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Abstract

Many states in India have time and again elected a multiparty or a coalition government. Research so far has shown that these differences in political cohesiveness of the ruling political entity has influenced the spending choices of the state governments. However, the evidence is not completely conclusive. Different authors have used different measures of political fragmentation deriving opposite results for their effect on state government spending. There are also differences in the way economists and political scientists have dealt with the issue econometrically. This is coupled with a lack of a theoretical model of choice of public spending under alternative political regimes in the Indian context. I address these gaps in the literature by first building a theoretical model of spending policies of a state government. In this model, extensiveness and intensity of credit constraints influences equilibrium voting policies and hence the spending policies of governments in power. The resulting predictions are then comprehensively tested using data on seventeen Indian states over the period of twenty years. The econometric analysis provides substantive evidence for the importance of political factors in determining government spending. Specifically, we find that that politically less cohesive governments tend to spend more on education than their more cohesive counterparts. There is also some evidence on electoral cycles in health expenditure. Further, the analysis supports the model's underlying notion of credit constrained voters determining the spending policies of the government via the degree of political cohesiveness of the government in power.

JEL Codes: E62, H72.
Keywords: political economy, government spending, credit constraints and voting, differentiated election platforms, coalition governments in India.

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1. Introduction

Many states in India have time and again elected a multiparty or a coalition government. Given that much of the policy making in a democratic country happens in the political realm, the degree of political cohesion of a government can be argued to be influential in deciding the level and composition of spending. However, would such argument hold reign if subjected to a rigorous theoretical and empirical analysis? Exploring the answer to this question is the main focus of this paper. Because state government spending contributes significantly to the fiscal burden of the central government, such exploration can unravel political underpinnings of the conduct of monetary policy as well. In this sense, the analysis in this paper also concerns itself with the fiscal aspects of the Leviathan monetary policy dealt with in Waknis (2011).

The empirical analysis so far has shown that coalition governments do spend differently than single party governments. Specifically, two out of three studies cited below show that coalition governments spend more on education than the single party governments. Various reasons have been conjectured for this behavior including a heterogenous constituency or higher visibility of certain category of voters over others, etc. A more interesting reason from the macroeconomic perspective has been suggested by Saez and Sinha (2009). They posit a Polanyi mechanism at work causing this differentiated spending patterns. Karl Polanyi [1], while writing about the transition from traditional economies to market liberalization, suggested that market pressures may lead to more demands for protection and insurance. This certainly makes sense in the case of developing countries like India. The coexistence of substantial inequities along with impressive economic growth, makes such demands from people not equipped to deal with the uncertainty that a market economy brings along, quite plausible. This is not just a conjecture but something that seems to be borne out by data. For example, Ghate et al. (2011) document that post 1990 the properties of Indian business cycle closely approximate those in the developed economies. Such fluctuations can definitely be argued as being income shocks to the economy, which without any insurance mechanism to rely on, can certainly be accentuated.

So how do people respond to these changed circumstances. How do they smooth consumption when they lack access to insurance-social or otherwise-in the presence of increased fluctuations in economic activity? One answer to this question, is the use of voting power to secure government spending on the required public goods to do so. In India we see this happening through examples of political responses in terms of cash based relief programs, improved water supply and sanitation facilities, mid day meal schemes for kids, etc. There are also few studies that seem to support this conjecture about interaction between politicians and voters. For example Tandon (2007) uses the tariff reforms of 1990 to show that politicians responded to the differential impact of the reforms and that such policies significantly affected the voting response. Cole et al. (2008) show that politicians or governments respond to weather shocks

[1] First published in 1944, Polanyi (2001) is an analytical account of the transformation of traditional economies embedded in social systems to a more market based systems. Although the book primarily talks about the European economies before and after the Industrial revolution, the analysis can be argued to be relevant to today's many transition and emerging economies including India.

and this in turn affects the voter's response to the incumbent governments. I use this idea of reliance on government spending for smoothing consumption by credit constrained voters to develop a theory of nature of state spending conditional on the type of government.

The model includes a two period endowment economy where some of the agents are credit constrained. Presence of aggregate shocks to endowments and credit constraints means that more and more people would need to rely on some insurance mechanism or support to smooth consumption. Government expenditure on local public goods like education, health and irrigation could be an example of such expenditure. In the model, political parties contesting elections float differentiated election platforms prior to the realization of shocks. The national party contests the election based on an ideological platform, while the coalition of national and regional parties does so on a economic policy based platform. In an ideologically determined spending agenda, the focus is on expenditure which may not may not address specific needs of the voters. However, an economic policy based platform explicitly focusses on local public goods requirements of voters. The preferences of voters are such that differentiated platforms survive in equilibrium and voters are not indifferent between them unlike in a Downsian model. Agents vote after the realization of shocks to smooth consumption. A negative shock ensures that majority of voters become credit constrained and vote for a coalition government. A positive shock would imply the opposite. We assume that once elected, the respective party implements its advertised spending policies.

The theory delivers clear predictions not only about the relationship between degree of political cohesiveness and government spending but also about the emergence of certain type of government in the first place. I use these predictions of the model to test against the expenditure data of 17 Indian states for the period of 20 years. The reason to conduct another econometric analysis is that the existing results are not completely without problems. Chaudhuri and Dasgupta (2006) and Lalvani (2005) use different measures of political fragmentation and come to contradictory results in terms of education spending as well as current and capital account spending. The third paper, Saez and Sinha (2009), corrects the course by including various measures of political fragmentation and confirms that coalition governments spend more on education. But it uses only one econometric methodology to do so and hence does not provide the required robustness for the results. This constitutes a valid criticism because of the nature of data set being analyzed. We have a data panel with number of states less than the number of years which is sometimes referred to as a long panel (Cameron and Trivedi (2010)). The theoretical debate on an appropriate method to analyze such a data set is anything but settled. Such data sets are common in the study of political economy and have been used before by political scientists as well as economists often employing different methods. By using multiple methods of statistical analysis, we improve upon these studies by using a variety of suggested statistical methods to check the sensitivity of results to the underlying methodology. Along with additional interesting results on other expenditure categories, we do find substantial evidence that a higher degree of political fragmentation is associated with a higher spending on education. .

Thus, this paper not only offers a theory of government spending conditional on degree of political

cohesiveness but also provides a clearer and comprehensive econometric analysis of state spending in India. The rest of the paper is organized as follows. Section 2 lays out the model. Section 3 presents the econometric analysis of expenditure patterns of the state governments based on the predictions of the model. Section 4 looks at the question of what determines the likelihood of having a coalition government. Section 5 concludes.

2. Model

Consider a two period endowment economy populated with a continuum of agents. At the start of every period agents receive an endowment ω_t^i. There is borrowing and lending in the economy. A part of the endowment has to be used as a collateral for borrowing in the credit market. There is inequality in the initial endowment distribution and hence some of the agents might be credit constrained. The economy is subject to aggregate shocks on endowments. Let $\bar{\omega}$ be the level of endowment, which divides the agents into being credit constrained and not credit constrained. A negative shock shifts the initial distribution of endowments more to the left of $\bar{\omega}$ increasing the number of credit constrained agents in the population and positive shock has the opposite effect. However, at any given point the distribution of either agents is never degenerate. These changes in initial endowments affect the distribution of voter preferences to be discussed below.

2.1. Agents

All Agents are risk averse. After receiving the endowment (ω_1^i) agents face aggregate shocks which affect them differentially depending on severity of their credit constraints. Let the probability where an agent's endowment could be destroyed be ψ. This makes $(1-\psi)$ as the probability with which, the endowment could stay at the pre shock level. The economy ends at the end of the second period. Non credit constrained agents enter the credit market and trade to smooth consumption. Credit constrained voters depend on availability of local public goods for consumption smoothing. Production of the public goods is financed by a distortionary tax on the non-credit constrained agents. Examples of typical local public goods would be improved schools, introduction of meal schemes in the schools, improved health access,etc. These are visible and easily targetable expenditures and hence could be used for smoothing consumption by credit constrained agents.

Agents seek to optimize the expected value of life time consumption, where the expectation is conditioned on the distribution of shocks. Agents cannot enter into any contract before the realization of shocks and hence there is no private insurance market.

Agents solve the following problem as an economic entity:

$$\tilde{W}(\omega^i, \Psi) = \max_{c_t^i, c_{t+1}^i} u(c_t^i) + E_t \beta^i u(c_{t+1}^i) \quad (1)$$

$$\text{s.t.} c_t^i + \frac{c_{t+1}^i}{1+R} \leq (1-\tau_t)\omega_t^i + (1-\tau_{t+1})\frac{\omega_{t+1}^i}{1+R} + RB_{t-1}^i + TR_t^i + TR_{t+1}^i \quad (2)$$

$$RB_{t-1}^i \leq \omega_{t+1}^i \quad (3)$$

where, B_t is the number of bonds in period t and R is the price price of bonds in the credit market. τ is a distortionary tax on non-credit constrained agents and TR is the transfer. The expectation is over the distribution of shocks.

Agents who enter the credit market buy and sell bonds at the price R. Agents behave competitively in this market and hence take R as given. Because borrowing needs collateral, the maximum an agent can borrow is given by the available initial endowment, i.e., $RB_{t-1} \leq \omega_{t+1}^i$. Thus, credit constrained consumers will have positive net transfers and no bonds, while non credit constrained voters will have bonds and taxes/negative net transfers in their budget constraint. We could understand the agents in this economy as those in Kiyotaki and Moore (1997)- farmers and gatherers. Post shock some farmers need to go to the credit market but only few are left with any land to use as collateral in the credit market. The remaining become almost or completely landless losing access to the credit market.

Agents as voters care about ideology as well as economic policy. Having certain ideology would mean having specific preferences about social and economic justice and caring about the economic policy would imply caring about what kind of public goods are provided by using taxes. Accordingly, credit constrained voters would care about economic policy more than ideology and vice versa.

2.2. Political Aspects

There are two entities contesting an election, S and R, to form a government at the state level. S refers to a single party with a national presence and R to a coalition of regional and/or national parties. The single party has an ideologically motivated election platform and the coalition has one promising provision of local public goods. Let $f_j \in F$ be the fixed characteristic of entity j and $a_j \in A$ be the policy variable that the entities are free to choose. We will assume that f_S is being expert in national issues and politics and f_R as having expertise in assessing local public goods requirements. The policies that these parties choose will be a_S and a_R

Usually in Downsian style models with or without probabilistic voting, we get a result of policy convergence. In equilibrium, the competing candidates or parties choose the same policies and voters become indifferent between candidates (see Persson and Tabellini (2002) for details). However, in this model we would expect differentiated platforms in equilibrium and voters to be not indifferent between candidates. This approximates the reality where candidates rarely choose similar platforms and voters certainly seem to favor one candidate over other (Krasa and Polborn (2010)).

There have been two ways in which such divergence has been achieved in theory. One way is to assume limited information on candidates in a Downsian setup and the other provided by Krasa and Polborn (2009) and Krasa and Polborn (2010). In the former paper, the authors specify conditions under which one could have a divergence and in the later they develop a model with multidimensional policy and a binary policy model which is capable of having convergence as well as divergence under clearly defined conditions. In what follows, we adapt an example economy from Krasa and Polborn (2009) to illustrate the choice of spending conditional on type of government. .

Uncertainty about voter preferences is described by a probability space $(\Omega, \mathcal{D}, \mu)$: A state $\omega \in \Omega$ determines voters preferences over $F \times A$, and μ is the probability distribution of these preference shocks, while $\mathcal{D}$ is the set of measurable events. The preference shocks basically act as a counterpart to the distribution of income shocks given by ψ. Given these shocks, voters can be differentiated on the basis of their preferences as follows:

Type S $(f_S, a_S) \succ (f_R, a_R) \succ (f_S, a_R) \succ (f_R, a_S)$

Type R $(f_R, a_R) \succ (f_S, a_S) \succ (f_R, a_S) \succ (f_S, a_R)$

The above preference ranking means that a particular type of voter prefers the candidate of the particular characteristic and would like him or her to implement a policy consistent with his or her type. This is an example of what Krasa and Polborn (2009) call *non-Uniform Candidate Ranking preferences*. Preferences on $F \times A$ are said to satisfy uniform candidate ranking if for all $f_o, f_1 \in F$ and all $a, a' \in A$, $(f_0, a) \succeq (f_1, a)$ if and only if $(f_0, a') \succeq (f_1, a')$. Models in Downsian tradition with candidates without fixed characteristics satisfy UCR. Given this, Type S voters would primarily be not credit constrained and Type R voters be credit constrained. Though, there might be a certain number of voters who definitely belong to either of the groups, post shock realization there are some voters who migrate to opposite groups depending on if they become credit constrained or not(swing voters).

