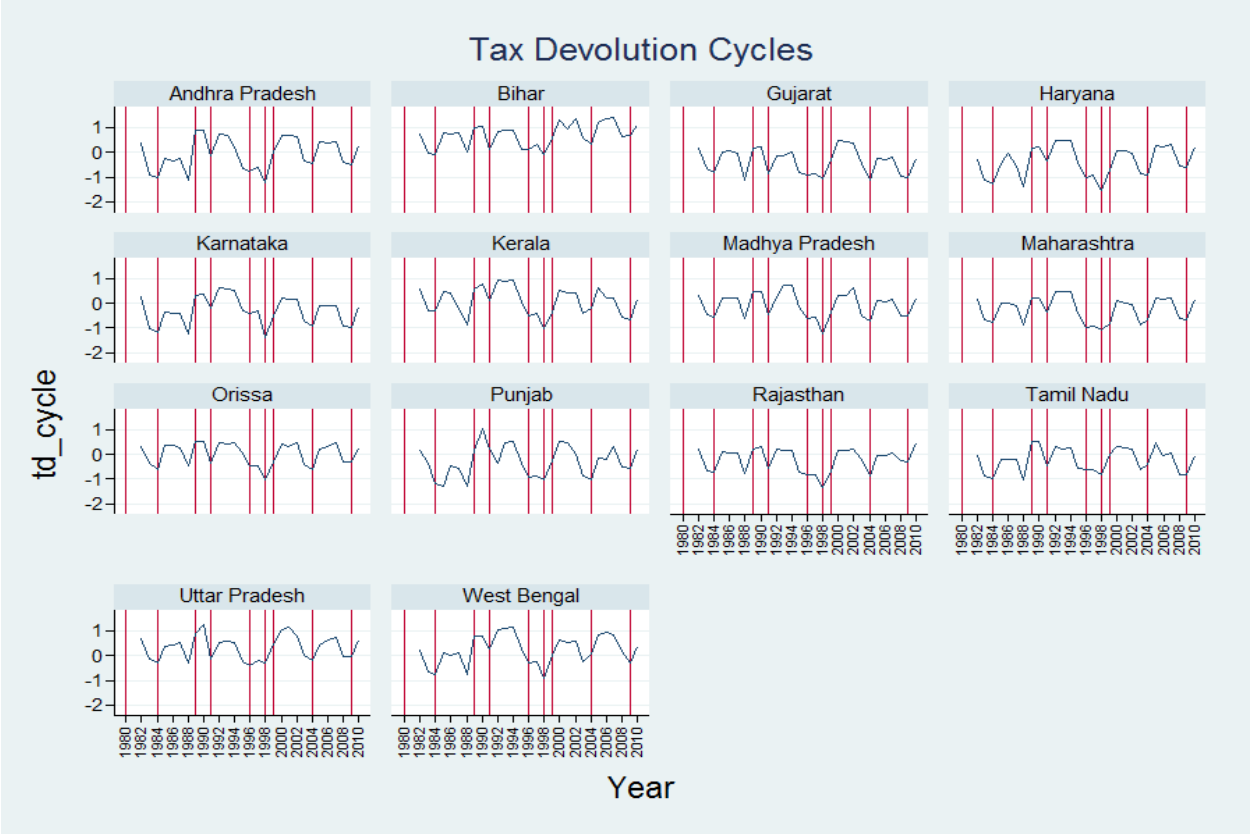


Figure a(iii): Tax Devolution (*Td*)



(II) Transfer Cycles using Assembly Election

Figure b (i) Grants from the Centre (*Gfc*)

