



Munich Personal RePEc Archive

Center-State Political Transfer Cycles in India

Manjhi, Ganesh and Keswani Mehra, Meeta

Centre for International Trade and Development, Jawaharlal Nehru University

10 April 2016

Online at <https://mpra.ub.uni-muenchen.de/70784/>

MPRA Paper No. 70784, posted 19 Apr 2016 02:56 UTC

Center-State Political Transfer Cycles in India^{*}

Ganesh Manjhi[†]

Meeta Keswani Mehra[‡]

Date: April 10, 2016

** Acknowledgement:* We are very thankful to the participants at IIT Delhi workshop on “Summer conference in Economics: Theory Meets Empirics-2016” for invaluable comments. We would like to thank Prof. Poonam Gupta and Mr. Honey Karun for timely help for the data. We are also very thankful to Dr. Abhijit Sen Gupta for his always ready-to-help approach anytime that we wanted it.

[†] Assistant Professor, Gargi College, Delhi University and Research Scholar, Centre for International Trade and Development, School of International Studies, Jawaharlal Nehru University, New Delhi-110067. Email: ganeshtrx@gmail.com

[‡] Professor of Economics, Centre for International Trade and Development, Jawaharlal Nehru University, New Delhi-110067. Email: meetakm@mail.jnu.ac.in

Abstract

This paper attempts to answer two basic questions -- first, whether an election affects the transfers to the states through different component heads such as - grants from the center, loan from the center, finance commission transfer and grants in aids. Secondly, whether different transfer variables and the characteristics of the incumbent government will be able to create the possibility of retaining the power? Using the Arellano-Bond dynamic panel-data estimation methods (GMM) on a balanced panel data from 1980-2010 for 16 Indian states, we find that the right wing and coalition government is less likely to transfer the resources to the states. However, the state level ruling party which is either the same party at the center or ally get more transfers from the center than a non-coalition ruling party. Unlike the political budget cycles in the most literatures, the political transfer cycle is visible in the post-election period, which supports the possibility that while the announcements and promises are made before the election, the actual realization is observed only after the election. This may also be on account of attracting votes in the legislative assembly elections at the state level. The paper is extended to the logit and probit specifications of the model. It is found that; higher voters' turnout in the state is more likely to win the election. Further, inflation reduces the possibility of winning the election, whereas more experienced government has a higher probability of winning the election. Moreover, our result also show that, the right wing government is more likely to win the election as they also behave more opportunistically and the coalition government where states are its allies lowers the possibility of winning the election.

JEL Classification: 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 political budget cycle, which asserts 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, we can call it the center-state political transfer cycle (PTC) and pose the question --whether the national incumbent government can strategically transfer the resources? Also, whether by transferring the resources she/ he can increase the chances of winning the election and form the government?

Since, the publication of the seminal paper by Nordhaus (1975), the literature on political business cycle has been enriched considerably. Nordhaus (1975) considered an opportunistic pre-electoral manipulation of economic policies (that is, 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 policy makers, popularly known as partisan cycles. In fact, a large part of the literature on PBC covers the analysis where an incumbent is either opportunist or partisan under two alternative situations of adaptive and rational expectation of citizen voters. It is also quite possible that an incumbent can act as an opportunist prior to election and work otherwise after winning the election to meet partisan goals (Frey and Schneider, 1978).

From Nordhaus (1975), the brief forty years history of political business cycle moved on to political budget cycle (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 work 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), Aidt, Veiga and Veiga (2011) and Manjhi and Mehra (2016). 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

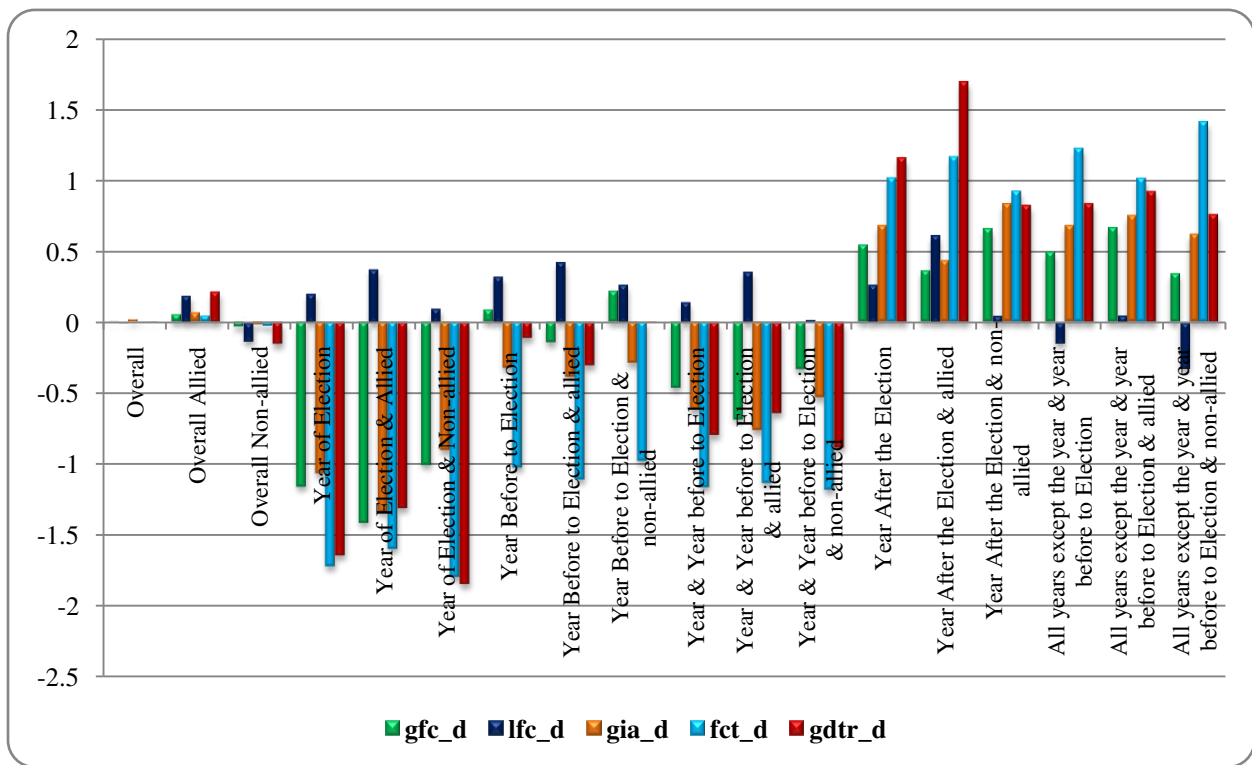
assign lower priority to the investment expenditure, and thus increase the chances of winning the election. The remaining papers obtain similar results, though Persson and Tabellini (1990) add the concept of competency in its analysis, whereas Aidt, Veiga and Veiga (2011) analyze that incumbent signals its competency by spending more on visible public goods a year before to election to gain the voting support. Aidt, Veiga and Veiga (2011) also derive that a lower victory margin in the last election makes the incumbent more opportunists in the current period. 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 of producing public goods without raising taxes. 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. Hence, opportunism is good for incumbent to win the election but costly for the economy as a whole.

There also exist empirical literatures on the subject. Shi and Svensson (2002b) used a panel of 123 countries for a period of 1975-1995 and find some evidence of PBC among developing countries whereas Alesina et. al. (1997) find evidence of these cycles on the 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 PBC only in new democracies. Efthyvoulou (2012) finds a stronger evidence of PBC among the European Union countries as compared to those who are not yet the part of the union of European countries over the period 1997-2008.

Since, the focus of our analysis is the center-state transfer of funds, a discussion on some studies in this regard is in order. Kroth (2012) used a panel dataset of 9 provinces of Africa over the period 1995-2010 and derived two important results. First, provinces where the national ruling party faces greater electoral competition receive higher per capita transfers in the year before an election. Second, this increase is driven by the conditional grant, which is the non-formula-based component of the total inter-governmental transfer. Khemani (2004), shows that the electoral

budget cycle affects 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 that they manipulate individual budget items and public investment 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 (2003) bring descriptive evidence of a significant increase of investments prior to elections in local governments in Colombia, an increase which is only partially compensated by a decrease in government consumption. 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 these. Sengupta (2011) states that federal welfare may actually increase with politically motivated transfers and the state ruled by the same government as the center transfer more grants to the favorite province and hence more public good.