2.3. Competitive equilibrium and the implied voting rules

Definition 1. *A competitive equilibrium for this economy is a list of allocations of endowments, debt and consumption of credit constrained and non credit constrained agents such that 1)agents maximize the utility given the distribution of shocks and the budget constraint and 2)given the credit limit based on the initial value of the endowment, the price of bonds clears the credit markets.*

We use the above definition of competitive equilibrium to derive the equilibrium voting rules. Let the optimal life time consumption implied when the distribution of shocks is degenerate be $\tilde{C}_i$ and $W(\omega_i)$ be the associated indirect utility function. We can think of this level of consumption as something like permanent consumption for an agent or consumption associated with some linear combination of $\bar{\omega}$. Given this, the voters will populate either groups (credit constrained or not credit constrained) depending

on the following decision rules derived from the comparison of optimization problem and the definition of the competitive equilibrium.

Proposition 1. (Utility Maximization and Voting Rules): *Given the description so far, the voters' maximization problem implies the following decision rules for voting:*

$$V^b = \begin{cases} R_i & if \tilde{W}(\omega_i, \Psi) < W(\bar{\omega_i}) \\ S_i & if \tilde{W}(\omega_i, \Psi) \geq W(\bar{\omega_i}) \end{cases} \tag{4}$$

$$V^{nb} = \begin{cases} S_i & if \tilde{W}(\omega_i, \Psi) < W(\bar{\omega_i}) \\ S_i & if \tilde{W}(\omega_i, \Psi) \geq W(\bar{\omega_i}) \end{cases} \tag{5}$$

where V^b and V^{nb} are voters types who are credit constrained and not credit constrained respectively.

Proof of Proposition 1. If there were no shocks, then given the endowments the agents would solve the utility maximization problem for the optimal choice of consumption every period. Such choice would depend on the endowment and hence would change from individual to individual. A shortfall from such an optimal choice ($\bar{C}_i$) would not matter for the voters who are not credit constrained and hence they will vote based on ideology rather than economic policy. However, credit constrained voters will have to vote depending on how their consumption in presence of shocks compares to their $\bar{C}_i$. A short fall means that they become dependent on government expenditure to smooth consumption and therefore will vote based on economic policy than ideology. **QED**.

We assume that events follow a particular sequence.

1. Parties communicate election platforms.
2. Voters realize idiosyncratic shocks.
3. Elections are held and people vote.
4. A Government is formed.
5. Policy is implemented.
6. Agents make their consumption decisions.

With the above details and sequence of events and given that a coalition government in this model emerges because majority of voters become borrowing constrained as a result of a negative income shock, the following statements hold:

Proposition 2. (Political Equilibrium):

1. *With probability ψ, there would be a coalition government of one national party and one or more regional parties. The spending policy implemented will include higher expenditure on the local public goods targeted at the member regional party's constituency.*

2. *With probability $(1-\psi)$ there will be a single party government and the spending policy implemented would be according to the ideologically motivated election platform of the national party in office.*

Proof of Proposition 2. It follows from Proposition 1 that the type of government is conditional on the type of shocks realized. If the shocks are positive, we have a majority vote for a single party government and if the shocks are negative, the majority vote goes to coalition of regional parties. This emphasizes the role of credit constrained voters as swing voters and that the probability of having a single party or coalition government depends on the probability of type of shock. Note that a positive probability for shocks implies that the presence of swing voters (credit constrained or not depending on shocks) and ensures that each type of voter group could end up as pivotal. Because we assume that the policies are implemented and in equilibrium the parties contesting elections choose differentiated policies, the nature of actual spending depends on who is in power.

QED.

Once the type of government is determined based on the probability of shocks and existence of credit constrained voters, the spending policies are implemented by whichever political entity is voted into power. If a coalition government is voted to power then we can expect the spending on local public goods like education and healthcare access to go up. If a single party government comes to power then spending policies will reflect the ideological preferences than being responsive to local public goods needs. In the empirical analysis that follows we test these implications of Propositions 1 and 2. We test for differences in spending patterns conditional on the type of government as well as what affects the probability of having a particular type of government in the first place.

3. Econometric Analysis of the Spending Patters

In this section we test propositions 1 and 2, using data on 17 Indian states for the period of 1980-2000. This paper is definitely not the first attempt to do so. Among a few studies on the political budget cycles in India, Chaudhuri and Dasgupta (2006), Lalvani (2005), and Saez and Sinha (2009) specifically talk about fiscal determinants of state spending in India. These studies do provide evidence that there exist differences in the way coalition state government spend as against the single party state governments but they are not without problems. Chaudhuri and Dasgupta (2006) and Lalvani (2005) use different measures of political fragmentation and come to contradictory results in terms of education spending as well as current and capital account spending. Saez and Sinha (2009) correct the course by including various

measures of political fragmentation and confirms that coalition governments spend more on education. Though, this makes the tally in favor of positive effect of political fragmentation on education spending 2 versus 1, there are several counts on which the analysis seems incomplete.

First, though Saez and Sinha (2009) provides robustness checks by including more than one measures of political fragmentation it does not include all the measures. It leaves out one from Chaudhuri and Dasgupta (2006) paper. Secondly, even though being econometrically more sophisticated than the other two papers, it does not control for GDP at all. It only has state fixed effects. As much as controlling for unobserved heterogeneity is important, controlling for obvious differences is essential for a complete understanding of the underlying economic processes. The econometric analysis in this paper proposes to address this issue by using per capita state GDP as an additional control. We analyze expenditure on education, health, irrigation, agriculture and social services.

We primarily use a data set (POLEX) created and maintained by Saez (2008) . It has the data on state expenditure under various heads and data on various political variables on 17 Indian states. The coverage in POLEX is limited to the states for whom data is consistently available for the period 1980-2000. It does not contain the state GDP data. The data on per capita state GDP at constant prices for the states was calculated from the series available in the Handbook of Statistics on Indian Economy maintained by the Reserve Bank of India on line.

Because of the nature of the data and smaller N and T (17 and 20 respectively), robustness check also has to be in terms of the methods used. The usual panel data methods favored by the economists have been developed to address the cases where $N > T$. Beck (2006) argues that in cases of $N < T$, it may not be appropriate to use the panel data methods, while describing a body of statistical methods(Time series-Cross Section(TSCS) methods) used by political scientists to study the political determinants of economic outcomes and policies. Saez and Sinha (2009) above follow these methods. A standard modeling practice under this methodology is to use an fixed effect model with panel corrected standard errors and a lagged dependent variable to account for dynamics.

Studies based on such data sets are not limited to political science, however. A series of papers pioneered by Daren Acemoglu (Acemoglu et al. (2008, 2002)) look at the economic determinants of political outcomes. Much of this analysis is in the mean regression framework and the data is in the TSCS form. Alexander et al. (2011,) use a similar dataset as in Acemoglu et al. (2008) to demonstrate that a quantile regression can in fact do better job to explain the interaction of whole distribution of economic variables and political outcomes. Though, they do not contradict the findings in later, Alexander et al. (2011,) demonstrate that the nature of relationship between income and democracy shows significant sensitivity to income levels and disproportionately so to country specific effects. Their basic argument for using quantile regression is thus, that it allows heterogenous marginal effects across the conditional distribution and that it affords random coefficient interpretation allowing for slope heterogeneity arising out of non-Gaussian distributions[2].

[2]According to the authors, the distributions of two commonly used numerical measures of democracy is bimodal.

The debate is far from settled and hence in this paper, we follow the TSCS consensus methodology, usual panel data methods as well as the quantile regression approach to analyze the effect of political cohesiveness on state government spending in India. In a separate subsection we also analyze the issue of what determines the probability that a state government has a given type of government. All this analysis is guided by the theoretical predictions of the model in the earlier section above. Use of multiple methods and specifications to test the hypothesis about effect of type of government on expenditure on local public goods serves as built in robustness check for the results.

A somewhat standard practice under the TSCS methodology is to use an fixed effects model with panel corrected standard errors and lagged dependent variable to account for dynamics Bartels (n.d.). TSCS data sets are also referred to as the 'long panel', with the name 'short panel' reserved for $N > T$ case. Cameron and Trivedi (2010) state that when $T > N$ it is necessary to specify a model for serial correlation in the error. They suggest that the best estimator in this case is to use pooled feasible generalized least squares estimator (PFGLS) with a distinct AR(1) process for error in each state. However, if T is not much larger than N, then it could lead to a finite sample bias and then it is advisable to at least use the errors still panel corrected but for only panel level heterogeneity. To see how sensitive the estimates are to various error processes, we run the pooled fixed effects model using various error specification process. Further, keeping in lines with the suggestion of Cameron and Trivedi (2010), we assume an AR1 process for the error term, while running the panel data fixed effects and random effects regressions. The command `xtregar` is used to run these regressions (STATA (n.d.)).

3.1. Results

We can see that the degree of political cohesiveness as measured by effective number of votes or seats has an unambiguous positive and significant effect on education spending under all the specifications. The results are given in Table 1.

We repeat similar exercise for other expenditure categories and the detailed results are given in Appendix 1. The degree of political cohesiveness or the coalition dummy does not have any effect on health expenditure under any regression specifications. However, in all regressions but one, the variable election is significant and negatively related with health expenditure. This suggests that not only there are political cycles in health spending but it does not seem to be a politically beneficial category of spending. Quantile regressions also suggest that states with higher per capita GDP tend to spend less on health than states with lower per capita GDP. For social expenditure, under all regression specifications except the panel data ones, BJP has a negative and significant effect. We find similar effect of Congress, but it vanishes under regressions using panel data methods.

For irrigation expenditure, the results vary a lot according to specifications used. Hence, it is difficult to say anything conclusively. The expenditure on agriculture is negatively affected by the variable 'alternate' suggesting an anti incumbency effect. Having a low degree of political cohesiveness also has a negative

Table 1: Education Regressions-Different Error Processes1

	(1)	(2)	(3)	(4)	(5)	(6)
	Reg_iid	Reg_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.572	-0.572	-0.445	-0.523	-0.445	-0.304*
	(0.357)	(0.338)	(0.303)	(0.280)	(0.311)	(0.119)
left	0.524	0.524	0.355	0.411	0.355	0.299
	(0.526)	(0.622)	(0.547)	(0.482)	(0.460)	(0.177)
bjp	-0.0734	-0.0734	-0.0883	-0.109	-0.0883	-0.193
	(0.457)	(0.386)	(0.351)	(0.352)	(0.401)	(0.107)
congress	0.292	0.292	0.213	0.226	0.213	-0.0149
	(0.374)	(0.347)	(0.319)	(0.307)	(0.329)	(0.109)
regional	-0.321	-0.321	-0.266	-0.308	-0.266	-0.320*
	(0.420)	(0.427)	(0.381)	(0.374)	(0.367)	(0.149)
coalitio	0.234	0.234	0.199	0.179	0.199	0.146
	(0.324)	(0.369)	(0.330)	(0.330)	(0.286)	(0.108)
election	0.118	0.118	0.0812	0.123	0.0812	-0.0303
	(0.262)	(0.288)	(0.300)	(0.261)	(0.264)	(0.0795)
effectvt	0.216*	0.216*	0.179*	0.218**	0.179*	0.157***
	(0.0860)	(0.0888)	(0.0779)	(0.0776)	(0.0749)	(0.0390)
margin	0.00408	0.00408	0.00369	-0.00137	0.00369	0.00675
	(0.0129)	(0.0129)	(0.0113)	(0.0107)	(0.0112)	(0.00461)
alternat	-0.339	-0.339	-0.342	-0.325	-0.342	-0.283***
	(0.234)	(0.229)	(0.208)	(0.186)	(0.207)	(0.0632)
L.education	0.775***	0.775***	0.822***	0.805***	0.822***	0.843***
	(0.0365)	(0.0499)	(0.0448)	(0.0460)	(0.0322)	(0.0194)
Constant	8.669*	8.669**	6.812*	7.762**	6.812*	5.301***
	(3.395)	(3.228)	(2.875)	(2.677)	(2.961)	(1.144)
Observations	323	323	323	323	323	323
r2	0.741	0.741	0.796	0.944		
chi2	888.9	713.2	1018.3	967.4	1244.4	8370.3