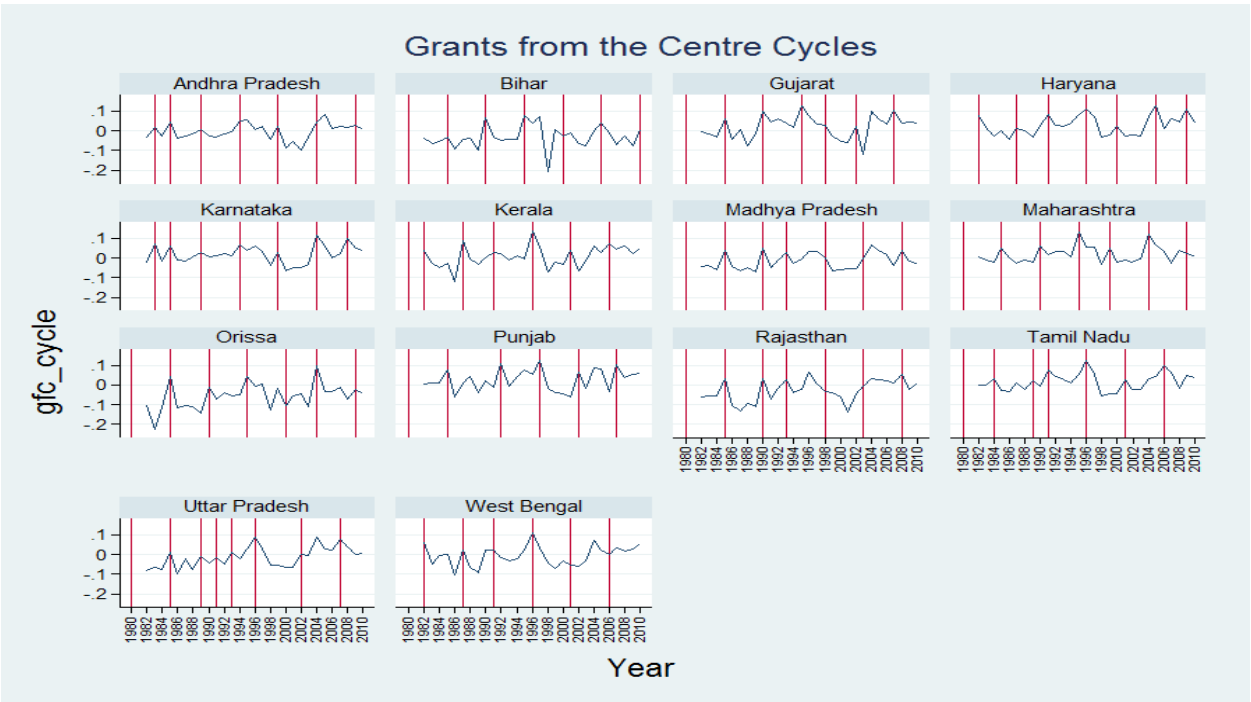


Figure b (ii) Loan from the Centre (*Lfc*)