Figure 1: Deviation transfers in different years in the tenure



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

The prime motivation underlying this work is the observed announcements of transfer packages and actual transfers operated by the centre to the states prior to and after the elections in Indian federal structure. Figure 1 depicts these transfers in an opportunistic form for different years (namely, all years, year of election, year before election, year and year before election, year after election, non-election years) in the electoral tenure. The opportunistic transfers have also been shown in the specific context where the state-level ruling party is an ally of the center and also when it is not allied. Some interesting points to note are --- on the aggregate, the allied state ruling party gets higher transfers from the center (Arulampalam et. al., 2009). They find that a state which is both aligned and swing in the last state election is estimated to receive 16% higher transfers than a state which is unaligned and non-swing. Further, the year of election and the year before the election always exhibit lower transfers to the states irrespective of whether the state party is allied or non-allied. Contrary to the common belief on PBC, where fiscal policy is expansionary one year prior to election, Figure 1, states that year of election and year before to election has relatively less transfers than the non-election years (that is, except the year of election and year before). The only variable that has a different behavior is Loan from the center (*Lfc*). The *Lfc* is always deviated positively from the average; particularly for year before to the election and to the allied. However, *Lfc* has negatively deviated (less relative transfer) to the non-allied overall and less transfers in the non-election years.

An additional motivation for undertaking this work is that, so far, a bulk of research has been done for the advanced economies and not much for developing 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 tax. However, hardly any of the work refers to the center-state political transfer cycles as this research that is attempted for India. In this respect, this study fills an important gap in the literature. This study is also interesting in the sense that it analyzes, in the context of widespread prevalence of caste and religion based politics in the country, whether transfers are an important determinant of the electoral outcomes? Figure 1 provides an indication of presence of opportunistic behaviour of politicians, particularly for the

allied parties at the state level.⁴ It can be seen that the opportunistic transfer is more to the allied than otherwise in the year of election and one year before to election.

Here, we focus on the center-state political transfer cycles (PTC), a concept similar to that of PBC. In general, fiscal variables in a federal context can be expected to follow an expansionary trend before the election. However, as can be seen in Figure 1, the structure of cycles tends to differ in case of centre-state transfers unlike the other fiscal variables. 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 party in the state is in the alliance of the centre or not?

The remaining sections are as follows. Section 2 covers a brief description of the Indian federal structure. The data and methods as well as the tracing of the PTC are presented in Section 3. Section 4, discussed the key results. Finally Section 5 concludes as well as prescribes the policy recommendations.

2. Structure of the Fiscal Federalism in India

The structure of the Indian federalism comprises three tiers – center, state and panchayat/municipality. In the Constitution of India, the Union of India has been discussed much more, notwithstanding that it has a connotation similar to the federal structure. On several occasions, states have sought for higher autonomy, but the center has tried to maintain its supremacy. The panchayati raj system was just a utopian concept of “gram sabha (village councils) as the highest” (concept of gram swaraj) visualized by Mahatma Gandhi before independence, which could never actually took shape in reality. Effectively, center has always maintained the supreme authority in most of the decision making process even in the defined power structure. In fact, in some cases, center has gone to amend the constitution as well to move items from the state list to the concurrent list and thus increase the center’s share of spending (Gulati and George, 1985).

Also, as one move into the neo-classical liberal framework of economic development, most countries, such as China, Brazil, Argentina and Russia, are moving towards a federal structure of centripetal kind, whereas some big federations, such as Canada, United States and Australia are

⁴ Opportunism =(Reference year value-Average of the remaining four years in a tenure)

more of a centrifugal type. India seems to have commonality with the former group. India has shifted from a centralized quasi-federation to a co-operative and competitive structure of the center-state power relationship down the line. The first three decades after independence till the late 1980s can be traced as phase of the centralized federation in India. Later, the post reform era is broadly known as that of cooperative-cum-competitive federation. This phenomenon is supported by the idea of a coalitional structure of the government as well, which came into existence effectively in the early 1990s. That is, the state government that happens to be an ally of the central government would mostly co-operate whereas; the non-allied ones would tend to compete. Thus, it would be interesting to analyze whether the center's coalitional allies at the state is allied opportunistically or on partisanship basis (not covered explicitly).

This paper attempts to analyze whether, in the federal structure, transfers under various heads to the states have been operated opportunistically by the central government or not? That is, whether there is expansion in the transfer from the center to the states prior to the election or not? Also, whether the opportunistically created transfer cycles impact the electoral outcome at the center?

3. Tracing the Political Transfer Cycle

3.1. Data and Methods

We utilize a balanced panel of the 16 Indian states, excluding the newly born states such as Jharkhand, Chhattisgarh and Uttarakhand, as well as some additional states where regular elections did not take place, namely, Arunachal Pradesh, Goa, Mizoram, Jammu and Kashmir. Also, except Assam North-East states are dropped from the sample. The PTC model relies on the Arellano-Bond dynamic panel-data estimation methods of estimating the equation by taking the sample data from 1980 to 2010. The election data have been taken from the *Election Commission of India* and from *myneta.info*. The fiscal variables have been taken from the *Reserve Bank of India* and the *Ministry of Finance, Government of India*.

The interesting question to be posed here is whether and how centre-state fiscal transfers will be affecting the national level election outcomes. The national level election (general election) can be influenced by transfers operated from the center to states on account of wooing the voters one year prior to election. The focus of the paper is on transfers of resources from center to state

through various means, such as grants from the center (*Gfc*), loan from the center (*Lfc*), grants in aids (*Gia*), finance commission transfer (*Fct*) and gross devolution and transfer of resources from the center (*Gd_tr*). The key question for which an answer is sought is whether these fiscal variables are electorally motivated?

Based on the method by Klomp and Haan (2013), we are first interested in analyzing whether fiscal decisions by the incumbent are affected by the election year or the year before the election. Following Klomp and Haan (2013), the structure of the equation is postulated to be:

$$Tv_{it} = \pi_0 Tv_{i(t-1)} + \pi_1 Tv_{i(t-2)} + \pi_2 Pi_dum_{it} + \pi_3 Cl_dum_{it} + \pi_4 Clal_Dum_{it} + \pi_5 Yr_bf_elect_{it} + \pi_6 Yr_af_elect_{it} + \pi_7 Yr_b_int2_{it} + \pi_8 Yr_a_int3_{it} + \pi_9 Density_{it} + \pi_{10} Nypp_{it} + \sigma_i + \tau_t + \vartheta_{it}, \quad (1)$$

where, Tv_{it} refers to the fiscal component which could be any of the following variables - grants from the center (*Gfc*), loan from the center (*Lfc*), grants in aids (*Gia*), finance commission transfer (*Fct*) and gross devolution and transfer of resources from the center (*Gd_tr*). The variables $Tv_{i(t-1)}$ and $Tv_{i(t-2)}$ are the lagged dependent variable, which is expected to affect the dependent variable auto-regressively, so we expect $\pi_0 > 0$, $\pi_1 > 0$. The binary variable $Pi_Dum = 1$, if the incumbent is of right wing and 0 otherwise. Similarly, $Cl_Dum = 1$ if the incumbent government is a coalition and is 0 otherwise. The right wing government is mostly expected to behave opportunistically, hence they will speak more often about the transfers through media and different mode of adverts but actual transfers will be less and will tend to transfer less to the states irrespective of whether the state is its ally or not. In fact, the announcement of Rs. 1.65 lakh crore by the current NDA government prior to 2015 assembly election in Bihar is the close example of such opportunistic behavior, which latter been declined by the cental government after losing the election.⁵ Hence Pi_Dum is expected to be $\pi_2 < 0$. Similarly, if there is a coalition government at the centre, each coalition members will work in its own and the regions' interest, and hence the government will not be able to work with its full efficiency; so, $\pi_3 < 0$. The dummy variable $Clal_Dum = 1$, if the coalition government exists at

⁵ Announcement of package for Bihar on 18th August, 2015 and the assembly election in Bihar is on 29th November 2015. http://www.business-standard.com/article/elections/modi-announces-rs-1-25-lakh-crore-package-for-poll-bound-bihar-115081801022_1.html

the center and state level ruling party is the same party as center or allied to the central government and will be 1 otherwise; we expect that $\pi_4 > 0$. Some more binary variables are $Yr_bf_elect = 1$ if it's a year before election and 0 otherwise and $Yr_af_elect = 1$, if it is a year after election and 0 otherwise. Consequently, $\pi_5 > 0$ and $\pi_6 < 0$. In some of the cases one might observe the year after election effect as well; so, the possibility of $\pi_6 > 0$ can not be ignored. The two additional dummies that are considered are denoted by $Yr_b_int2 = 1$, if there is coalition government at the center, the state ruling party is the partner and it is the year before the election and 0 otherwise, and $Yr_a_int3 = 1$, if there is coalition government at the center, state ruling party is the partner and year after election and 0, otherwise. We expect that, $\pi_7 > 0$ and $\pi_8 < 0$. A higher density of population tends to entail more state-level spending; (as population itself is one of the criteria of transfers from the center), implying $\pi_9 > 0$. The higher the number of years of experience, the better the government will be to able to handle the finances transferred and manage the budgetary balance, such that $\pi_{10} > 0$.