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Education Regressions-Different Error Processes2

	(1)	(2)	(3)	(4)	(5)	(6)
	Reg_iid	Reg_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.735*	-0.735*	-0.589	-0.653*	-0.589	-0.435***
	(0.360)	(0.342)	(0.312)	(0.307)	(0.319)	(0.123)
left	0.378	0.378	0.247	0.359	0.247	0.214
	(0.525)	(0.625)	(0.555)	(0.486)	(0.465)	(0.163)
bjp	-0.120	-0.120	-0.131	-0.134	-0.131	-0.224*
	(0.456)	(0.378)	(0.348)	(0.354)	(0.405)	(0.102)
congress	0.234	0.234	0.171	0.190	0.171	-0.0428
	(0.373)	(0.341)	(0.315)	(0.301)	(0.333)	(0.108)
regional	-0.266	-0.266	-0.223	-0.288	-0.223	-0.271
	(0.416)	(0.418)	(0.377)	(0.370)	(0.369)	(0.142)
coalitio	-0.00417	-0.00417	0.0269	0.00374	0.0269	-0.0800
	(0.362)	(0.400)	(0.361)	(0.361)	(0.324)	(0.122)
election	0.127	0.127	0.0887	0.140	0.0887	-0.00366
	(0.262)	(0.283)	(0.294)	(0.258)	(0.263)	(0.0731)
effectst	0.383**	0.383**	0.307*	0.334**	0.307*	0.304***
	(0.141)	(0.135)	(0.120)	(0.116)	(0.125)	(0.0614)
margin	0.00683	0.00683	0.00593	0.0000604	0.00593	0.00833
	(0.0129)	(0.0134)	(0.0119)	(0.0112)	(0.0114)	(0.00485)
alternat	-0.336	-0.336	-0.342	-0.306	-0.342	-0.272***
	(0.234)	(0.228)	(0.210)	(0.189)	(0.210)	(0.0604)
L.education	0.760***	0.760***	0.805***	0.786***	0.805***	0.824***
	(0.0379)	(0.0525)	(0.0477)	(0.0482)	(0.0340)	(0.0216)
Constant	10.37**	10.37**	8.380**	9.322**	8.380**	6.720***
	(3.411)	(3.282)	(2.981)	(2.913)	(3.021)	(1.205)
Observations	323	323	323	323	323	323
r2	0.742	0.742	0.790	0.937		
chi2	893.0	795.1	1054.7	942.3	1208.0	8583.6

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

effect on agricultural expenditure.

Saez and Sinha (2009) do not control for per capita state real GDP in their analysis. We do that in our analysis above as well as a separately below to see if doing so has any significant impact on the overall estimates. The results for education expenditure are given in Table 3 and for the other expenditure categories in the appendix. We find that overall per capita real GDP is almost always significant. However, note that its coefficient has a semi-elasticity interpretation as we used log transformed per capita GDP figures as a regressor. Additionally, we also find that inclusion of lagged dependent variable as a regressor reduces the coefficient on degree of political cohesiveness. This suggests that there is some history dependence in all the expenditure categories and when the given regression does not account for it, the impact is absorbed by degree of political cohesiveness.

One could potentially include a lagged dependent variable as a regressor in the panel data regressions. But doing so, complicates the estimation process substantially because of endogeneity issues. A way out is to use Arellano-Bond kind of an estimator, but this estimator was developed for short panels where the number of individuals on which we have observations are substantially greater than the time periods. There have been some simulation studies that have shown that application of this estimator to long panels type data leads to significant bias in estimation (Baltagi (2008)). Hence, we do not run regressions of these expenditures on their lagged values under panel data fixed and random effects estimation.

3.2. Quantile Regression

Following Alexander et al. (2011,) we also ran a quantile regression on 25^{th}, 50^{th}, and 75^{th} of education and health expenditure data conditional on the state GDP data. A quantile regression is a good way of understanding the partial effect of an explanatory variable on various segments of a population (Wooldridge (2011)). Thus running such a regression gives us yet another way of understanding the differences in spending patterns conditional on the state's per capita income. It allows us to see if the given category of spending is sensitive to where the state lies in the spending hierarchy. The substantial regional inequality in India only underscores the need to look at such variation in spending patterns. The complete tables are in Appendix 3 and the results are summarized here. We interpret the coefficients in such regressions noting the fact that quantile coefficients refer to effects on distributions and not on individuals (Angrist and Pischke, 2009, p.281). For example, if having less political cohesiveness affects the spending negatively in a particular quantile, it means that the states with lower political cohesiveness in that quantile would experience a decline in spending than states in the same quantile but having higher cohesiveness. It does not mean that a particular state with income in the given quantile is going to experience a decline in spending.

For the regression of education expenditure, the variable 'left' is a significant and positive predictor under all the quantiles and so are the two measures of political cohesiveness. Having a left leaning party in the government has similar positive effect across quantiles. Similarly political cohesiveness as measured

Table 3: Education Regressions-Per Capita SGDP and LDV_1

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	1.455	0.130	1.772*	0.359
	(0.825)	(0.461)	(0.812)	(0.486)
bjp	-0.967	-0.404	-0.222	-0.134
	(0.553)	(0.319)	(0.607)	(0.354)
congress	-0.0999	0.0518	0.169	0.190
	(0.493)	(0.287)	(0.510)	(0.301)
regional	-1.683*	-0.475	-1.374	-0.288
	(0.753)	(0.365)	(0.743)	(0.370)
coalitio	0.0339	0.0613	-0.0219	0.00374
	(0.551)	(0.359)	(0.539)	(0.361)
election	0.141	0.133	0.130	0.140
	(0.206)	(0.265)	(0.208)	(0.258)
effectst	0.501	0.259*	0.741**	0.334**
	(0.262)	(0.106)	(0.229)	(0.116)
margin	-0.00494	0.00217	-0.0140	0.0000604
	(0.0213)	(0.0115)	(0.0215)	(0.0112)
alternat	-0.408	-0.404*	-0.391	-0.306
	(0.323)	(0.187)	(0.335)	(0.189)
L.education		0.819***		0.786***
		(0.0464)		(0.0482)
lnpcsgdp			-2.290***	-0.653*
			(0.674)	(0.307)
Constant	19.84***	3.245***	39.33***	9.322**
	(0.860)	(0.867)	(5.731)	(2.913)
Observations	340	323	340	323
r2	0.848	0.921	0.864	0.937
chi2	28.72	985.0	51.54	942.3

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Education Regressions-Per Capita SGDP and LDV_2

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	1.728*	0.202	1.882*	0.411
	(0.730)	(0.457)	(0.736)	(0.482)
bjp	-1.042	-0.363	-0.388	-0.109
	(0.532)	(0.307)	(0.603)	(0.352)
congress	-0.0576	0.0905	0.0867	0.226
	(0.473)	(0.288)	(0.503)	(0.307)
regional	-1.585*	-0.480	-1.497*	-0.308
	(0.768)	(0.372)	(0.756)	(0.374)
coalitio	0.428	0.164	0.403	0.179
	(0.506)	(0.327)	(0.492)	(0.330)
election	0.0900	0.124	0.0762	0.123
	(0.209)	(0.267)	(0.211)	(0.261)
effectvt	0.444*	0.195**	0.474**	0.218**
	(0.184)	(0.0752)	(0.178)	(0.0776)
margin	-0.00455	0.000267	-0.0112	-0.00137
	(0.0207)	(0.0110)	(0.0211)	(0.0107)
alternat	-0.550	-0.400*	-0.506	-0.325
	(0.335)	(0.183)	(0.349)	(0.186)
L.education		0.828***		0.805***
		(0.0450)		(0.0460)
lnpcsgdp			-2.124**	-0.523
			(0.665)	(0.280)
Constant	19.52***	2.938***	38.04***	7.762**
	(0.793)	(0.844)	(5.877)	(2.677)
Observations	340	323	340	323
r2	0.881	0.931	0.899	0.944
chi2	37.83	968.0	67.11	967.4

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Education Regressions-Fixed Effects vs. Random Effects

	(1)	(2)	(3)	(4)
	edu_regar1	edu_regar2	edu_regar3	edu_regar4
lnpcsgdp	-1.568	-1.550	-2.343**	-2.326**
	(1.059)	(1.045)	(0.828)	(0.808)
left	-1.751	-1.781	0.0867	-0.0469
	(1.138)	(1.138)	(0.941)	(0.937)
bjp	-0.554	-0.503	-0.368	-0.347
	(0.784)	(0.778)	(0.744)	(0.738)
congress	-0.297	-0.236	0.0359	0.131
	(0.586)	(0.584)	(0.557)	(0.554)
regional	-1.569	-1.507	-1.659*	-1.482*
	(0.810)	(0.802)	(0.748)	(0.739)
election	0.136	0.154	0.0894	0.127
	(0.203)	(0.203)	(0.205)	(0.205)
coalitio	-0.129	-0.288	0.136	-0.280
	(0.469)	(0.504)	(0.458)	(0.496)
effectvt	0.185		0.370*	
	(0.202)		(0.174)	
margin	-0.0301	-0.0285	-0.0260	-0.0193
	(0.0211)	(0.0215)	(0.0203)	(0.0205)
alternat	-0.390	-0.345	-0.365	-0.261
	(0.357)	(0.349)	(0.335)	(0.329)
effectst		0.294		0.746**
		(0.299)		(0.254)
Constant	34.86***	34.65***	40.58***	39.85***
	(4.476)	(4.520)	(7.283)	(7.138)
Observations	323	323	340	340
r2				
Wald				
chi2			27.07	33.08
F	1.426	1.487		

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

by effective number of parties according to seats has a uniform effect on education spending. Lower cohesiveness is associated with uniformly higher spending across quantiles. Per capita state GDP is a significant negative predictor but again the interpretation of the coefficient being that of a semi elasticity.

For the regression of health expenditure, variables, 'left' and per capita state GDP are significant and positive and negative predictors respectively. Only one of the measures of political cohesiveness, 'effectvt' is negatively related to the health expenditure across quantiles. Lower cohesiveness means a decrease in health care spending. However, for none of the quantiles dealt with here, election is a significant variable.

For irrigation expenditure, there is evidence that presence of a regional party in the government leads to an increase in this expenditure. A Congress party government is also negatively associated with health expenditure and so is the coalition dummy. A BJP government is negatively associated with social expenditure. This was true under the TSCS regressions as well. Political cohesiveness as measured by vote share is negatively associated with agricultural expenditure across all quantiles. The variable 'margin' however is positively associated with expenditure on agriculture. This suggests that larger the difference in votes of the largest recipient and the second largest one, higher would be the expenditure on agriculture.

Under quantile regressions, it is actually interesting to see how the coefficients on regressors behave across quantiles. For example, in case of education expenditure regressions the coefficient on 'effectvt' jumps a bit from the lowest quantile to the higher quantile (graph in third row and first column). This suggests a higher impact of political cohesiveness in states with higher spending levels. The following figure shows the effect for all the quantiles for the regression of education expenditure and similar figures are included for other expenditure categories in the appendix. The coefficient on 'left' shows a dip at higher levels of expenditure for irrigation expenditure, signifying its lower influence in higher spending states. It remains fairly constant for health expenditure across quantiles suggesting that the left's influence is not sensitive to the level of this category of state spending. However, the effect of political cohesiveness as measured by vote share has a negative effect and its intensity increases as we move to higher quantiles. For agriculture expenditure, 'margin' has a positive effect mostly for mid range quantiles than at the tails. For social expenditure, the intensity of the negative effect of a BJP party government intensifies as we move to higher quantiles.