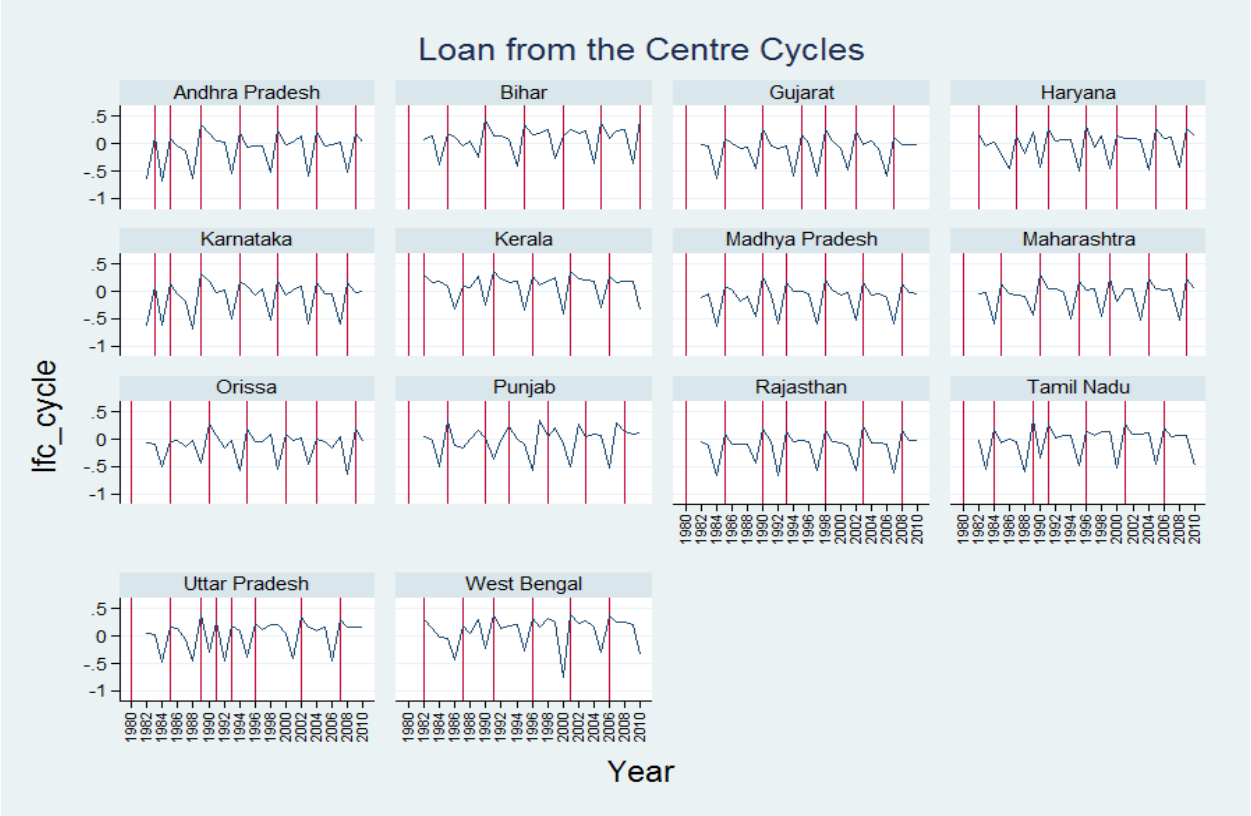
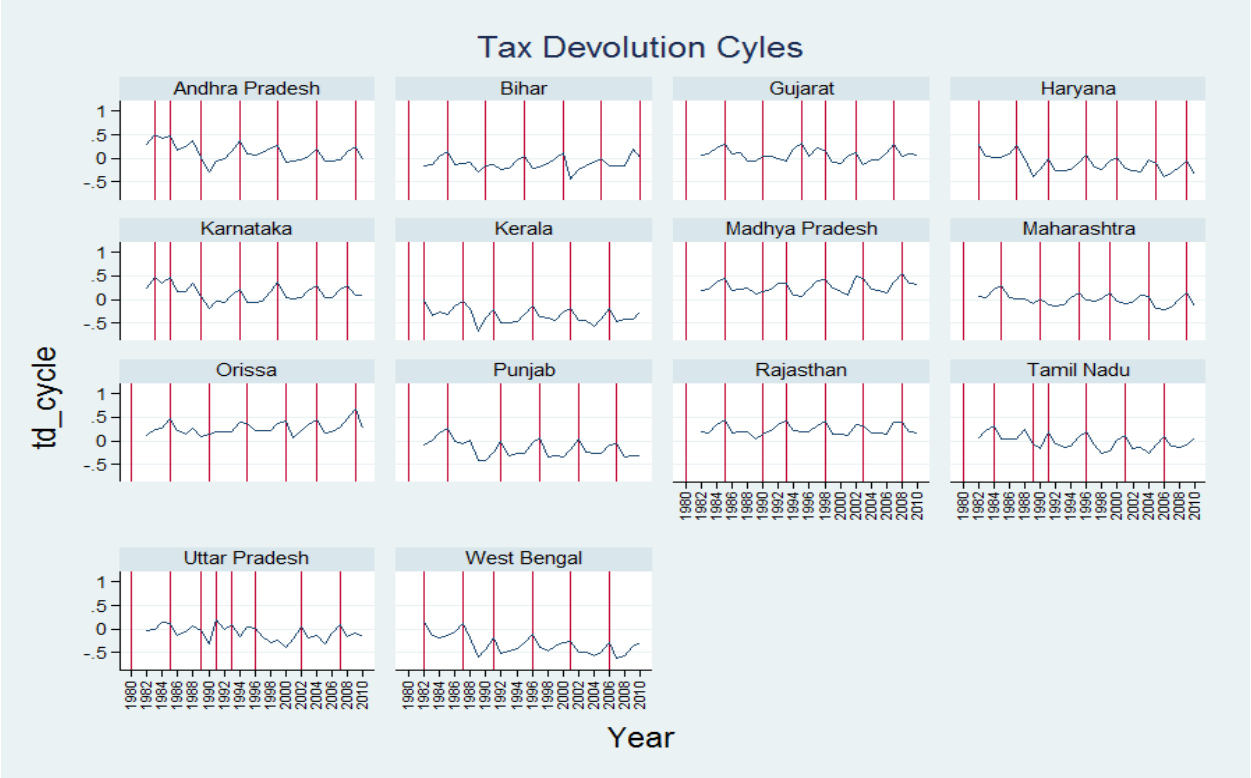