Eq. (1) has been estimated to see whether and how different variants of fiscal transfers are affected by the independent variables including the election years. Notably, the PTC has been captured by the difference between the estimated error term of the Eq. (1) without the election dummy variables (both year before and after the election) and the error term with these election variables now included in the estimation. The pattern of the state wise transfer cycles are shown in the diagrams included in Appendix A.

3.2. Results

Table 1 presents the basic descriptive statistics for all the transfer variables in level as well as in the deviation form.⁶ Apart from this, the section compiles the basic statistics for some other variables, namely, Inflation (*Infs*), *Density*, political ideology (*Pi_Dum*) and Coalition binary (*Cl_Dum*). India has experienced around 7% inflation on an average during the analysis period (1980-2010), whereas in some cases, it goes as high as 53% at the state level and as low a level of deflation as -3.31%. In the post 1980 period, most of the time we have had a coalition government that has been ruled mostly by a left-of-the-centre government.

⁶ This is the opportunistic deviation as defined earlier.

The results of the estimation are shown in Table 2. Since, we are expecting auto-regressive transfer variables; therefore the inclusion of the lagged dependent variable was inevitable along with some pre-determined and binary variables. We have used the Arellano-Bond dynamic panel-data estimation method (a variant of the Generalized Method of Moments (GMM)). In our estimation, the dependent variable refers to different variants (components) of the fiscal transfers to the states by central government, namely, grants from the center (*Gfc*), loan from the center (*Lfc*), grants in aids (*Gia*), finance commission transfer (*Fct*) and gross devolution and transfer of resources from the center (*Gd_tr*), as also discussed earlier.

Table 1: Descriptive Statistics

Variables	Mean	Std.Dev	Min	Max
Gfc	12.68261	9.20856	2.81780	50.93946
Lfc	10.14599	7.17808	0.00886	39.08477
Gia	12.46436	8.99971	2.81780	50.89771
Fct	28.62757	13.43261	6.52570	71.57381
Gdtr	38.97560	15.30179	9.19105	86.41259
Gfc_d*	0.00177	3.15628	-15.33163	17.83400
Lfc_d*	0.00015	2.90740	-11.18330	11.22522
Gia_d*	0.01450	3.08781	-15.32674	17.85039
Fct_d*	0.00003	4.06405	-22.98479	18.78804
Gdtr_d*	0.00002	4.75703	-28.37362	18.49306
Infs	7.444023	4.817744	-3.31864	53.0634
Density	396.8215	243.1966	76.89545	1023.640
Cl_Dum	0.705645	0.456212	0.00000	1.0000
Pi_Dum	0.193548	0.395478	0.00000	1.0000

Note- all variables with ‘*’ is in opportunistic form.

We notice that the lagged dependent variables are highly significant in all the cases except the second-order lag for the finance commission transfer. Two prominent results which are as expected and significant across the transfer variables are *Pi_Dum* and *Cl_Dum*. That is, a right wing government exhibits the tendency to transfer less to the states. Similarly, the coalition government also generally transfers less to the states because, in a country like India, central government functions under various political constraints and that might not be favorable for the

incumbent. However, if the state ruling party is the coalition partner ($Clal_Dum=1$) then the transfer is positive in all the cases, but is significant only with grants from the center and grants-in-aids. So, this points to the possibility of higher transfer as grants for the state ruling coalition partner from the center.

Unlike in a case of the normal budgetary cycle in fiscal deficit, we find a negative year before election effect in all but loan from the center (Lfc) and gross devolution and transfer of resources from the center (Gd_tr), where the coefficient is found to be positive. Loan from the center is positive and significant, whereas Gd_tr is positive but not significant. Since, loan has to be repaid back; it does not seem difficult to transfer the loan to the states before the election, whereas other variables such as Gfc , Gia and Fct are as per the finance commission's recommendations, where at most what the incumbent government can do is to announce the package before the election but the actual transfer takes place after the election.⁷ As we can see from Table 2, except in case of loan from the center (Lfc), all the variables are having positive and significant after the election coefficient. Thus, the after election effect appears to be very strong in terms of transfer.

Further, the interaction binary variables of coalition government at the center, year before election and state ruling party being the coalition partner is denoted by Yr_b_int2 . Similarly, the coalition government at the center, year after election and state ruling party being the coalition partner has been denoted by Yr_a_int3 . However, both Yr_b_int2 and Yr_a_int3 are found to be negative and insignificant, except in the equation for Lfc in the latter case. That is, a coalition government does not extend higher transfers even to the coalition partner around the election; however these two interactive binaries are not significant to be conclusive.

The remaining two variables are *Density* and number of years of experience of the party ($Nypp$), where higher density states will require more transfer and population will be one of the criteria for getting higher transfer given the Indian federal structure. Lfc is negative and significant whereas Gd_tr is negative but insignificant. The rest of the variables such as - gfc , gia and fct are positively transferred in the high density states but are not significant. Similarly, $Nypp$ is positive

⁷ Announcement of Rs. 1.65 lakh crore package for Bihar on 18th August, 2015 and the assembly election in Bihar is on 29th November 2015. http://www.business-standard.com/article/elections/modi-announces-rs-1-25-lakh-crore-package-for-poll-bound-bihar-115081801022_1.html

and significant in case of *gfc*, *gia* and *fct* but negative in *Lfc* and *Gd_tr*. It is significant only in the case of *Lfc* that is, more experienced government will be properly managing the *gfc*, *gia* and *fct* but will consistently discourage the state to get loans from the center may be because of its repayment obligations.

Table 2: Dependent variables are different components of transfers

Variables	Gfc	Lfc	Gia	Fct	Gd_tr
	(1)	(2)	(3)	(4)	(5)
Dep.var(-1)	0.391 [8.10]***	0.483 [10.5]***	0.395 [8.19]***	0.455 [9.46]***	0.428 [9.23]***
Dep.var(-2)	0.120 [2.57]***	0.221 [4.81]***	0.100 [2.10]**	0.013 [0.29]	0.177 [3.89]***
Pi_dum	-1.186 [-1.74]*	-2.256 [-2.92]***	-1.222 [-1.78]**	-3.235 [-3.54]***	-5.548 [-4.65]***
Cldum	-1.099 [-2.31]**	-1.570 [-2.85]***	-1.248 [-2.62]***	-1.079 [-1.70]*	-2.649 [-3.19]***
Clal_Dum	0.856 [1.68]*	0.426 [0.72]	1.031 [2.02]**	0.324 [0.48]	0.596 [0.69]
Yr_bf_elect	-0.131 [-0.37]	1.660 [3.94]***	-0.560 [-1.56]	-1.579 [-3.30]***	0.619 [1.00]
Yr_af_elect	1.002 [2.67]***	-0.194 [-0.44]	1.310 [3.49]***	2.590 [5.19]***	1.517 [2.34]**
Yr_b_int2	-0.508 [-0.65]	-0.482 [-0.54]	-0.461 [-0.59]	0.876 [0.86]	0.073 [0.06]
Yr_a_int3	0.253 [0.34]	-1.799 [-2.09]**	-0.113 [-0.15]	-0.493 [-0.51]	-1.608 [-1.27]
Density	0.004 [1.28]	-0.013 [-2.88]***	0.003 [0.76]	0.014 [2.82]***	-0.004 [-0.58]
Nypp	0.025 [1.59]	-0.045 [-2.39]**	0.016 [0.97]	0.023 [1.10]	-0.034 [-1.20]
#Obs.	448	448	448	448	448
Wald chi2(13)	252.37	1352.69	221.54	318.75	630.27
Sargan Test Chi2(371)	402.68 [0.124]	394.08 [0.196]	404.61 [0.110]	395.38 [0.184]	371.08 [0.488]

***, **, * Significant at 1%, 5% and 10% respectively (z-statistics in the parenthesis). Sargan Test- H0: overidentifying restrictions are valid (p-values in the parentheses).

To trace the transfer cycle graphically, we estimated the above equation without the election year dummies (for year before and after the election) and another equation with these election years included. The residuals of the two estimates have been correspondingly subtracted to get the

transfers cycles. The resulting graph as cycles has been shown in Figures 1a to 1e in appendix A. The graph displays a pattern similar to what the empirical results suggest.

4. Effect of Transfers on Electoral Outcome

Using the same dataset as above, again for 16 states, covering the general elections in India spanning the period 1980 to 2010, we attempted to estimate the equation of electoral outcome. We take different transfer variables as the independent variable along with other binary and exogenous variables.