One reason why education might be looked at favorably than other variables is that it could be shown to be more lumpy and visible. Saez and Sinha (2009) argue this to be the case because of anti incumbency bias creating additional political uncertainty. Secondly, because of clear increasing returns to education in a liberalized economy, demand for increased resources devoted to it makes sense from the voters point of view. Given this, it can be argued that by subjecting spending on education to discretionary changes more than other variables, political parties are simply maximizing the probability of reelection. The theoretical model above implied that presence of credit constrained voters facing amplified aggregate risks would give rise to coalition governments and lead to specific spending outcomes. The econometric analysis above does not completely vindicate the story but does lend some substantive support to the predictions of the model. A summary of regression results is given in Table 8.

Table 6: Education Regressions-Various Quantiles_1

	(1)	(2)	(3)	(4)	(5)
	edu_OLS	edu_qreg_25	edu_qreg_50	edu_qreg_75	edu_bsqreg_50
lnpcsgdp	-3.305***	-2.853***	-3.257***	-2.872***	-3.257***
	(-6.63)	(-4.28)	(-5.64)	(-4.52)	(-4.89)
left	4.247***	4.113***	4.447***	3.450***	4.447***
	(5.68)	(4.48)	(5.21)	(3.41)	(6.94)
bjp	0.653	0.0779	0.533	1.139	0.533
	(0.94)	(0.09)	(0.66)	(1.29)	(0.67)
congress	1.578**	-0.0320	0.856	2.300**	0.856
	(2.83)	(-0.05)	(1.33)	(2.87)	(1.43)
regional	-0.442	-2.308**	-0.821	1.137	-0.821
	(-0.69)	(-3.03)	(-1.11)	(1.30)	(-1.04)
election	0.149	0.203	0.200	0.126	0.200
	(0.37)	(0.40)	(0.43)	(0.23)	(0.47)
coalitio	1.226*	0.0200	0.125	0.715	0.125
	(2.48)	(0.03)	(0.22)	(1.05)	(0.21)
effectvt	0.662***	0.440**	0.925***	1.097***	0.925***
	(5.20)	(2.67)	(6.27)	(6.51)	(4.82)
margin	0.00847	0.0382	0.0177	-0.0124	0.0177
	(0.43)	(1.60)	(0.77)	(-0.40)	(0.68)
alternat	0.176	0.456	0.319	-0.464	0.319
	(0.51)	(1.07)	(0.79)	(-0.95)	(0.85)
Constant	45.34***	41.29***	44.21***	41.91***	44.21***
	(10.33)	(7.03)	(8.71)	(7.66)	(7.73)
Observations	340	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: Education Regressions-Various Quantiles_2

	(1)	(2)	(3)	(4)	(5)
	edu_psarcor	edu_qreg_25	edu_qreg_50	edu_qreg_75	edu_bsqreg_50
left	0.130	2.517**	3.457***	3.331***	3.457**
	(0.28)	(3.11)	(3.37)	(3.80)	(3.08)
bjp	-0.404	0.175	0.660	0.596	0.660
	(-1.27)	(0.23)	(0.70)	(0.80)	(0.85)
congress	0.0518	-0.632	0.914	1.510*	0.914
	(0.18)	(-1.08)	(1.21)	(2.37)	(1.67)
regional	-0.475	-2.520***	-0.704	1.159	-0.704
	(-1.30)	(-3.69)	(-0.82)	(1.70)	(-1.11)
coalitio	0.0613	-1.816***	-0.990	0.220	-0.990
	(0.17)	(-3.49)	(-1.32)	(0.33)	(-1.36)
election	0.133	0.173	0.105	0.0480	0.105
	(0.50)	(0.39)	(0.19)	(0.10)	(0.23)
effectst	0.259*	1.534***	1.601***	1.559***	1.601***
	(2.44)	(9.01)	(6.05)	(6.72)	(6.57)
margin	0.00217	0.0673**	0.0262	-0.0163	0.0262
	(0.19)	(3.31)	(0.97)	(-0.66)	(1.13)
alternat	-0.404*	0.502	0.413	0.564	0.413
	(-2.16)	(1.38)	(0.87)	(1.43)	(1.07)
L.education	0.819***				
	(17.65)				
lnpcsgdp		-2.895***	-3.653***	-4.074***	-3.653***
		(-5.38)	(-5.42)	(-7.81)	(-6.01)
Constant	3.245***	39.96***	47.34***	52.61***	47.34***
	(3.74)	(8.46)	(8.09)	(11.62)	(9.12)
Observations	323	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

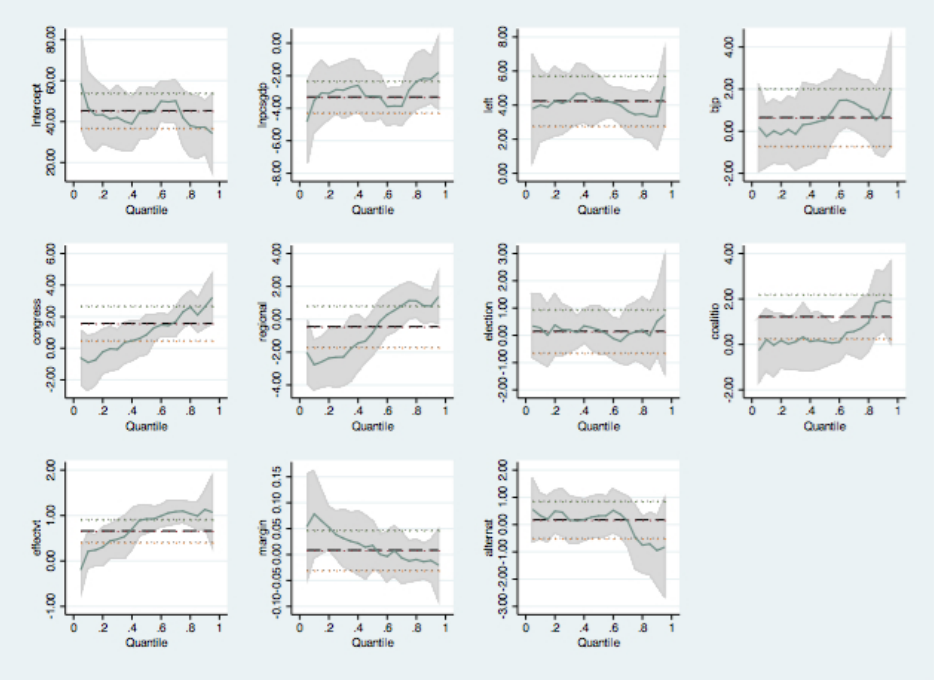

Figure 1: Behavior of coefficients on regressors across quantiles for Quantile Regression of education expenditure

3.3. Likelihood of a Coalition Government

The theoretical model above is in the tradition of microfounded models in economics. It proposes that in an equilibrium a certain type of government emerges to solve agents optimization problem. This is not to say that agents in real world only have economic motives behind voting or they are only self interested. The model only tries to capture some economic motivation behind the observed variation in political cohesiveness. Having said this, it would be interesting to take this motivation to the data and analyze factors the probability of a certain type of government emerging as a result of voting. In this section, we use binary response models to do so.

Two economic factors proposed to influence voting in an economy by the model were endowment shocks and credit constraints. We use the data on number of branch offices of nationalized banks in a state and the credit deposit ratio as proxies for credit constraints. We also use per capita GDP at 2000 prices as a control variable for state's income and population profile. There are several ways of estimating a binary response model for panel data. We estimate the effect of these three variables on the likelihood of having a coalition government for a state following various specifications as described in Wooldridge (2011) .

It is clear from Table 9, that none of the variables are statistically significant affecting the probability of a coalition government. However, except per capita state GDP, the other two variables have the expected

Table 8: Summary of TSCS-Panel Data and Quantile Regressions

Expenditure Category	TSCS-Panel Data	Quantile
Education	Low Political Cohesiveness (+)	Low Political Cohesiveness (+), Left (+)
Health	Election (+)	Left (+), Per Capita SGDP (-), Low Political Cohesiveness (vote share) (-)
Irrigation	Inconclusive	Regional Party (-), Congress (-), Coalition Dummy (-)
Social Expenditure	BJP (Except Panel,(-))	BJP (-)
Agriculture	Low Political Cohesiveness (-), Alternate (+),	Margin (+), Low Political Cohesiveness (vote share) (-)

sign. Higher number of per capita banks and a higher credit deposit ratio, both signify reduction in credit constraints and therefore reduce the probability of having a coalition government. Assuming that lower credit constraints go hand in hand with higher per capita incomes, one can argue that its effect is captured in the other two variables. Accordingly we run the following regression with only number of banks per capita and credit deposit ratio. The results are given in Table 9.

Dropping per capita state GDP as a regressor does not change the sign of the other two regressors (Table 10). Further, in all but one specification, credit deposit ratio is a statistically significant predictor of the change in the probability of having a coalition government. Higher the credit deposit ratio (lower the credit constraints), lower is the probability of having a coalition government in a given state. This clearly supports the message of the model above that credit constraints do play an important role in determining the degree of political cohesiveness of a state government.

Along with the issue of statistical significance, among the various specifications above, which ones would be appropriate to depend on? Table 11 provides information that answers this question. The mean and the standard deviations are the same across these models. It is difficult to interpret models which have a negative mean and predict values outside the $[0,1]$ interval. The random effects logit and the probit models seem to have both these characteristics. On the other hand, the fixed effects logit, Generalized Estimating equations (GEE) and OLS estimates have a mean and range both in $[0,1]$ interval. We could argue that the results from these models are therefore more reliable than from the others.

Table 9: Liklihood of having a coalition government

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	logitfe1	logitre1	logitpa1	probitre1	probitpa1	xtgee1	ols1
main							
lnpcsgdp	1.809	1.059	0.519	0.532	0.328	0.107	-0.0242
	(0.993)	(0.822)	(0.566)	(0.464)	(0.326)	(0.0922)	(0.0644)
pcbanks	-26753.9	-10109.6	-5448.5	-5103.2	-3347.7	-822.6	-16.53
	(24293.9)	(15326.9)	(9220.6)	(8655.4)	(5461.5)	(1600.2)	(838.4)
CD-ratio	-0.0190	-0.0245	-0.0209	-0.0144	-0.0116	-0.00314	-0.00261*
	(0.0187)	(0.0150)	(0.0116)	(0.00842)	(0.00646)	(0.00169)	(0.00115)
Constant		-9.281	-4.432	-4.687	-2.857	-0.504	0.559
		(7.264)	(4.995)	(4.083)	(2.877)	(0.811)	(0.546)
lnsig2u							
Constant		1.039		-0.125			
		(0.607)		(0.581)			
Observations	220	320	320	320	320	320	320
ll	-97.72	-138.6		-138.2			-158.0

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: Liklihood of having a coalition government

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	logitfe1	logitre1	logitpa1	probitre1	probitpa1	xtgee1	ols1
main							
pcbanks	-14713.0	-3912.8	-2840.4	-2015.0	-1650.9	-284.8	-115.4
	(23098.5)	(13753.6)	(8744.8)	(7869.6)	(5164.2)	(1491.9)	(794.9)
CD-ratio	-0.0347*	-0.0289*	-0.0231*	-0.0165*	-0.0123	-0.00346*	-0.00266*
	(0.0169)	(0.0145)	(0.0117)	(0.00822)	(0.00638)	(0.00165)	(0.00114)
Constant		-0.115	0.0420	-0.0935	-0.0628	0.413**	0.357***
		(1.358)	(0.867)	(0.774)	(0.514)	(0.149)	(0.0862)
lnsig2u							
Constant		0.894		-0.235			
		(0.598)		(0.574)			
Observations	220	320	320	320	320	320	320
ll	-99.40	-139.5		-138.9			-158.1

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11: Prediction summary of the binary response regressions

Variable	Observations	Mean	Standard Dev.	Min	Max
Coalition	340	0.2471	0.4319	0	1
logitfe	320	0.05	0.0164	0.0111409	0.1099649
logitre	320	-2.010975	0.5857492	-3.497808	-0.6031956
logitpa	320	0.19949	0.0706421	0.0663225	0.4138539
probitre	320	-1.162138	0.3337106	-2.015521	-0.327044
probitpa	320	-0.1997806	0.0667124	0.0666815	0.3934107
xtgee	320	0.2	0.0690014	0.0200332	0.3552062
ols	320	0.2	0.053353	0.0680852	0.3078046

4. Comments and Conclusion

The importance of credit constraints and negative aggregate shocks cannot be overstated given the recent credit crisis. In this paper, I explore the role such factors can play in determining political outcomes and how these political outcomes in turn can affect the economic ones. I do so by developing a simple model of two period endowment economy with some of the agents being credit constrained and shocks making the distribution of such agents endogenous. These agents seek to smooth consumption and use government expenditure as an insurance mechanism to survive the shocks. They do so by voting for a political entity which promises and has expertise in delivering the required public goods. We show that different types of governments and therefore different spending policies could emerge in equilibrium conditional on the realization of shocks. Thus, this microfounded model builds on the interaction between economic and political factors to derive testable implications of the type of government on its spending policies.