Figure b (iii) Tax Devolution (*Td*)



(III) Logit Model using Parliamentary Elections

Table a(i): Effect of Grants from the Centre on winning possibility of the incumbent

Dependent Var.: Victory	1	2	3	4	5
Grants from the Centre	0.044 [0.048]	-		-	-
Grants from the Centre (Year Before to the Election)	-	-0.014 [0.024]		-	-
Grants from the Centre (Year of Election)	-	-	-0.011 [0.026]	-	-
Opportunistic Manipulation of Grants from the Centre (Year before to Election)	-	-	-	0.207 [0.109]*	-
Opportunistic Manipulation of Grants from the Centre (Year of Election)	-	-	-	-	0.045 [0.084]
Gross State Domestic Product (*Gsdp*)	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**
Inflation (Infs)	-0.083 [0.030]***	-0.080 [0.030]***	-0.080 [0.030]***	-0.075 [0.030]**	-0.081 [0.030]***
Density	-0.003 [0.003]	-0.00 [0.003]	-0.003 [0.003]	-0.003 [0.003]	-0.003 [0.003]
Voter Turnout (Turnout in %)	0.185 [0.031]***	0.185 [0.031]***	0.185 [0.031]***	0.187 [0.031]***	0.186 [0.031]***
No. of Years Party is in Power (Nypp)	0.029 [0.014]**	0.028 [0.014]**	0.029 [0.014]**	0.032 [0.014]**	0.028 [0.014]**
Ideology (Pidum)	1.505 [0.565]***	1.349 [0.553]**	1.365 [0.551]**	1.598 [0.563]***	1.333 [0.557]**
Same Ruling party at the state or allied (Allied)	-1.321 [0.503]***	-1.311 [0.499]***	1.304 [0.499]***	1.292 [0.500]***	-1.292 [0.499]**

Coalition Government at the Centre level (*Cldum*)	-0.893 [0.505]*	-0.923 [0.504]*	-0.897 [0.504]*	-0.811 [0.506]*	-0.877 [0.508]*
Coalition Government at the Centre and same party is in Power at state level or ally (*Clal_dum*)	0.321 [0.629]	0.326 [0.627]	0.318 [0.626]	0.280 [0.629]	0.299 [0.628]
LR $\chi^2(8)$	109.06 [Pr.=0.00]	108.56 [Pr.=0.00]	108.41 [Pr.=0.00]	112.04 [Pr.=0.00]	108.51 [Pr.=0.00]
Hausman Test	χ^2=23.81 [Pr.=0.005]	χ^2=27.61 [Prob=0.001]	χ^2=31.89 [Pr.=0.000]	χ^2=20.73 [Pr.=0.014]	**χ^2=14.19 [Pr.=0.116]**
No. of Obs.	416	416	416	416	416

Note- Coefficients from conditional fixed effect Logit regressions. Robust Standard errors are in bracket. ***, **, * Significant at 1%, 5% and 10% level respectively.

Table a(ii): Effect of Loan from the Centre on winning possibility of the incumbent.

Dependent Var.: Victory	1	2	3	4	5
Loan from the Centre (*Lfc*)	0.063 [0.031]**	-	**-**	**-**	**-**
Lfc (Year Before to the Election)	**-**	-0.017 [0.018]	-	**-**	**-**
Lfc (Year of Election)	-	-	0.0003 [0.021]	-	-
Opportunistic Manipulation of *Lfc* (Year before to Election)	**-**	**-**	**-**	-0.083 [0.053]	
Opportunistic Manipulation of *Lfc* (Year of Election)	-	-	-	-	-0.081 [0.055]
Gross State Domestic Product (*Gsdp*)	0.000 [0.000]***	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**
Inflation (Infs)	-0.087 [0.031]****	-0.081 [0.030]***	-0.081 [0.030]***	-0.082 [0.030]***	-0.077 [0.030]***
Density	-0.001	-0.003	-0.003	-0.003	-0.003