4.1. Method of Estimation

The equation that follows is a binary variable where the victory of the incumbent is defined state wise. The binary variable has been defined in the following way:

$$El_Outcome = \begin{cases} 1, & \text{if } \frac{\text{Seats Won by Incumbent} - \text{Seats Won by Opponent}}{\text{Total Parliamentary Seats at the State}} > 0 \\ 0, & \text{Otherwise} \end{cases}$$

The estimable form of equation in the logit and probit framework is as follows:

$$El_Outcome = \Gamma_0(Transfers)_{it} + \Gamma_1(Opp_tran * Yr_bf_Elect)_{it} + \Gamma_2(Opp_tran * Yr_af_Elect)_{it} + \delta_1 Turnit + \delta_2 Infit + \delta_3 Pi_Dumit + \delta_4 Cl_Dum_{it} + \delta_5 Clal_Dum_{it} + \delta_6 Density + \delta_7 Nypp + \theta_i + \gamma_t + \varepsilon_{it},$$

(2)
 where, $i = 1, 2, 3, \dots, 16$, indicates the index of states and t indicate the times series in years. The equation includes state fixed effects (θ_i) and election year fixed effects (γ_t). The random variable is ε_{it} which is assumed as $E(\varepsilon_{it})=0$. Our prime objective is to estimate the equation for electoral outcome ($El_Outcome$), where the dependent variable ($El_Outcome$) is defined as the state wise win-margin of the national level election from the incumbent versus the opponent. $Transfers$ variable has been used to denote as gfc , lfc , gia , fct and Gd_tr , each in 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 variable $Opp_tran * Yr_bf_Elect$ is the interaction term of the opportunistic transfers of each type and year before election and $Opp_tran * Yr_af_Elect$ is the interaction term of the opportunistic transfers and year after the

election. Generally, a higher voter turnout is expected to boot out the incumbent, but the sign of this variable can be expected to be ambiguous; that is $\delta_1 \geq 0$. A higher inflation will tend to have a negative effect on the general election, hence $\delta_2 < 0$. In case of the right wing government, $Pi_Dum = 1$, will tend to be more opportunist, and hence the possibility of winning the election will be higher; that is, $\delta_3 > 0$. The coalition government $Cl_Dum = 1$ is always difficult to carry forward in India; hence we can have ambiguous expected sign $\delta_4 \geq 0$. However, the coalition government where the state ruling party is its ally can have a higher probability of winning the election, and the expected sign of the variable $Clal_Dum$, will be positive; that is, $\delta_5 > 0$. A higher level of the *Density* at the states level and more experienced (*Nypp*) the incumbent government is, there is higher possibility of winning the election because a higher density population can be mobilized faster through various means of advertisement about the transfers and more experience government can better handle the management. Therefore, $\delta_6 > 0$ and $\delta_7 > 0$.

Results

Table a(i) to a(v) report the results of the regression where the dependent variable is a binary of victory (difference between the seats won by incumbent and seats won by opponent divided by the total number of parliamentary seats in the state), and the remaining variables have been used as the independent variables. Tables a(i) to a(v) respectively present the estimation results for the following transfer variables – *Gfc*, *Lfc*, *Gia*, *Fct* and *Gd_tr*. The results in Table a(i) suggest that a higher turnout creates a more likely situation for an incumbent to win the election, whereas inflation is found to be costly for the incumbent in terms of losing the election. In fact, inflation caused by basic food items, such as increased onion prices indeed brought tears in Delhi assembly election for the incumbent BJP in 1998 when they lost the power to Congress. For much the same reason congress hardly manage to retain the power in 2010 election. The *Density* and *Gfc* are found to be negative but not significant; that is, higher population density and grants do not guarantee a likely victory by the incumbent. Unlike the expected effect, the variable *Gfc* in the year before to the election is less likely to, while post election year is more likely to win the election, albeit both are found to be insignificant explanatory variables. So, effectively, the year before election grants is not *de facto* politically driven; rather it's quite possible that the announcement and promise might have been done before the election but actual realizations are

observed only after the election. An opportunistic manipulation prior to election is more likely to win the election and less likely in the post election, but not found significant in case of both. Though, in most of the cases, a rightwing incumbent has a higher likelihood of winning the election, while a coalition incumbent runs a lower likelihood of the same. The state ruling party who is also the allied to the central government is less likely to win the election.

In fact, the variables which are consistently having the same effect across the results are percentage of voters' *turnout*, *inflation*, *density*, *Nypp*, *Pi-Dum*, *Cl_Dum* and *Clal_dum*. Results are different only with respect to the different variants of the transfer variables included in the regression. Table a(ii) provides the effect of loan from the center. Loan from the center negatively affects the possibility of victory, and hence *Lfc* is less likely to help the incumbent to win the election, albeit post-election it is more likely to help the win but has an insignificant effect. The opportunistic manipulation of the *Lfc* prior to election is less likely to win the election, whereas post election it is more likely to help the win. It means, as in previous case of *Gfc* in Table a(i), *Lfc* has been announced or promised before the election but *de facto* it is implemented after the election.

Grants in aids in Table a(iii) depict similar effects as grants from the center. That is, level of *Gia* is less likely to win the election for the incumbent, however it is not found to be significant. Similarly, the year before election grant is less likely to win the election. However, post-election level values and the year before the election opportunistic manipulations of *Gia* are more likely to win the election, though these are also not found to be significant variables. The year after election opportunistic manipulations of *Gia* is also not significant.

Finance commission transfer, as shown in Table a(iv), are less likely to win the election for the incumbent, however, again it is not significant. The most interesting finding here is a PTC in *Fct*. That is opportunistic manipulation of *Fct* year before the election is likely to win the election for the incumbent and this is highly significant. Unlike the other variables, such as *Gfc*, *Lfc*, and *Gia*, the year after election opportunism of *Fct* is less likely to win the election though it is not significant.

Gross devolution and transfer of resources from the center has more likely to win the election though it is not significant. Also the opportunism around the election period is more likely to win the election but it is not significant.

5. Conclusion

The transfer components are mostly explained itself auto-regressively. A right wing and coalition government is less likely to transfer the resources to the states. However, a state ruling party which is also a coalition partner is likely to get more transfer from the center. Justifying the post election PTC is quite challenging that too when the pre-electoral fiscal expansion budget cycle is dominant in the literature. That is, in most cases, unlike a distinct political budget cycle (PBC)⁸, the PTC traces cycle year after the election. In fact, the outcomes in case of the PTC are different from the conventional PBC. Specifically, we find that there is post-election budget cycle, which signifies the possibility that while the announcements and promises are made before the election, the actual realization (or operation of transfer) is observed immediately after the election.

In the second part of the paper, in the logit and probit specification of the model, we find that a higher voters' turnout in the state is more likely to win the election. Inflation reduces the possibility of winning the election, whereas a more experienced government has higher probability of winning the election. Similarly, a right wing 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 opportunistic pre-electoral expansion of the finance commission transfer is the only factor which increases the possibility of winning the election for the incumbent government. The remaining transfer variables such as *Gfc*, *Lfc*, *Gia*, *Gdtr* are mostly affecting positively during the election though not significant.

⁸ This is analyzed in another paper by the authors.

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., Roubini, N. and G. D. Cohen, (1997), "Political Cycles and the Macroeconomy", Cambridge: MIT Press.
- Alesina, A., and M. Paridisi, 2014, "Political Budget Cycles: Evidence from the Italian Cities", NBER Working Paper 20570
- Bagchi, A. (2003), "Rethinking Federalism: Changing Power Relations between the center and the States", *Publius*, Vol. 33, No.04, Emerging Federal Process in India, pp.21-42.
- 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
- Brender, A. and Drazen, A. (2005), "Political Budget Cycles in New versus Established Democracies." NBER Working Paper 10539
- Brender, A. and A. Drazen, 2013. "Elections, Leaders, and the Composition of Government Spending", *Journal of Public Economics*, Vo. 97, Issue-1, 18-31
- Chakraborty, Pinaki. 2003. "Unequal Fiscal Capacities Across India States: How Corrective is the Fiscal Transfer Mechanism?" National Institute of Public Finance and Policy, mimeo
- 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 M. Eslava, 2010. "Electoral manipulation via expenditure composition: theory and evidence", *Journal of Development Economics*, 92, 39-52.
- Efthyvoulou, G. (2012), "Political Budget Cycles in the European Union and the impact of political pressures", *Public Choice*, Vol. 153, pp. 295-327.
- Hibbs, D. (1977). Political Parties and Macroeconomic Policy. *American Political Science Review*. Vol. 71, No. 4, pp. 1467-1487.
- 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.