The empirical analysis does lend support to the predictions of the model. Specifically, there exists a strong evidence suggesting that a lower degree of political cohesiveness is associated with higher spending on education. We do not find similar evidence for its influence on other spending categories like agriculture, irrigation or social services. In these cases, other political factors like presence of a particular political party in the government or upcoming elections have a significant influence. These results are obtained using variety of specifications and methodologies and hence have a built in robustness check. It does remain a question worthy of exploration as to why politically less cohesive governments choose spending on education for political maneuvering. We posit that suitability of education expenditure to specifically target certain groups of voters explains the preference. However, a more disaggregate analysis covering a lengthier time period might shed more light on this issue. Use of quantile regression clearly shows that relationship between spending and political cohesiveness is also sensitive to distribution of spending across states. For example, in case of education, we find that states with higher level of spending are more sensitive to degree of political cohesiveness than with the lower ones.

One of the implications of the model is that the credit constraints interact with shocks to determine equilibrium voting strategies of the agents. We take this issue to the data and ask how influential these economic factors are in determining the probability of having a coalition government. The results support this hypothesis of the model. The econometric analysis suggests that higher the credit constraints (as measured by lower credit deposit ratio), lower is the probability of having a coalition government. This result should be taken with a pinch of salt as credit- deposit ratio is only a crude indicator of credit constraints. Commenting on the recent move towards increasing access to banking in India, Kamath et al. (2010) find that having a bank account does not necessarily mean an easier access to credit from banks, but having assets like land certainly do. A more richer analysis, therefore, should include data on asset distribution and changes in landholding patterns over the years in different states. However, such a time series data for different states in India is relatively harder to come by.

Notwithstanding the limitations imposed by the data availability, the theoretical and empirical exer-

cise in this paper signifies a contribution to the literature on political economy and macroeconomics. Its focus on interaction between credit constraints, aggregate shocks and voting is based on the intuition that consumption smoothing should drive political decisions of the agents lacking access to formal insurance mechanisms in order to survive shocks to the economic activity. However, we do assume that there are no credibility issues involved when it comes to implementing the promised policies. As a future extension of this research one could explore the implications of relaxing this assumption.

A

A1. TSCS/Panel Data Regressions

Table 12: Health Regressions-Different Error Processes1

	(1)	(2)	(3)	(4)	(5)	(6)
	Reg_iid	Reg_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.544**	-0.544**	-0.434*	-0.402*	-0.434*	-0.421***
	(0.201)	(0.209)	(0.178)	(0.166)	(0.172)	(0.0923)
left	0.462	0.462*	0.392*	0.375*	0.392	0.356***
	(0.281)	(0.219)	(0.191)	(0.180)	(0.241)	(0.0877)
bjp	0.106	0.106	0.126	0.116	0.126	0.181*
	(0.250)	(0.230)	(0.206)	(0.202)	(0.216)	(0.0827)
congress	0.218	0.218	0.169	0.160	0.169	0.0988
	(0.204)	(0.197)	(0.172)	(0.153)	(0.176)	(0.0573)
regional	0.261	0.261	0.231	0.192	0.231	0.127*
	(0.235)	(0.198)	(0.176)	(0.188)	(0.203)	(0.0626)
coalitio	0.106	0.106	0.0673	0.0280	0.0673	-0.0377
	(0.178)	(0.181)	(0.160)	(0.140)	(0.154)	(0.0542)
election	-0.583***	-0.583***	-0.583***	-0.527***	-0.583***	-0.436***
	(0.146)	(0.154)	(0.154)	(0.149)	(0.144)	(0.0564)
effectvt	-0.0930	-0.0930	-0.0653	-0.0648	-0.0653	-0.0248
	(0.0495)	(0.0553)	(0.0483)	(0.0499)	(0.0425)	(0.0194)
margin	0.00214	0.00214	0.00124	-0.000698	0.00124	0.00134
	(0.00717)	(0.00888)	(0.00755)	(0.00644)	(0.00616)	(0.00257)
alternat	0.109	0.109	0.114	0.137	0.114	0.126*
	(0.128)	(0.159)	(0.142)	(0.128)	(0.111)	(0.0493)
L.health	0.758***	0.758***	0.802***	0.804***	0.802***	0.811***
	(0.0337)	(0.0589)	(0.0536)	(0.0493)	(0.0294)	(0.0237)
Constant	6.324***	6.324**	4.995**	4.737**	4.995**	4.648***
	(1.891)	(2.058)	(1.765)	(1.681)	(1.617)	(0.908)
Observations	323	323	323	323	323	323
r2	0.749	0.749	0.792	0.859		
chi2	925.6	476.5	608.4	603.6	1324.9	2501.8

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 13: Health Regressions-Different Error Processes2

	(1)	(2)	(3)	(4)	(5)	(6)
	Reg_iid	Reg_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.453*	-0.453*	-0.363*	-0.318*	-0.363*	-0.400***
	(0.196)	(0.206)	(0.173)	(0.155)	(0.165)	(0.0810)
left	0.436	0.436*	0.367	0.345	0.367	0.347***
	(0.287)	(0.218)	(0.188)	(0.179)	(0.243)	(0.0853)
bjp	0.118	0.118	0.137	0.123	0.137	0.202*
	(0.252)	(0.230)	(0.203)	(0.202)	(0.214)	(0.0822)
congress	0.203	0.203	0.153	0.135	0.153	0.0933
	(0.206)	(0.202)	(0.173)	(0.158)	(0.176)	(0.0566)
regional	0.185	0.185	0.174	0.129	0.174	0.103
	(0.233)	(0.201)	(0.176)	(0.196)	(0.198)	(0.0555)
coalitio	0.0237	0.0237	-0.00218	-0.0428	-0.00218	-0.0582
	(0.200)	(0.193)	(0.170)	(0.157)	(0.172)	(0.0545)
election	-0.593***	-0.593***	-0.588***	-0.538***	-0.588***	-0.460***
	(0.146)	(0.156)	(0.156)	(0.151)	(0.145)	(0.0538)
effectst	-0.0435	-0.0435	-0.0256	-0.0237	-0.0256	-0.00950
	(0.0735)	(0.0742)	(0.0634)	(0.0624)	(0.0625)	(0.0220)
margin	0.00123	0.00123	0.000525	-0.000826	0.000525	0.000943
	(0.00721)	(0.00905)	(0.00758)	(0.00646)	(0.00611)	(0.00257)
alternat	0.0962	0.0962	0.106	0.117	0.106	0.134**
	(0.129)	(0.160)	(0.142)	(0.130)	(0.111)	(0.0465)
L.health	0.779***	0.779***	0.820***	0.824***	0.820***	0.824***
	(0.0318)	(0.0570)	(0.0516)	(0.0468)	(0.0273)	(0.0214)
Constant	5.178**	5.178**	4.099*	3.709*	4.099**	4.308***
	(1.788)	(1.922)	(1.623)	(1.450)	(1.506)	(0.768)
Observations	323	323	323	323	323	323
r2	0.746	0.746	0.794	0.858		
chi2	913.1	456.8	602.9	578.1	1346.9	2905.4

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14: Health Regressions-Per Capita SGDP and LDV_1

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	0.498	0.194	0.599	0.345
	(0.504)	(0.170)	(0.428)	(0.179)
bjp	-0.399	-0.0493	-0.199	0.123
	(0.516)	(0.182)	(0.494)	(0.202)
congress	0.147	0.0323	0.146	0.135
	(0.337)	(0.151)	(0.339)	(0.158)
regional	-0.413	-0.0133	-0.369	0.129
	(0.447)	(0.199)	(0.425)	(0.196)
coalitio	-0.0895	-0.0236	-0.0373	-0.0428
	(0.335)	(0.157)	(0.315)	(0.157)
election	-0.301*	-0.550***	-0.334*	-0.538***
	(0.150)	(0.153)	(0.146)	(0.151)
effectst	-0.233	-0.0157	-0.214	-0.0237
	(0.171)	(0.0629)	(0.149)	(0.0624)
margin	0.00919	-0.000224	0.00409	-0.000826
	(0.0149)	(0.00636)	(0.0145)	(0.00646)
alternat	0.383	0.0752	0.374	0.117
	(0.260)	(0.124)	(0.252)	(0.130)
L.health		0.844***		0.824***
		(0.0445)		(0.0468)
lnpcsgdp			-2.943***	-0.318*
			(0.824)	(0.155)
Constant	7.231***	0.867*	33.20***	3.709*
	(0.861)	(0.395)	(7.206)	(1.450)
Observations	340	323	340	323
r2	0.562	0.857	0.586	0.858
chi2	15.38	487.1	29.76	578.1

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15: Health Regressions-Per Capita SGDP and LDV_2

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	0.458	0.188	0.833	0.375*
	(0.510)	(0.175)	(0.443)	(0.180)
bjp	-0.392	-0.0745	0.106	0.116
	(0.505)	(0.189)	(0.460)	(0.202)
congress	0.169	0.0319	0.383	0.160
	(0.315)	(0.152)	(0.307)	(0.153)
regional	-0.165	-0.00107	0.283	0.192
	(0.413)	(0.199)	(0.384)	(0.188)
coalitio	-0.0948	0.0131	0.0186	0.0280
	(0.291)	(0.141)	(0.276)	(0.140)
election	-0.246	-0.549***	-0.272	-0.527***
	(0.144)	(0.152)	(0.141)	(0.149)
effectvt	-0.472***	-0.0319	-0.535***	-0.0648
	(0.122)	(0.0468)	(0.110)	(0.0499)
margin	0.00532	0.0000957	-0.000415	-0.000698
	(0.0140)	(0.00630)	(0.0132)	(0.00644)
alternat	0.476*	0.0748	0.463*	0.137
	(0.238)	(0.120)	(0.234)	(0.128)
L.health		0.837***		0.804***
		(0.0456)		(0.0493)
lnpcsgdp			-2.998***	-0.402*
			(0.711)	(0.166)
Constant	8.608***	0.997*	34.94***	4.737**
	(0.877)	(0.465)	(6.294)	(1.681)
Observations	340	323	340	323
r2	0.627	0.856	0.664	0.859
chi2	31.28	489.8	47.43	603.6

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 16: Health Regressions-Fixed Effects vs. Random Effects

	(1)	(2)	(3)	(4)
	Hth_regar1	Hth_regar2	Hth_regar3	Hth_regar4
lnpcsgdp	-3.593***	-2.800***	-3.222***	-2.753***
	(0.707)	(0.771)	(0.494)	(0.523)
left	0.366	0.288	0.689	0.611
	(0.655)	(0.652)	(0.560)	(0.579)
bjp	-0.0109	-0.147	-0.0738	-0.136
	(0.471)	(0.477)	(0.469)	(0.481)
congress	0.238	0.167	0.391	0.357
	(0.350)	(0.355)	(0.353)	(0.361)
regional	-0.489	-0.679	0.00373	-0.233
	(0.484)	(0.488)	(0.457)	(0.467)
election	-0.251*	-0.305**	-0.298*	-0.353**
	(0.113)	(0.110)	(0.122)	(0.120)
coalitio	-0.0479	0.0258	0.0558	-0.0243
	(0.283)	(0.311)	(0.293)	(0.329)
effectvt	-0.429***		-0.504***	
	(0.127)		(0.107)	
margin	-0.00475	-0.00113	0.000649	0.00205
	(0.0130)	(0.0137)	(0.0133)	(0.0139)
alternat	0.691**	0.550*	0.483*	0.365
	(0.216)	(0.216)	(0.215)	(0.218)
effectst		-0.145		-0.207
		(0.191)		(0.164)
Constant	39.39***	30.95***	36.73***	31.26***
	(2.314)	(2.139)	(4.376)	(4.631)
Observations	323	323	340	340
r2				
Wald				
chi2			89.25	52.35
F	5.880	3.317		