	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Voter Turnout (Turnout in %)	0.175 [0.030]***	0.187 [0.031]***	0.184 [0.031]***	0.187 [0.031]***	0.188 [0.031]***
No. of Years Party is in Power (Nypp)	0.032 [0.014]**	0.029 [0.014]**	0.029 [0.014]**	0.032 [0.014]**	0.031 [0.014]**
Ideology (Pidum)	1.480 [0.555]***	1.380 [0.550]**	1.387 [0.551]**	1.550 [0.563]***	1.467 [0.555]***
Same Ruling party at the state or allied (Allied)	-1.268 [0.511]**	-1.341 [0.502]***	-1.298 [0.499]***	-1.365 [0.505]***	-1.296 [0.500]***
Coalition Government at the Centre level (*Cldum*)	-0.920 [0.511]*	-0.918 [0.504]*	-0.913 [0.506]*	-0.946 [0.505]*	-0.926 [0.503]*
Coalition Government at the Centre and same party is in Power at state level or ally(*Clal_dm*)	0.294 [0.640]	0.345 [0.628]	0.316 [0.627]	0.390 [0.631]	0.313 [0.628]
LR χ^2(.)	112.54 [Pr.=0.00]	109.07 [Pr.=0.00]	104.9 [Pr.=0.00]	110.65 [Pr.=0.00]	110.63 [Pr.=0.00]
Hausman Test	χ^2=4.11 [Pr.=0.9044]	χ^2=16.95 [Pr.=0.0495]	χ^2=20.33 [Pr.=0.016]	χ^2=124.28 [Pr.=0.000]	χ^2=22.90 [Pr.=0.006]
No. of Obs.	416	416	416	416	416

Note- Coefficients from conditional fixed effect Logit regressions. Robust Standard errors are in bracket. ***, **, * Significant at 1%, 5% and 10% level respectively.

Table a(iii): Effect of Tax Devolution on winning possibility of the incumbent

Dependent Var.: Victory	1	2	3	4	5
Tax Devolution (Td)	-0.072 [0.042]*		-	-	-
Td (Year Before to the Election)	-	-0.012 [0.014]		-	-

Td (Year of Election)	-	-	-0.013 [0.014]		-
Opportunistic Manipulation of *Td* (Year before to Election)	-	-	-	0.223 [0.103]**	-
Opportunistic Manipulation of *Td* (Year of Election)	-	-	-	-	-0.078 [0.058]
Gross State Domestic Product (*Gsdp*)	0.000 [0.000]*	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**
Inflation (Infs)	-0.083 [0.030]***	-0.080 [0.030]***	-0.081 [0.030]***	-0.076 [0.030]***	-0.082 [0.030]***
Density	-0.001 [0.003]	-0.003 [0.003]	-0.003 [0.003]	-0.002 [0.003]	-0.003 [0.003]
Voter Turnout (Turnout in %)	0.185 [0.031]***	0.185 [0.031]***	0.185 [0.031]***	0.185 [0.031]***	0.186 [0.031]***
No. of Years Party is in Power (Nypp)	0.029 [0.014]**	0.029 [0.014]**	0.028 [0.014]**	0.025 [0.014]*	0.028 [0.014]**
Ideology (Pidum)	1.159 [0.566]**	1.376 [0.550]**	1.335 [0.552]**	1.374 [0.551]**	1.303 [0.555]**
Same Ruling party at the state or allied (Allied)	-1.522 [0.524]***	-1.323 [0.500]***	-1.319 [0.500]***	-1.306 [0.501]***	-1.305 [0.501]***
Coalition Government at the Centre level (*Cldum*)	-1.113 [0.522]**	-0.918 [0.504]*	-0.889 [0.505]*	-1.082 [0.512]**	-0.893 [0.504]*
Coalition Government at the Centre and same party is in Power at state level or ally (*Clal_dm*)	0.484 [0.643]	0.329 [0.628]	0.330 [0.627]	0.356 [0.633]	0.327 [0.629]
LR χ^2	111.25 [Pr.=0.00]	108.88 [Pr.=0.00]	108.99 [Pr.=0.00]	114.04 [Pr.=0.00]	109.09 [Pr.=0.00]
Hausman Test	χ^2=17.66 [Pr.=0.039]	χ^2=16.73 [Pr.=0.053]	χ^2=30.93 [Pr.=0.0003]	χ^2=19.27 [Pr.=0.023]	χ^2=55.57 [Pr.=0.000]

No. of Obs.	416	416	416	416	416

Note- Coefficients from conditional fixed Logit regressions. Robust Standard errors are in bracket. ***, **, * Significant at 1%, 5% and 10% level respectively.