- Frey, B. S. and F. Schneider, 1978. "A Politico-Economic Model of the United Kingdom", *The Economic Journal*, Vol. 80, No. 350, pp. 243-253.
- Kneebone, R. and K. McKenzie (2001), "Electoral and Partisan Cycles in Fiscal Policy: An Examination of Canadian Provinces," *International Tax and Public Finance*, Vol. 8, pp. 753-774.
- Klomp, J and J. de Haan (2013), "Political budget cycle and election outcomes", *Public Choice*, Vol. 157, pp. 245-267.
- 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
- Lalvani, M. (1999), "Elections and Macropolicy Signals: Political Budget Cycle Hypothesis", *Economic and Political Weekly*, Vol. 34, No. 37, pp. 2676-2681.
- Lalvani, M. (2008), "Demonstrating a 'New Political Budget Cycle'", *Economic and Political Weekly*, Vol. 43, No. 15, pp. 25-28.
- Manjhi, G and M.K. Mehra, (2016), "Dynamics of Political Budget Cycle", NIPFP Working Paper, no. 163.
- Nordhaus, W. (1975), "The Political Business Cycle," *Review of Economic Studies*, Vol. 42, pp. 169-90.
- Persson, T. and G. Tabellini, (1990), "Macroeconomic Policy, Credibility, and Politics", London: Hardwood Academy Publishers.
- Persson, T. and G. Tabellini, (2000), "Political Economics, Explaining Economic Policy, Cambridge, MA: The MIT Press.
- Persson, T. and G. Tabellini, (2003) Do Electoral Cycles differ across Political Systems? *CEPR Working Paper Series*, No. 232.
- 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*, 80, pp. 21-36.
- Rogoff, K. and A. Sibert (1988), "Elections and macroeconomic policy cycles", *Review of Economics Studies*, 55, 1-16.

- Sen, K. and R. R. Vaidya (1996), “Political Budget Cycles in India”, *Economic and Political Weekly*, Vol. 31, No. 30, pp. 2023-2027.
- 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.
- Shi, M. and J. Svensson (2002a), “Political budget cycles in developed and developing countries” (mimeo), Development Research Group, World Bank.
- Shi, M. and J. Svensson(2002b), “Conditional political budget cycles” (mimeo), Development Research Group, World Bank
- Shi, M. And J. Svensson (2006), “Political budget cycles: do they differ across countries and why?” *Journal of Public Economics*, 90, 1367–1389.

Appendix A

Table A1: Variables and Data Definitions

Variables	Data Sources	Definitions and Details
Grants from the Center (<i>Gfc</i>)	1980-2010 Ministry of Finance, RBI	Grants given to states are one of the channel to transfer the fund processed through the Planning Commission
Loan from the Center (<i>Lfc</i>)	1980-2010 Ministry of Finance, RBI	Loan is also processed through the Planning commission. However, in this ca states are liable to pay back the loan.
Grants in Aids (<i>Gia</i>)	1980-2010 Ministry of Finance, RBI	This covers the assessed deficit on non-plan revenue account, after devolution of taxes and duties. I can also be recommended for the upgradation of the standard of administration of the states
Finance Commission Transfers (<i>Fct</i>)	1980-2010 Ministry of Finance, RBI	Finance Commission make transfer for various central sector and centrally sponsored schemes.
Gross Devolution and Transfer of Resources from Center (<i>Gdtr</i>)	1980-2010 Ministry of Finance, RBI	Devolution and other transfer of resources are done through the Finance Commission

Figure a(i): Grants from the Center (Gfc)

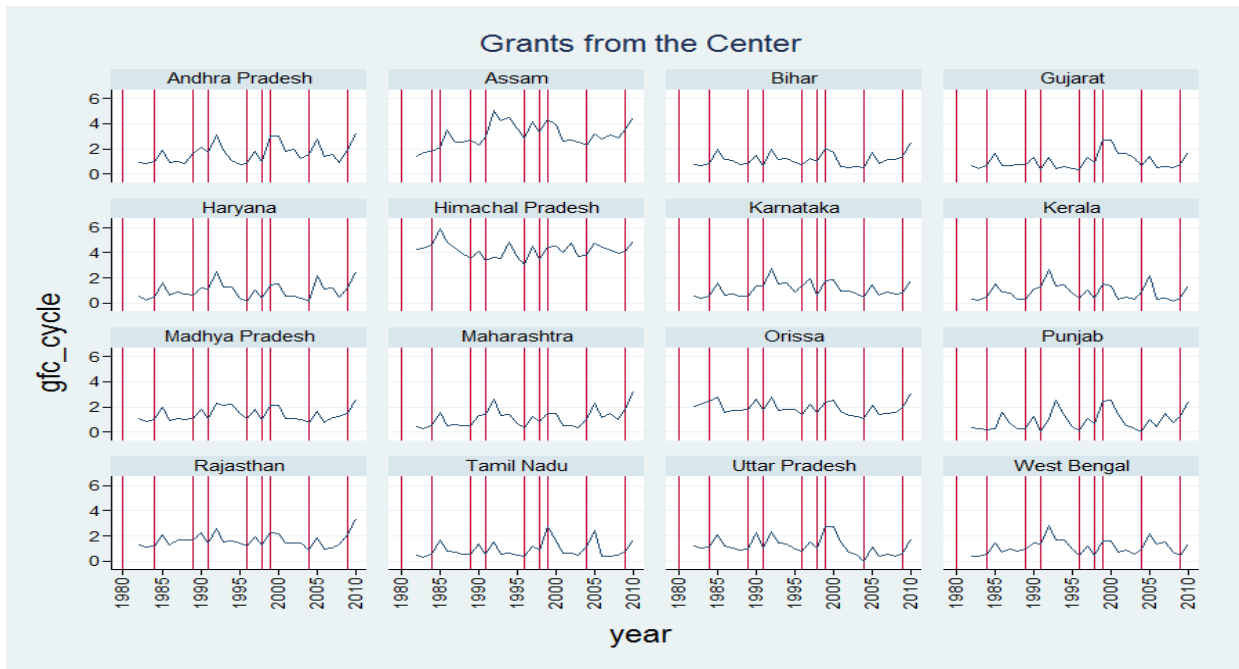


Figure a(ii): Loan from the Center (Lfc)

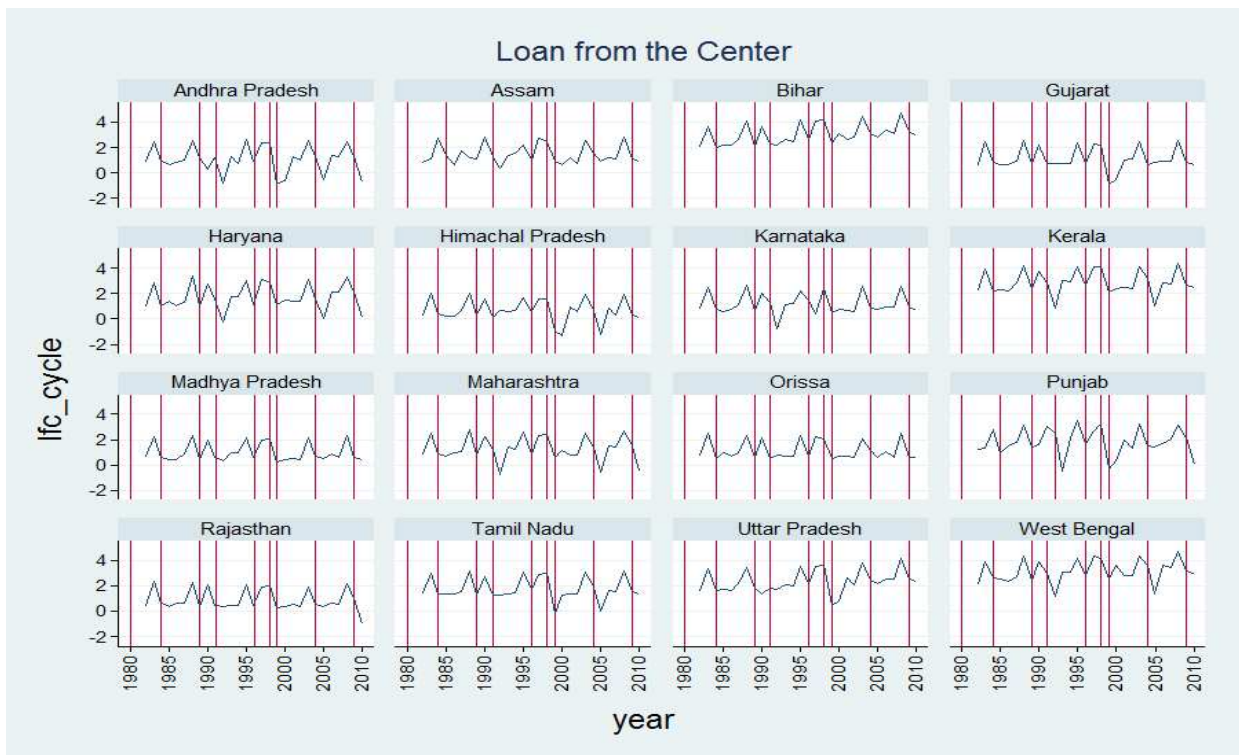


Figure a(iii): Grants in Aids (Gia)