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 17: Irrigation Regressions-Different Error Processes1

	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled_OLS_iid	Pooled_OLS_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	0.0926	0.0926	0.126	0.0678	0.126	0.220
	(0.297)	(0.325)	(0.334)	(0.326)	(0.300)	(0.125)
left	-0.488	-0.488	-0.550	-0.491	-0.550	-0.481***
	(0.451)	(0.453)	(0.464)	(0.464)	(0.455)	(0.0826)
bjp	-0.0566	-0.0566	-0.0636	0.0546	-0.0636	0.0806
	(0.389)	(0.388)	(0.399)	(0.387)	(0.392)	(0.0874)
congress	-0.375	-0.375	-0.422	-0.378	-0.422	-0.316***
	(0.328)	(0.363)	(0.373)	(0.348)	(0.330)	(0.0945)
regional	-0.559	-0.559	-0.612	-0.561	-0.612	-0.663***
	(0.390)	(0.451)	(0.463)	(0.429)	(0.393)	(0.0922)
coalitio	-0.336	-0.336	-0.359	-0.403	-0.359	-0.349***
	(0.278)	(0.305)	(0.310)	(0.306)	(0.280)	(0.0451)
election	0.558*	0.558*	0.543*	0.574**	0.543*	0.469***
	(0.224)	(0.233)	(0.231)	(0.200)	(0.218)	(0.0461)
effectvt	-0.0300	-0.0300	-0.0273	-0.0436	-0.0273	0.00935
	(0.0714)	(0.0635)	(0.0653)	(0.0632)	(0.0721)	(0.0182)
margin	0.0189	0.0189	0.0192	0.0220	0.0192	0.0195***
	(0.0110)	(0.0117)	(0.0120)	(0.0137)	(0.0111)	(0.00250)
alternat	-0.150	-0.150	-0.152	-0.0409	-0.152	-0.308***
	(0.198)	(0.210)	(0.216)	(0.220)	(0.199)	(0.0682)
L.irrigation	0.842***	0.842***	0.831***	0.833***	0.831***	0.832***
	(0.0320)	(0.0488)	(0.0503)	(0.0524)	(0.0322)	(0.0186)
Constant	0.253	0.253	0.0470	0.541	0.0470	-1.075
	(2.546)	(2.899)	(2.982)	(2.801)	(2.573)	(1.116)
Observations	323	323	323	323	323	323
r2	0.771	0.771	0.757	0.818		
chi2	1047.9	640.9	594.4	750.8	1009.6	13689.3

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 18: Irrigation Regressions-Different Error Processes2

	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled_OLS_iid	Pooled_OLS_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	0.106	0.106	0.138	0.0985	0.138	0.191
	(0.296)	(0.317)	(0.325)	(0.326)	(0.298)	(0.121)
left	-0.441	-0.441	-0.505	-0.446	-0.505	-0.433***
	(0.457)	(0.460)	(0.471)	(0.461)	(0.461)	(0.0901)
bjp	-0.0450	-0.0450	-0.0529	0.0757	-0.0529	0.0843
	(0.389)	(0.385)	(0.395)	(0.382)	(0.392)	(0.0979)
congress	-0.355	-0.355	-0.403	-0.341	-0.403	-0.294**
	(0.329)	(0.368)	(0.377)	(0.353)	(0.331)	(0.0992)
regional	-0.558	-0.558	-0.609	-0.566	-0.609	-0.601***
	(0.388)	(0.449)	(0.460)	(0.425)	(0.390)	(0.0899)
coalitio	-0.261	-0.261	-0.285	-0.297	-0.285	-0.281***
	(0.314)	(0.340)	(0.346)	(0.341)	(0.315)	(0.0469)
election	0.556*	0.556*	0.541*	0.573**	0.541*	0.454***
	(0.224)	(0.234)	(0.232)	(0.201)	(0.218)	(0.0448)
effectst	-0.0751	-0.0751	-0.0716	-0.106	-0.0716	-0.0389
	(0.112)	(0.0899)	(0.0918)	(0.101)	(0.113)	(0.0213)
margin	0.0184	0.0184	0.0186	0.0209	0.0186	0.0191***
	(0.0110)	(0.0116)	(0.0119)	(0.0138)	(0.0111)	(0.00255)
alternat	-0.145	-0.145	-0.147	-0.0312	-0.147	-0.254***
	(0.198)	(0.211)	(0.216)	(0.221)	(0.199)	(0.0753)
L.irrigation	0.843***	0.843***	0.832***	0.832***	0.832***	0.829***
	(0.0319)	(0.0487)	(0.0502)	(0.0526)	(0.0321)	(0.0176)
Constant	0.175	0.175	-0.0162	0.336	-0.0162	-0.716
	(2.500)	(2.787)	(2.865)	(2.758)	(2.525)	(1.066)
Observations	323	323	323	323	323	323
r2	0.771	0.771	0.757	0.820		
chi2	1049.1	640.7	594.9	759.8	1011.7	12817.9

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 19: Irrigation Regressions-Per Capita SGDP and LDV_1

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	-1.871**	-0.403	-2.119***	-0.446
	(0.625)	(0.451)	(0.610)	(0.461)
bjp	0.322	0.104	-0.159	0.0757
	(0.689)	(0.402)	(0.670)	(0.382)
congress	-1.465*	-0.318	-1.746**	-0.341
	(0.585)	(0.356)	(0.561)	(0.353)
regional	-0.815	-0.519	-1.320	-0.566
	(0.718)	(0.414)	(0.728)	(0.425)
coalitio	-0.974*	-0.306	-0.897*	-0.297
	(0.431)	(0.341)	(0.432)	(0.341)
election	0.127	0.575**	0.132	0.573**
	(0.162)	(0.201)	(0.163)	(0.201)
effectst	0.121	-0.101	0.0636	-0.106
	(0.191)	(0.100)	(0.193)	(0.101)
margin	0.0349	0.0205	0.0376	0.0209
	(0.0203)	(0.0138)	(0.0200)	(0.0138)
alternat	-0.255	-0.0176	-0.223	-0.0312
	(0.362)	(0.208)	(0.366)	(0.221)
L.irrigation		0.837***		0.832***
		(0.0502)		(0.0526)
lnpcsgdp			1.832*	0.0985
			(0.912)	(0.326)
Constant	5.552***	1.132	-10.18	0.336
	(0.921)	(0.613)	(8.057)	(2.758)
Observations	340	323	340	323
r2	0.161	0.820	0.201	0.820
chi2	20.16	751.6	23.68	759.8

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 20: Irrigation Regressions-Per Capita SGDP and LDV_2

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	-1.855**	-0.458	-2.099***	-0.491
	(0.627)	(0.456)	(0.611)	(0.464)
bjp	0.286	0.0759	-0.205	0.0546
	(0.687)	(0.409)	(0.663)	(0.387)
congress	-1.460*	-0.359	-1.753**	-0.378
	(0.583)	(0.350)	(0.558)	(0.348)
regional	-0.932	-0.525	-1.411	-0.561
	(0.708)	(0.416)	(0.724)	(0.429)
coalitio	-0.956*	-0.403	-0.921*	-0.403
	(0.408)	(0.306)	(0.407)	(0.306)
election	0.104	0.575**	0.111	0.574**
	(0.161)	(0.200)	(0.161)	(0.200)
effectvt	0.228	-0.0434	0.216	-0.0436
	(0.146)	(0.0630)	(0.139)	(0.0632)
margin	0.0363	0.0217	0.0405*	0.0220
	(0.0201)	(0.0137)	(0.0198)	(0.0137)
alternat	-0.295	-0.0317	-0.282	-0.0409
	(0.374)	(0.207)	(0.375)	(0.220)
L.irrigation		0.836***		0.833***
		(0.0504)		(0.0524)
lnpcsgdp			1.873*	0.0678
			(0.916)	(0.326)
Constant	4.950***	1.094	-11.20	0.541
	(0.961)	(0.631)	(8.126)	(2.801)
Observations	340	323	340	323
r2	0.161	0.819	0.205	0.818
chi2	24.79	744.8	27.08	750.8

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 21: Irrigation Regressions-Fixed Effects vs. Random Effects

	(1)	(2)	(3)	(4)
	Irr_regar1	Irr_regar2	Irr_regar3	Irr_regar4
lnpcsgdp	-1.391	-1.334	0.721	0.780
	(1.093)	(1.101)	(0.831)	(0.833)
left	-1.358	-1.287	-1.419	-1.429
	(0.934)	(0.944)	(0.823)	(0.832)
bjp	-0.371	-0.199	-0.0549	0.0307
	(0.686)	(0.689)	(0.661)	(0.664)
congress	-1.486**	-1.385**	-1.480**	-1.448**
	(0.507)	(0.512)	(0.489)	(0.494)
regional	-0.765	-0.590	-0.894	-0.794
	(0.702)	(0.705)	(0.663)	(0.666)
election	0.0635	0.110	0.0888	0.126
	(0.159)	(0.159)	(0.161)	(0.161)
coalitio	-0.900*	-1.018*	-0.966*	-1.011*
	(0.413)	(0.449)	(0.405)	(0.444)
effectvt	0.461*		0.354*	
	(0.188)		(0.165)	
margin	0.0422*	0.0362	0.0341	0.0306
	(0.0191)	(0.0197)	(0.0186)	(0.0190)
alternat	-0.309	-0.155	-0.408	-0.296
	(0.315)	(0.311)	(0.299)	(0.296)
effectst		0.217		0.186
		(0.275)		(0.241)
Constant	16.29***	17.06***	-2.130	-1.749
	(3.088)	(3.129)	(7.351)	(7.388)
Observations	323	323	340	340
r2				
Wald				
chi2			24.59	20.41
F	2.442	1.866		

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 22: Agriculture Regressions-Different Error Processes1

	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled_OLS_iid	Pooled_OLS_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.586	-0.586	-0.530	-0.699	-0.530	-0.445**
	(0.413)	(0.501)	(0.480)	(0.495)	(0.390)	(0.144)
left	0.342	0.342	0.343	0.442	0.343	0.368*
	(0.591)	(0.400)	(0.383)	(0.409)	(0.559)	(0.175)
bjp	0.237	0.237	0.238	0.310	0.238	0.303**
	(0.543)	(0.398)	(0.381)	(0.386)	(0.514)	(0.111)
congress	0.383	0.383	0.353	0.399	0.353	0.317***
	(0.445)	(0.310)	(0.296)	(0.302)	(0.422)	(0.0902)
regional	0.357	0.357	0.340	0.392	0.340	0.359***
	(0.503)	(0.354)	(0.338)	(0.348)	(0.476)	(0.101)
coalitio	0.380	0.380	0.355	0.460	0.355	0.370***
	(0.384)	(0.361)	(0.347)	(0.348)	(0.364)	(0.0849)
election	-0.609	-0.609	-0.604	-0.528	-0.604	-0.435***
	(0.315)	(0.393)	(0.396)	(0.388)	(0.311)	(0.0747)
effectvt	-0.207*	-0.207*	-0.190*	-0.237**	-0.190	-0.160***
	(0.104)	(0.0907)	(0.0865)	(0.0879)	(0.0986)	(0.0277)
margin	0.0174	0.0174	0.0167	0.0169	0.0167	0.0152***
	(0.0156)	(0.0124)	(0.0119)	(0.0117)	(0.0148)	(0.00348)
alternat	0.788**	0.788	0.757	0.915*	0.757**	0.580***
	(0.277)	(0.405)	(0.393)	(0.400)	(0.263)	(0.0869)
L.agriculture	0.803***	0.803***	0.814***	0.814***	0.814***	0.840***
	(0.0308)	(0.0640)	(0.0617)	(0.0598)	(0.0292)	(0.0193)
Constant	6.466	6.466	5.832	7.307	5.832	4.799***
	(3.740)	(4.669)	(4.473)	(4.576)	(3.527)	(1.350)
Observations	323	323	323	323	323	323
r2	0.767	0.767	0.780	0.823		
chi2	1024.1	235.3	255.8	258.7	1165.3	3581.1