(IV) Logit Model using Assembly Elections

Table b(i): Effect of Grants from the Centre on winning possibility of the incumbent

Dependent Var.: Victory	1	2	3	4	5
Grants from the Centre	0.071 [0.042]*	-	-	-	-
Grants from the Centre (Year Before to the Election)	-	-0.002 [0.024]	-	-	-
Grants from the Centre (Year of Election)	-	-	0.024 [0.025]	-	-
Opportunistic Manipulation of Grants from the Centre (Year before to Election)	-	-	-	-0.174 [0.109]	-
Opportunistic Manipulation of Grants from the Centre (Year of Election)	-	-	-	-	0.114 [0.101]
Gross State Domestic Product (*Gsdp*)	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]
Inflation (Infs)	-0.043 [0.025]*	-0.038 [0.025]	-0.042 [0.025]*	-0.039 [0.025]	-0.037 [0.025]
Density	0.003 [0.002]**	0.003 [0.002]**	0.003 [0.002]**	0.004 [0.002]**	0.003 [0.002]**
Voter Turnout (Turnout in %)	0.103 [0.026]***	0.095 [0.025]***	0.096 [0.025]***	0.101 [0.026]***	0.097 [0.025]***
No. of Years Party is in Power (Nypp)	-0.001	0.000	0.001	0.000	0.000

	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]
Ideology (Pidum)	-0.167 [0.182]	-0.233 [0.179]	-0.228 [0.178]	-0.250 [0.179]	-0.219 [0.179]
Same Ruling party at the state or allied (Allied)	1.390 [0.431]***	1.491 [0.427]***	1.499 [0.426]***	1.569 [0.429]***	1.472 [0.427]***
Coalition Government at state level (*Cldum*)	-0.300 [0.318]	-0.255 [0.315]	-0.259 [0.316]	-0.254 [0.317]	-0.259 [0.316]
Coalition Government at the Centre and same party is in Power at state level or ally (*Clal_dm*)	-1.710 [0.501]***	-1.798 [0.500]***	-1.817 [0.500]***	-1.862 [0.505]***	-1.781 [0.500]***
Constant	-8.428 [2.131]***	-7.235 [1.996]***	-7.356 [1.990]***	-7.698 [2.046]***	-7.449 [2.008]***
Wald - $\chi^2(9)$	28.09 [Pr.=0.0017]	25.91 [Pr.=0.004]	26.82 [Pr.=0.051]	27.67 [Pr.=0.002]	27.05 [Pr.=0.003]
Hausman Test	χ^2=1.41 [Pr.=0.997]	χ^2=5.88 [Prob=0.00]	χ^2=1.09 [Pr.=0.999]	χ^2=0.79 [Pr.=0.999]	χ^2=1.48 [Pr.=0.997]
No. of Obs.	434	433	434	433	434

Note-Coefficients from random effect Logit regressions. Robust Standard errors are in bracket. ***, **, * Significant at 1%, 5% and 10% level respectively.

Table b(ii): Effect of Loan from the Centre on winning possibility of the incumbent.

Dependent Var.: Victory	1	2	3	4	5
Loan from the Centre (*Lfc*)	0.104 [0.028]***	-	-	-	-
Lfc (Year Before to the Election)	-	-0.005 [0.018]	-	-	-
Lfc (Year of Election)	-	-	0.023 [0.023]	-	-
Opportunistic Manipulation of *Lfc* (Year before to Election)	-	-	-	-0.149 [0.090]	