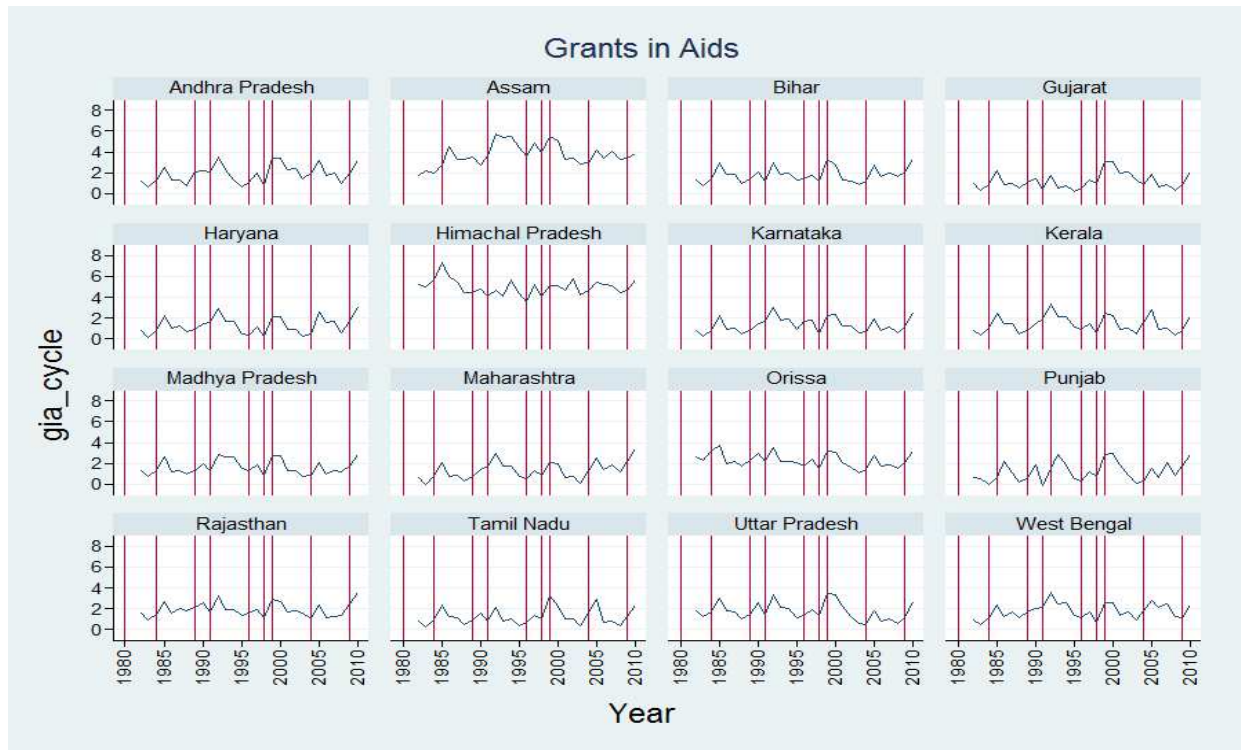


Figure a(iv): Finance Commission Transfer (Fct)

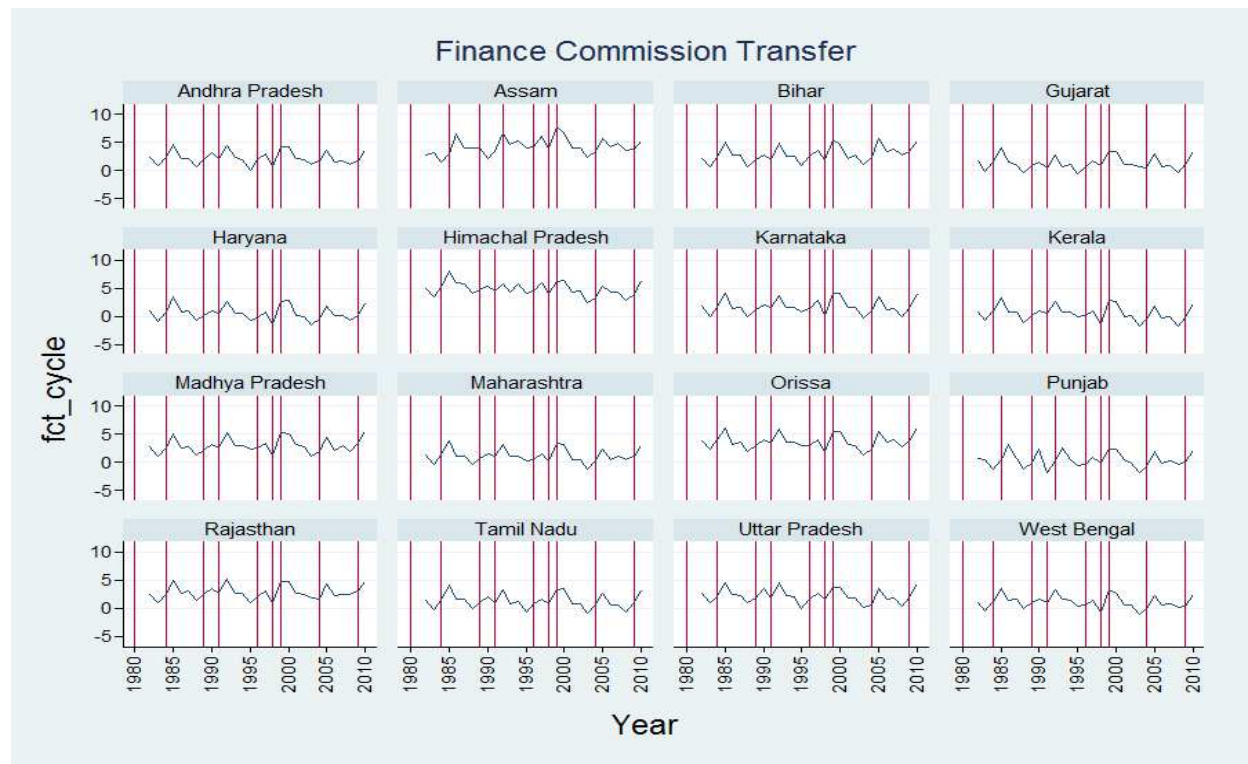


Figure a(v): Gross devolution and Transfer of Resources from the Center (Gd_tr)