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 23: Agriculture Regressions-Different Error Processes2

	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled_OLS_iid	Pooled_OLS_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.445	-0.445	-0.386	-0.475	-0.386	-0.361***
	(0.407)	(0.487)	(0.461)	(0.465)	(0.379)	(0.106)
left	0.454	0.454	0.448	0.528	0.448	0.567***
	(0.602)	(0.407)	(0.383)	(0.415)	(0.562)	(0.143)
bjp	0.274	0.274	0.274	0.336	0.274	0.397***
	(0.545)	(0.404)	(0.380)	(0.387)	(0.510)	(0.0833)
congress	0.391	0.391	0.352	0.361	0.352	0.379***
	(0.448)	(0.310)	(0.291)	(0.298)	(0.420)	(0.0731)
regional	0.253	0.253	0.243	0.250	0.243	0.328***
	(0.500)	(0.337)	(0.315)	(0.323)	(0.467)	(0.0825)
coalitio	0.391	0.391	0.360	0.443	0.360	0.376***
	(0.434)	(0.397)	(0.376)	(0.386)	(0.407)	(0.0600)
election	-0.624*	-0.624	-0.614	-0.547	-0.614*	-0.569***
	(0.316)	(0.397)	(0.401)	(0.395)	(0.313)	(0.0497)
effectst	-0.215	-0.215	-0.195	-0.228	-0.195	-0.178***
	(0.159)	(0.119)	(0.113)	(0.118)	(0.148)	(0.0296)
margin	0.0149	0.0149	0.0141	0.0147	0.0141	0.0125***
	(0.0157)	(0.0124)	(0.0117)	(0.0117)	(0.0146)	(0.00229)
alternat	0.772**	0.772	0.735	0.839*	0.735**	0.664***
	(0.278)	(0.412)	(0.396)	(0.405)	(0.261)	(0.0595)
L.agriculture	0.816***	0.816***	0.830***	0.832***	0.830***	0.852***
	(0.0298)	(0.0653)	(0.0621)	(0.0607)	(0.0279)	(0.0170)
Constant	4.847	4.847	4.192	4.895	4.192	3.707***
	(3.608)	(4.440)	(4.198)	(4.191)	(3.355)	(0.996)
Observations	323	323	323	323	323	323
r2	0.765	0.765	0.784	0.821		
chi2	1015.2	257.0	288.1	300.3	1193.2	7340.1

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 24: Agriculture Regressions-Per Capita SGDP and LDV_1

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	-0.0898	0.394	-0.0483	0.528
	(0.940)	(0.421)	(0.881)	(0.415)
bjp	0.383	0.173	0.483	0.336
	(0.941)	(0.390)	(0.984)	(0.387)
congress	1.078	0.268	0.888	0.361
	(0.693)	(0.297)	(0.697)	(0.298)
regional	-0.0927	0.0667	0.115	0.250
	(0.803)	(0.339)	(0.804)	(0.323)
coalitio	0.336	0.461	0.417	0.443
	(0.633)	(0.383)	(0.606)	(0.386)
election	-0.338	-0.545	-0.348	-0.547
	(0.316)	(0.399)	(0.312)	(0.395)
effectst	-0.579*	-0.212	-0.549*	-0.228
	(0.234)	(0.121)	(0.219)	(0.118)
margin	0.0321	0.0174	0.0314	0.0147
	(0.0255)	(0.0118)	(0.0247)	(0.0117)
alternat	2.082***	0.747	2.089***	0.839*
	(0.608)	(0.395)	(0.587)	(0.405)
L.agriculture		0.841***		0.832***
		(0.0616)		(0.0607)
lnpcsgdp			-4.440*	-0.475
			(1.907)	(0.465)
Constant	9.769***	0.723	48.52**	4.895
	(1.740)	(0.828)	(16.73)	(4.191)
Observations	340	323	340	323
r2	0.476	0.823	0.501	0.821
chi2	25.31	294.7	30.05	300.3

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 25: Agriculture Regressions-Per Capita SGDP and LDV_2

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	0.262	0.246	0.519	0.442
	(0.877)	(0.410)	(0.833)	(0.409)
bjp	0.753	0.0849	0.939	0.310
	(0.882)	(0.392)	(0.920)	(0.386)
congress	1.356*	0.246	1.287	0.399
	(0.676)	(0.292)	(0.680)	(0.302)
regional	0.424	0.0902	0.831	0.392
	(0.798)	(0.344)	(0.790)	(0.348)
coalitio	0.296	0.445	0.360	0.460
	(0.553)	(0.350)	(0.538)	(0.348)
election	-0.244	-0.533	-0.242	-0.528
	(0.293)	(0.396)	(0.288)	(0.388)
effectvt	-1.053***	-0.187*	-1.132***	-0.237**
	(0.229)	(0.0797)	(0.231)	(0.0879)
margin	0.0195	0.0204	0.0170	0.0169
	(0.0251)	(0.0120)	(0.0244)	(0.0117)
alternat	2.329***	0.761	2.457***	0.915*
	(0.580)	(0.389)	(0.561)	(0.400)
L.agriculture		0.831***		0.814***
		(0.0609)		(0.0598)
lnpcsgdp			-4.855**	-0.699
			(1.626)	(0.495)
Constant	12.59***	1.021	55.30***	7.307
	(1.788)	(0.775)	(14.91)	(4.576)
Observations	340	323	340	323
r2	0.507	0.824	0.545	0.823
chi2	40.63	248.6	42.33	258.7

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 26: Agriculture Regressions-Fixed Effects vs. Random Effects

	(1)	(2)	(3)	(4)
	Agr_regar1	Agr_regar2	Agr_regar3	Agr_regar4
lnpcsgdp	-5.368***	-3.808*	-7.252***	-6.290***
	(1.470)	(1.626)	(1.162)	(1.245)
left	0.644	0.580	0.389	0.416
	(1.319)	(1.315)	(1.189)	(1.222)
bjp	0.421	-0.0328	0.495	0.135
	(0.956)	(0.973)	(0.954)	(0.985)
congress	0.813	0.534	0.954	0.798
	(0.709)	(0.722)	(0.708)	(0.731)
regional	-0.458	-1.011	-0.383	-0.900
	(0.982)	(0.993)	(0.956)	(0.981)
election	-0.133	-0.271	-0.186	-0.328
	(0.226)	(0.221)	(0.237)	(0.234)
coalitio	0.434	0.864	0.360	0.577
	(0.575)	(0.634)	(0.585)	(0.659)
effectvt	-1.070***		-1.231***	
	(0.259)		(0.234)	
margin	0.0149	0.0171	0.0222	0.0258
	(0.0265)	(0.0279)	(0.0267)	(0.0283)
alternat	2.751***	2.464***	2.650***	2.330***
	(0.439)	(0.439)	(0.431)	(0.440)
effectst		-0.653		-0.688
		(0.390)		(0.356)
Constant	58.21***	41.64***	76.43***	65.14***
	(4.554)	(4.111)	(10.27)	(11.04)
Observations	323	323	340	340
r2				
Wald				
chi2			110.3	66.75
F	6.820	4.520		

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 27: Social Expenditure Regressions-Different Error Processes1

	(1)	(2)	(3)	(4)	(5)	(6)
	Reg_iid	Reg_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.122	-0.122	-0.130	-0.207	-0.130	-0.0698
	(0.215)	(0.222)	(0.224)	(0.210)	(0.213)	(0.0395)
left	-0.289	-0.289	-0.286	-0.144	-0.286	-0.254***
	(0.307)	(0.178)	(0.179)	(0.202)	(0.304)	(0.0362)
bjp	-0.552	-0.552**	-0.555**	-0.430*	-0.555*	-0.509***
	(0.285)	(0.197)	(0.199)	(0.177)	(0.282)	(0.0446)
congress	-0.451*	-0.451*	-0.451*	-0.333	-0.451*	-0.409***
	(0.228)	(0.180)	(0.182)	(0.174)	(0.225)	(0.0353)
regional	-0.240	-0.240	-0.238	-0.171	-0.238	-0.170*
	(0.260)	(0.262)	(0.264)	(0.277)	(0.258)	(0.0760)
coalitio	0.0877	0.0877	0.0885	0.123	0.0885	0.0854***
	(0.198)	(0.183)	(0.184)	(0.196)	(0.196)	(0.0205)
election	-0.228	-0.228	-0.227	-0.225	-0.227	-0.222***
	(0.163)	(0.177)	(0.177)	(0.171)	(0.159)	(0.0138)
effectvt	-0.0542	-0.0542	-0.0555	-0.0834	-0.0555	-0.0521***
	(0.0520)	(0.0558)	(0.0563)	(0.0546)	(0.0515)	(0.00977)
margin	0.00593	0.00593	0.00612	0.00570	0.00612	0.00715***
	(0.00796)	(0.00913)	(0.00921)	(0.00873)	(0.00788)	(0.00165)
alternat	0.273	0.273	0.278	0.255	0.278	0.245***
	(0.144)	(0.181)	(0.182)	(0.172)	(0.142)	(0.0197)
L.socialse	0.715***	0.715***	0.711***	0.701***	0.711***	0.722***
	(0.0365)	(0.0786)	(0.0791)	(0.0818)	(0.0361)	(0.0146)
Constant	2.034	2.034	2.116	2.827	2.116	1.488***
	(1.921)	(2.069)	(2.089)	(1.964)	(1.903)	(0.363)
Observations	323	323	323	323	323	323
r2	0.617	0.617	0.612	0.625		
chi2	501.6	340.0	331.9	356.9	508.5	5784.7

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 28: Social Expenditure Regressions-Different Error Processes2

	(1)	(2)	(3)	(4)	(5)	(6)
	Reg_iid	Reg_cor	Reg_AR1_cor	Reg_AR1_psarcor	FGLSAR1	FGLSCAR
lnpcsgdp	-0.0900	-0.0900	-0.104	-0.156	-0.104	-0.0425
	(0.213)	(0.216)	(0.219)	(0.212)	(0.213)	(0.0381)
left	-0.274	-0.274	-0.268	-0.107	-0.268	-0.240***
	(0.312)	(0.176)	(0.179)	(0.203)	(0.311)	(0.0361)
bjp	-0.539	-0.539**	-0.545**	-0.403*	-0.545	-0.495***
	(0.285)	(0.198)	(0.201)	(0.188)	(0.284)	(0.0426)
congress	-0.447	-0.447*	-0.448*	-0.304	-0.448*	-0.400***
	(0.229)	(0.179)	(0.182)	(0.180)	(0.228)	(0.0336)
regional	-0.272	-0.272	-0.269	-0.184	-0.269	-0.202*
	(0.259)	(0.249)	(0.253)	(0.280)	(0.258)	(0.0793)
coalitio	0.0524	0.0524	0.0517	0.0289	0.0517	0.0456*
	(0.225)	(0.194)	(0.197)	(0.210)	(0.224)	(0.0219)
election	-0.227	-0.227	-0.227	-0.225	-0.227	-0.222***
	(0.163)	(0.178)	(0.177)	(0.171)	(0.159)	(0.0139)
effectst	-0.0342	-0.0342	-0.0351	-0.0366	-0.0351	-0.0349**
	(0.0816)	(0.0578)	(0.0588)	(0.0610)	(0.0814)	(0.0115)
margin	0.00574	0.00574	0.00610	0.00444	0.00610	0.00651***
	(0.00800)	(0.00922)	(0.00937)	(0.00867)	(0.00798)	(0.00180)
alternat	0.264	0.264	0.272	0.252	0.272	0.238***
	(0.144)	(0.182)	(0.184)	(0.175)	(0.144)	(0.0204)
L.socialse	0.719***	0.719***	0.712***	0.711***	0.712***	0.721***
	(0.0364)	(0.0796)	(0.0807)	(0.0833)	(0.0362)	(0.0139)
Constant	1.625	1.625	1.760	2.118	1.760	1.153***
	(1.876)	(1.934)	(1.969)	(1.876)	(1.874)	(0.342)
Observations	323	323	323	323	323	323
r2	0.616	0.616	0.607	0.619		
chi2	499.3	334.2	319.1	328.4	495.3	6598.0