Opportunistic Manipulation of *Lfc* (Year of Election)	-	-	-	-	0.231 [0.079]***
Gross State Domestic Product (*Gsdp*)	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]
Inflation (Infs)	-0.047 [0.027]*	-0.084 [0.029]	-0.042 [0.025]*	-0.039 [0.025]	-0.043 [0.026]*
Density	0.006 [0.002]**	0.003 [0.002]**	0.004 [0.002]**	0.003 [0.002]**	0.004 [0.002]**
Voter Turnout (Turnout in %)	0.099 [0.027]***	0.094 [0.025]***	0.094 [0.025]***	0.096 [0.025]***	0.097 [0.026]***
No. of Years Party is in Power (Nypp)	0.005 [0.013]	0.000 [0.012]	0.001 [0.012]	0.000 [0.012]	0.001 [0.012]
Ideology (Pidum)	-0.281 [0.183]	-0.235 [0.178]	-0.240 [0.178]	-0.259 [0.182]	-0.220 [0.181]
Same Ruling party at the state or allied (Allied)	1.397 [0.451]***	1.482 [0.428]**	1.500 [0.427]***	1.520 [0.429]***	1.472 [0.433]***
Coalition Government at state level (*Cldum*)	-0.204 [0.328]	-0.254 [0.315]	-0.258 [0.315]	-0.226 [0.316]	-0.229 [0.319]
Coalition Government at the Centre and same party is in Power at state level or ally (*Clal_dum*)	-1.685 [0.525]***	-1.791 [0.501]***	-1.809 [0.501]***	-1.822 [0.502]***	-1.859 [0.509]***
Constant	-9.635 [2.443]***	-7.185 [2.002]***	-7.340 [1.995]***	-7.283 [2.006]***	-7.548 [2.053]***
Wald χ^2(.)	35.14 [Pr.=0.0001]	25.97 [Pr.=0.004]	26.84 [Pr.=0.00]	28.00 [Pr.=0.002]	32.26 [Pr.=0.0004]
Hausman Test	χ^2=7.15 [Pr.=0.622]	χ^2=10.51 [Pr.=0.311]	χ^2=4.46 [Pr.=0.878]	χ^2=2.57 [Pr.=0.979]	χ^2=1.38 [Pr.=0.998]
No. of Obs.	434	433	434	433	434

Note- Coefficients from random effect Logit regressions. Robust Standard errors are in bracket. ***, **, * Significant at 1%, 5% and 10% level respectively. Column 3 and 5 has hausman test of suest type.

Table b (iii): Effect of Tax Devolution on winning possibility of the incumbent

Dependent Var.: Victory	1	2	3	4	5
Tax Devolution (Td)	0.012 [0.005]***		-	-	-
Td (Year Before to the Election)	-	0.001 [0.003]		-	-
Td (Year of Election)	-	-	0.002 [0.003]		-
Opportunistic Manipulation of *Td* (Year before to Election)	-	-	-	0.020 [0.016]	-
Opportunistic Manipulation of *Td* (Year of Election)	-	-	-	-	0.009 [0.019]
Gross State Domestic Product (*Gsdp*)	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]
Inflation (Infs)	-0.009 [0.004]**	-0.008 [0.005]*	-0.009 [0.005]**	-0.010 [0.029]**	-0.010 [0.005]*
Density	-0.000 [0.000]	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]**	0.001 [0.000]**
Voter Turnout (Turnout in %)	0.011 [0.003]***	0.010 [0.003]***	0.010 [0.003]***	0.007 [0.003]***	0.011 [0.003]***
No. of Years Party is in Power (Nypp)	0.000 [0.002]	-0.001 [0.002]	0.000 [0.002]	-0.001 [0.002]	0.000 [0.002]
Ideology (Pidum)	-0.032 [0.031]	-0.038 [0.032]	-0.039 [0.032]	-0.022 [0.031]	-0.042 [0.032]
Same Ruling party at the state or allied (Allied)	0.225 [0.072]***	0.232 [0.073]***	0.230 [0.072]***	0.234 [0.074]***	0.229 [0.072]***

Coalition Government at state level (*Cldum*)	-0.057 [0.057]	-0.065 [0.057]	-0.065 [0.057]	-0.056 [0.058]	-0.065 [0.057]
Coalition Government at the Centre and same party is in Power at state level or ally (*Clal_dm*)	-0.235 [0.079]***	-0.258 [0.079]***	-0.258 [0.079]***	-0.257 [0.081]***	-0.258 [0.079]***
Constant	-0.471 [0.233]	-0.295 [0.230]	-0.302 [0.230]	-0.103 [0.196]	-0.352 [0.248]
Wald $\chi^2(.)$	34.56 [Pr.=0.0001]	27.95 [Pr.=0.002]	28.66 [Pr.=0.0014]	26.17 [Pr.=0.004]	29.53 [Pr.=0.001]
Hausman Test	χ^2=2.72 [Pr.=0.974]	χ^2=2.97 [Pr.=0.965]	χ^2=1.53 [Pr.=0.997]	χ^2=5.67 [Pr.=0.772]	χ^2=1.69 [Pr.=0.995]
No. of Obs.	434	433	434	433	434

Note- Coefficients from random effect Logit regressions. Robust Standard errors are in bracket. ***, **, * Significant at 1%, 5% and 10% level respectively.