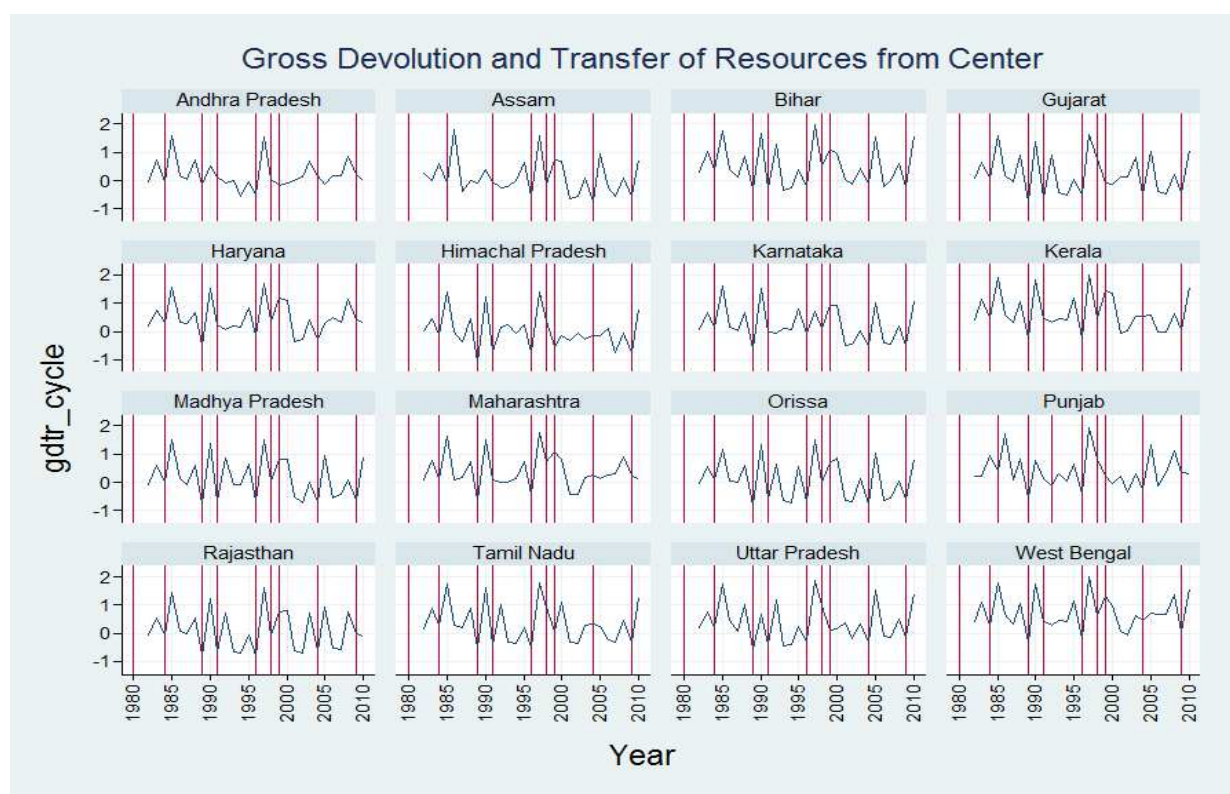


Table a(i): When Grants from the Center is one of the independent variables

Variables	Logit Model				Probit Model			
	1	2	3	4	5	6	7	8
Turnout	0.13 [4.57]***	0.13 [4.56]***	0.13 [4.56]***	0.13 [4.56]***	0.08 [4.74]***	0.08 [4.76]***	0.08 [4.72]***	0.08 [4.72]***
Infs	-0.08 [-2.90]***	-0.07 [-2.90]***	-0.07 [-2.90]***	-0.08 [-2.93]***	-0.05 [-2.99]***	-0.05 [-2.99]***	-0.05 [-2.99]***	-0.05 [-3.02]***
Density	-0.001 [-0.99]	-0.001 [-0.99]	-0.001 [-1.01]	-0.001 [-0.99]	-0.001 [-0.95]	-0.001 [-0.96]	-0.001 [-0.98]	-0.001 [-0.95]
Nypp	0.028 [2.53]**	0.03 [2.55]***	0.03 [2.53]**	0.03 [2.46]**	0.016 [2.54]**	0.017 [2.56]**	0.02 [2.55]**	0.02 [2.47]**
Gfc_ae	-0.008 [-0.35]	-0.01 [-0.43]	-0.01 [-0.42]	-0.01 [-0.34]	-0.005 [-0.37]	-0.006 [-0.44]	-0.01 [-0.45]	-0.005 [-0.36]
Gfc_ae_ybe	-0.006 [-0.45]	-	-	-	-0.004 [-0.40]	-	-	-
Gfc_ae_yae	-	0.002 [0.17]	-	-	-	0.001 [0.14]	-	-

Gfc_om_ybe	-	-	0.01 [0.12]	-	-	-	0.01 [0.15]	-
Gfc_om_yae	-	-	-	-0.01 [-0.14]	-	-	-	-0.01 [-0.14]
Pi_Dum	1.59 [3.31]***	1.60 [3.32]***	1.61 [3.27]***	1.58 [3.25]***	0.28 [3.38]***	0.95 [3.38]***	0.96 [3.34]***	0.94 [3.31]***
Cldum	-0.337 [-1.16]	-0.35 [-1.20]	-0.35 [-1.20]	-0.34 [-1.17]	0.17 [-1.16]	-0.21 [-1.19]	-0.21 [-1.19]	-0.20 [-1.16]
Cl_al	-0.85 [-2.91]***	-0.84 [-2.89]***	-0.84 [-2.89]***	-0.84 [-2.89]***	0.17 [-3.02]***	-0.53 [-3.0]***	-0.53 [-3.00]***	-0.53 [-3.00]***
Cons	-7.60 [-3.79]***	-7.59 [-3.78]***	-7.57 [-3.78]***	-7.60 [-3.77]***	1.16 [-3.88]	-4.50 [-3.87]***	-4.49 [-3.87]***	-4.51 [-3.86]***
#Obs	476	476	476	476	476	476	476	476
Wald Chi2(9)	54.95	54.88	54.83	54.87	60.67	60.51	60.45	60.51
LR Test	22.52	22.40	22.38	22.38	22.63	22.54	22.52	22.51

Note-Likelihood-ratio test of rho=0: chibar2 (01) Test. ***, **, * Significant at 1%, 5% and 10% respectively (z-statistics in the parentheses).

Table a(ii): When Loan from the Center is one of the independent variables

Variables	Logit Model				Probit Model			
	1	2	3	4	5	6	7	8
Turnout	0.13 [4.7]***	0.13 [4.55]***	0.13 [4.72]***	0.13 [4.53]***	0.08 [4.86]***	0.08 [4.76]***	0.08 [4.94]***	0.08 [4.70]***
Inf	-0.08 [-3.12]***	-0.08 [-3.00]***	-0.08 [-3.21]***	-0.08 [-3.03]***	-0.05 [-3.18]	-0.05 [-3.09]***	-0.05 [-3.31]***	-0.05 [-3.13]***
Density	-0.001 [-0.46]	-0.001 [-0.59]	-0.001 [-0.51]	-0.001 [-0.70]	-0.0003 [-0.46]	-0.001 [-0.60]	-0.0003 [-0.47]	-0.001 [-0.72]
Nypp	0.04 [3.08]***	0.04 [3.05]***	0.04 [3.16]***	0.03 [3.10]***	0.02 [3.08]***	0.02 [3.06]***	0.02 [3.22]***	0.02 [3.00]***
Lfc_ae	0.06 [2.43]**	0.04 [1.64]*	0.06 [2.75]***	0.03 [1.39]	0.035 [2.38]**	0.02 [1.57]	0.04 [2.77]***	0.02 [1.32]
Lfc_ae_ybe	-0.03 [-1.84]**	-	-	-	-0.02 [-1.84]**	-	-	-
Lfc_ae_yae	-	0.011 [0.60]	-	-	-	0.01 [0.63]	-	-
Lfc_om_ybe	-	-	-0.23 [-2.8]***	-	-	-	-0.14 [-2.97]***	-
Lfc_om_yae	-	-	-	0.17 [2.12]**	-	-	-	0.11 [2.21]**
Pi_Dum	1.95 [3.81]***	1.92 [3.77]***	1.96 [3.87]***	1.88 [3.73]***	1.14 [3.89]***	1.13 [3.83]	1.17 [3.97]***	1.12 [3.79]***
Cldum	-0.08 [-0.25]	-0.19 [-0.62]	-0.06 [-0.19]	-0.20 [-0.66]	-0.05 [-0.25]	-0.12 [-0.64]	-0.03 [-0.17]	-0.12 [-0.66]
Cl_al	-0.85 [-2.91]***	-0.83 [-2.84]***	-0.80 [-2.74]	-0.84 [-2.87]***	-0.53 [-3.00]***	-0.52 [-2.94]***	-0.50 [-2.84]***	-0.52 [-2.99]***
Cons	-8.96 [-4.41]***	-8.50 [-4.25]***	-8.98 [-4.48]***	-8.28 [-4.18]***	-5.30 [-4.52]***	-5.03 [-4.36]***	-5.43 [-4.65]***	-4.89 [-4.30]***

#Obs	476	476	476	476	476	476	476	476
Wald Chi2(9)	59.38	58.07	63.45	60.88	66.21	64.06	70.79	67.56
LR Test	26.99	25.16	27.93	24.94	27.18	25.21	28.70	25.09

Note-Likelihood-ratio test of rho=0: chibar2 (01) Test. ***, **, * Significant at 1%, 5% and 10% respectively (z-statistics in the parentheses).

Table a(iii): When Grants in Aids from the Center is one of the independent variables

Variables	Logit Model				Probit Model			
	1	2	3	4	5	6	7	8
Turnout	0.13 [4.58]***	0.13 [4.57]***	0.13 [4.58]***	0.14 [4.58]***	0.08 [4.73]***	0.08 [4.73]***	0.08 [4.74]	0.08 [4.74]***
Infs	-0.08 [-2.90]***	-0.08 [-2.89]***	-0.08 [-2.83]***	-0.08 [-2.93]***	-0.05 [-2.99]***	-0.05 [-2.99]***	-0.05 [2.92]***	-0.05 [-3.03]***
Density	-0.001 [-0.98]	-0.001 [-0.97]	-0.001 [-1.06]	-0.001 [-0.94]	-0.001 [-0.94]	-0.001 [-0.93]	-0.001 [-1.02]	-0.001 [-0.90]
Nypp	0.03 [2.51]***	0.03 [2.53]**	0.03 [2.64]***	0.03 [2.42]**	0.016 [2.52]**	0.017 [2.54]**	0.02 [2.66]***	0.02 [2.42]**
Gia_ae	-0.007 [-0.27]	-0.008 [-0.13]	-0.012 [-0.48]	-0.004 [-0.15]	-0.004 [-0.28]	-0.005 [-0.31]	-0.01 [-0.49]	-0.003 [-0.16]
Gia_ae_ybe	-0.01 [-0.36]	-	-	-	-0.003 [-0.30]	-	-	-
Gia_ae_yae	-	0.002 [0.16]	-	-	-	0.001 [0.13]	-	-
Gia_om_ybe	-	-	0.05 [0.75]	-	-	-	0.03 [0.77]	-
Gia_om_yae	-	-	-	-0.02853	-	-	-	-0.02 [-0.36]
Pi_Dum	1.60 [3.31]***	1.61 [3.32]***	1.69 [3.41]***	1.57 [3.22]	0.95 [3.38]***	0.95 [3.39]***	1.01 [3.48]***	0.93 [3.28]***
Cldum	-0.34 [-1.18]	-0.35 [-1.21]	-0.35 [-1.19]	-0.34 [-1.15]	-0.21 [-1.18]	-0.21 [-1.21]	-0.21 [-1.19]	-0.20 [-1.14]
Cl_al	-0.85 [-2.90]***	-0.84 [-2.89]	-0.85 [-2.19]***	-0.84 [-2.89]***	-0.53 [-3.01]***	-0.53 [-3.00]***	-0.53 [-3.02]***	-0.53 [-3.00]***
Cons	-7.64 [-3.80]***	-7.64 [-3.79]***	-7.65 [-3.82]***	-7.72 [-3.79]***	-4.53 [-3.88]***	-4.54 [-3.87]***	-4.54 [-3.91]***	-4.58 [-3.87]***
#Obs	476	476	476	476	476	476	476	476
Wald Chi2(9)	54.85	54.83	54.99	54.90	60.55	60.46	60.69	60.56
LR Test	22.64	22.57	22.54	22.71	22.73	22.68	22.68	22.82

Note-Likelihood-ratio test of rho=0: chibar2 (01) Test. ***, **, * Significant at 1%, 5% and 10% respectively (z-statistics in the parentheses).

Table a(iv): When Finance Commission Transfer is one of the independent variables

Variables	Logit Model				Probit Model			
	1	2	3	4	5	6	7	8
Turnout	0.14 [4.63]***	0.13 [4.62]***	0.15 [4.85]***	0.135313	0.08 [4.79]***	0.08 [4.78]***	0.086 [5.02]	0.08 [4.79]***
Infs	-0.08 [-2.88]***	-0.08 [-2.86]***	-0.066 [-2.51]**	-0.08 [-2.94]	-0.05 [-2.97]***	-0.05 [-2.95]***	-0.039 [-2.53]**	-0.050 [-3.04]***
Density	-0.001 [-0.90]	-0.0011 [-0.90]	-0.001 [-0.79]	-0.001 [-0.96]	-0.001 [-0.87]	-0.001 [-0.86]	-0.0006 [-0.74]	-0.0007 [-0.92]
Nypp	0.03 [2.51]**	0.03 [2.53]**	0.03 [2.89]***	0.028 [2.49]***	0.016 [2.51]**	0.017 [2.54]***	0.019 [2.88]***	0.020 [2.48]**
Fct_ae	-0.002 [-0.14]	-0.003 [-0.18]	-0.01 [-0.73]	-0.0003 [-0.02]	-0.0012 [-0.12]	-0.002 [-0.17]	-0.007 [-0.67]	-5.3E-05 [-0.01]
Fct_ae_ybe	-0.003 [-0.36]	-	-	-	-0.0015 [-0.32]	-	-	-
Fct_ae_yae	-	0.002 [0.23]	-	-	-	0.001 [0.22]	-	-
Fct_om_ybe	-	-	0.19 [3.18]***	-	-	-	0.112 [3.21]***	-
Fct_om_yae	-	-	-	-0.04 [-0.59]	-	-	-	-0.024 [-0.60]
Pi_Dum	1.60 [3.31]***	1.61 [3.32]***	1.99 [3.95]***	1.59 [3.29]***	0.95 [3.38]***	0.96 [3.38]	1.18 [4.05]***	0.95 [3.35]***
Cldum	-0.34 [-1.17]	-0.35 [-1.21]	-0.35 [-1.18]	-0.33 [-1.14]	-0.20 [-1.17]	-0.21 [-1.20]	-0.211 [-1.19]	-0.20 [-1.14]
Cl_al	-0.86 [-2.91]***	-0.85 [-2.90]***	-0.90 [-3.02]***	-0.85 [-2.89]***	-0.53 [-3.02]***	-0.53 [-3.01]***	-0.56 [-3.11]***	-0.53 [-2.99]***
Cons	-7.76 [-3.91]***	-7.75 [-3.90]***	-8.37 [-4.15]***	-7.78 [-3.91]***	-4.60 [-3.99]***	-4.60 [-3.98]	-4.95 [-4.24]	-4.62 [-3.99]***
#Obs	476	476	476	476	476	476	476	476
Wald Chi2(9)	54.86	54.85	60.75	55.05	60.58	60.49	68.20	60.75
LR Test	25.06	24.96	27.80	24.96	25.21	25.13	27.77	25.19

Note-Likelihood-ratio test of rho=0: chibar2 (01) Test. ***, **, * Significant at 1%, 5% and 10% respectively (z-statistics in the parentheses).

Table a(v): When Gross Devolution and Transfer of Resources from the Center is one of the independent variables

Variables	Logit Model				Probit Model			
	1	2	3	4	5	6	7	8
Turnout	0.14 [4.72]***	0.13 [4.68]***	0.135 [4.67]***	0.133 [4.62]***	0.08 [4.88]***	0.080 [4.83]***	0.08 [4.83]***	0.079 [4.78]***
Infs	-0.08 [-2.92]***	-0.08 [-2.90]***	-0.078 [-2.87]***	-0.077 [-2.88]***	-0.05 [-3.01]***	-0.05 [-2.99]***	-0.047 [-2.89]***	-0.047 [-2.99]***
Density	-0.0011 [-0.87]	-0.001 [-0.88]	-0.0012 [-0.90]	-0.0011 [-0.85]	-0.001 [-0.83]	-0.001 [-0.85]	-0.0007 [-0.87]	-0.001 [-0.82]
Nypp	0.030 [2.63]***	0.031 [2.67]***	0.030 [2.68]***	0.031 [2.70]***	0.020 [2.63]***	0.018 [2.67]***	0.018 [2.67]***	0.018 [2.70]***
Gdtr_ae	0.020 [1.17]	0.014 [0.97]	0.013 [0.87]	0.011 [0.71]	0.010 [1.13]	0.008 [0.93]	0.007 [0.84]	0.006 [0.67]
Gdtr_ae_ybe	-0.005 [-0.84]	-	-	-	-0.003 [-0.82]	-	-	-
Gdtr_ae_yae	-	0.002 [0.31]	-	-	-	0.001 [0.32]	-	-
Gdtr_om_ybe	-	-	0.026 [0.58]	-	-	-	0.015 [0.55]	-
Gdtr_om_yae	-	-	-	0.056 [1.08]	-	-	-	0.034 [1.10]
Pi_Dum	1.80 [3.52]***	1.79 [3.51]***	1.82 [3.54]***	1.77 [3.51]***	1.056 [3.58]***	1.057 [3.57]***	1.07 [3.6]***	1.050 [3.57]***
Cldum	-0.266 [-0.89]	-0.30 [-1.00]	-0.30 [-1.02]	-0.33 [-1.09]	-0.162 [-0.90]	-0.18 [-1.01]	-0.184 [-1.03]	-0.19 [-1.09]
Cl_al	-0.83 [-2.82]***	-0.82 [-2.79]***	-0.83 [-2.81]***	-0.83 [-2.83]***	-0.515 [-2.91]***	-0.51 [-2.89]***	-0.52 [-2.91]***	-0.52 [-2.94]***
Cons	-8.66 [-4.14]***	-8.50 [-4.10]***	-8.47 [-4.08]	-8.29 [-4.01]***	-5.12 [-4.23]***	-5.04 [-4.18]	-5.003 [-4.16]***	-4.91 [-4.09]***
#Obs	476	476	476	476	476	476	476	476
Wald Chi2(9)	56.09	55.78	55.69	56.62	62.00	61.46	61.50	62.46
LR Test	27.07	26.48	26.33	26.04	27.18	26.61	26.41	26.11

Note-Likelihood-ratio test of rho=0: chibar2 (01) Test. ***, **, * Significant at 1%, 5% and 10% respectively (z-statistics in the parentheses).