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 29: Social Expenditure Regressions-Per Capita SGDP and LDV_1

	(1)	(2)	(3)	(4)
	Reg_AR1_psarcor	Reg_AR2_psarcor	Reg_AR3_psarcor	Reg_AR4_psarcor
left	0.0388	-0.163	0.0167	-0.107
	(0.317)	(0.167)	(0.298)	(0.203)
bjp	-1.064***	-0.489**	-0.691*	-0.403*
	(0.319)	(0.166)	(0.319)	(0.188)
congress	-0.731**	-0.353*	-0.654*	-0.304
	(0.272)	(0.162)	(0.270)	(0.180)
regional	-0.821	-0.261	-0.717	-0.184
	(0.525)	(0.247)	(0.504)	(0.280)
coalitio	0.303	0.0536	0.215	0.0289
	(0.266)	(0.200)	(0.263)	(0.210)
election	-0.139	-0.227	-0.137	-0.225
	(0.130)	(0.171)	(0.130)	(0.171)
effectst	-0.421**	-0.0451	-0.329*	-0.0366
	(0.142)	(0.0594)	(0.129)	(0.0610)
margin	0.0279	0.00448	0.0266	0.00444
	(0.0147)	(0.00869)	(0.0147)	(0.00867)
alternat	0.760**	0.236	0.733**	0.252
	(0.284)	(0.169)	(0.276)	(0.175)
L.socialse		0.722***		0.711***
		(0.0767)		(0.0833)
lnpcsgdp			-1.545**	-0.156
			(0.597)	(0.212)
Constant	3.462***	0.801*	16.86**	2.118
	(0.609)	(0.342)	(5.295)	(1.876)
Observations	340	323	340	323
r2	0.207	0.621	0.226	0.619
chi2	27.66	278.3	32.59	328.4

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

A2. Quantile Regression Results-Figures

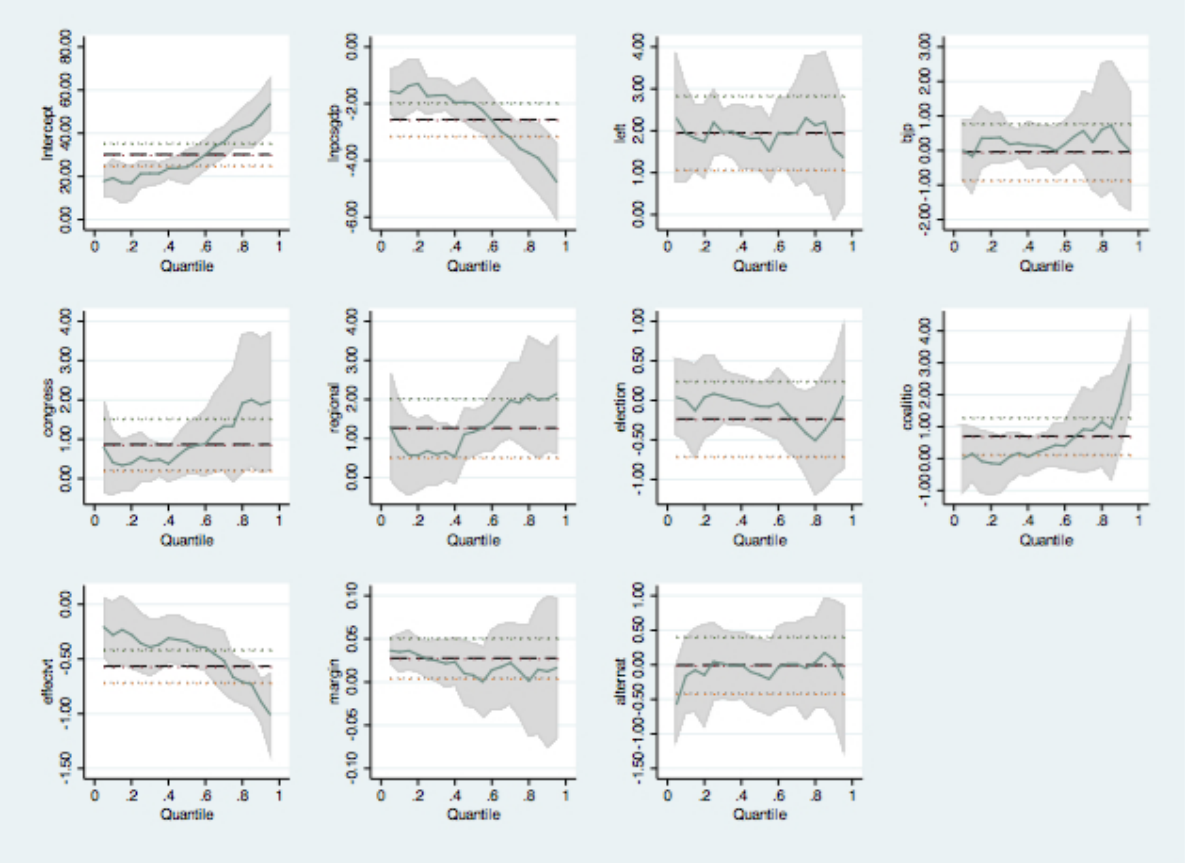

Figure 2: Behavior of coefficients on regressors across quantiles for Quantile Regression of Health expenditure

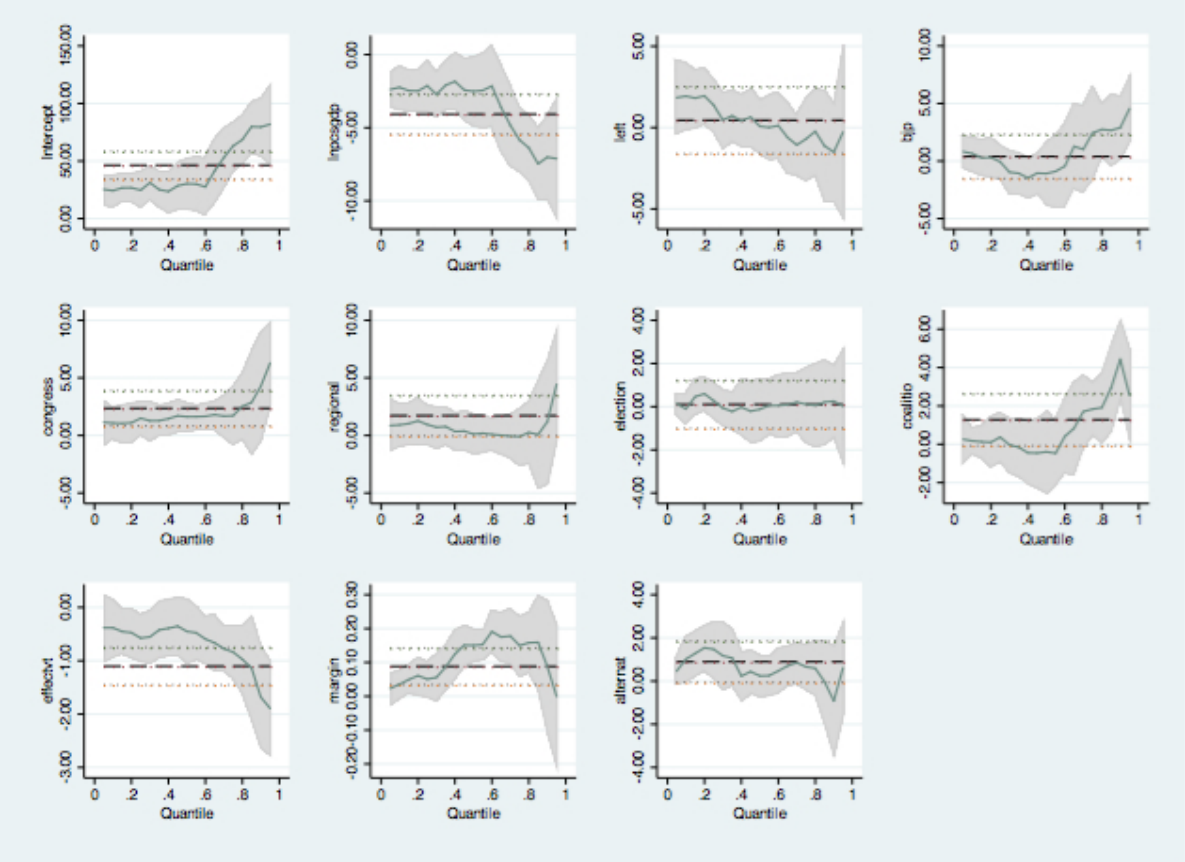

Figure 3: Behavior of coefficients on regressors across quantiles for Quantile Regression of Agricultural expenditure

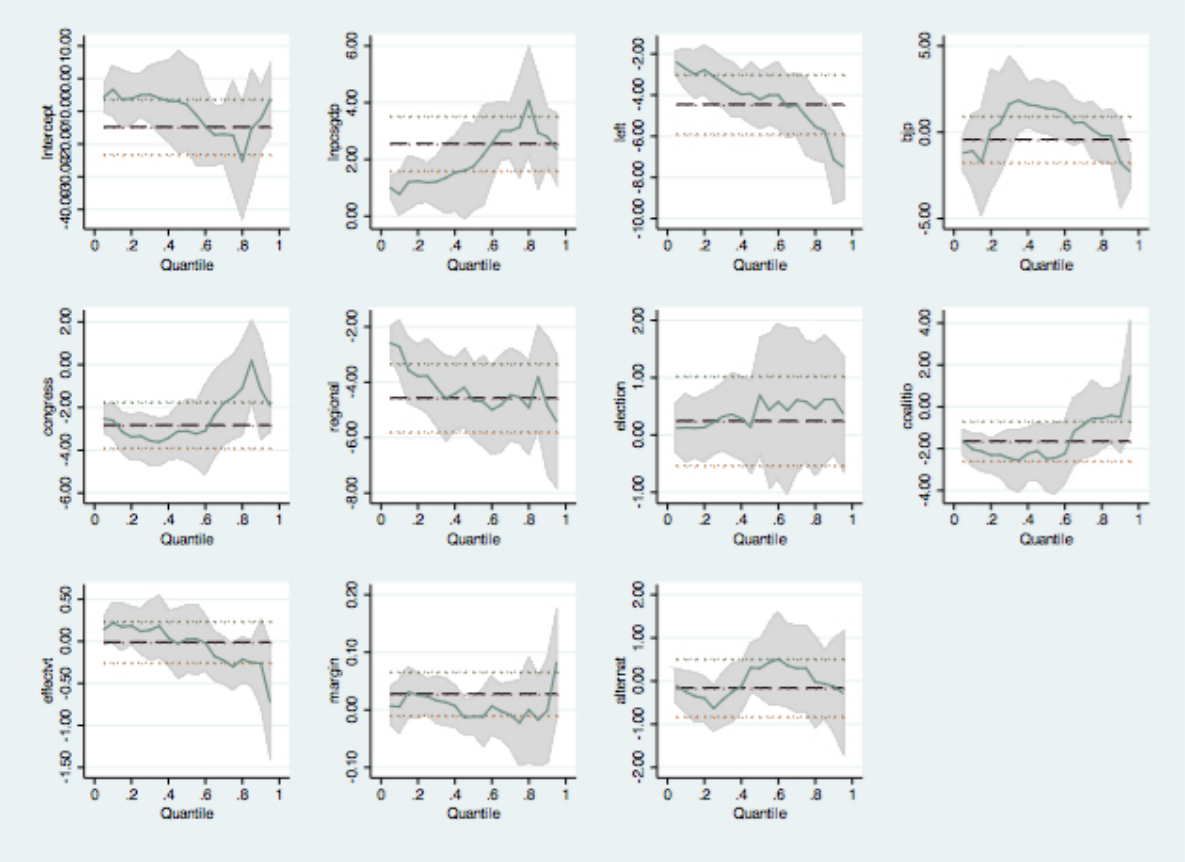

Figure 4: Behavior of coefficients on regressors across quantiles for Quantile Regression of Irrigation expenditure

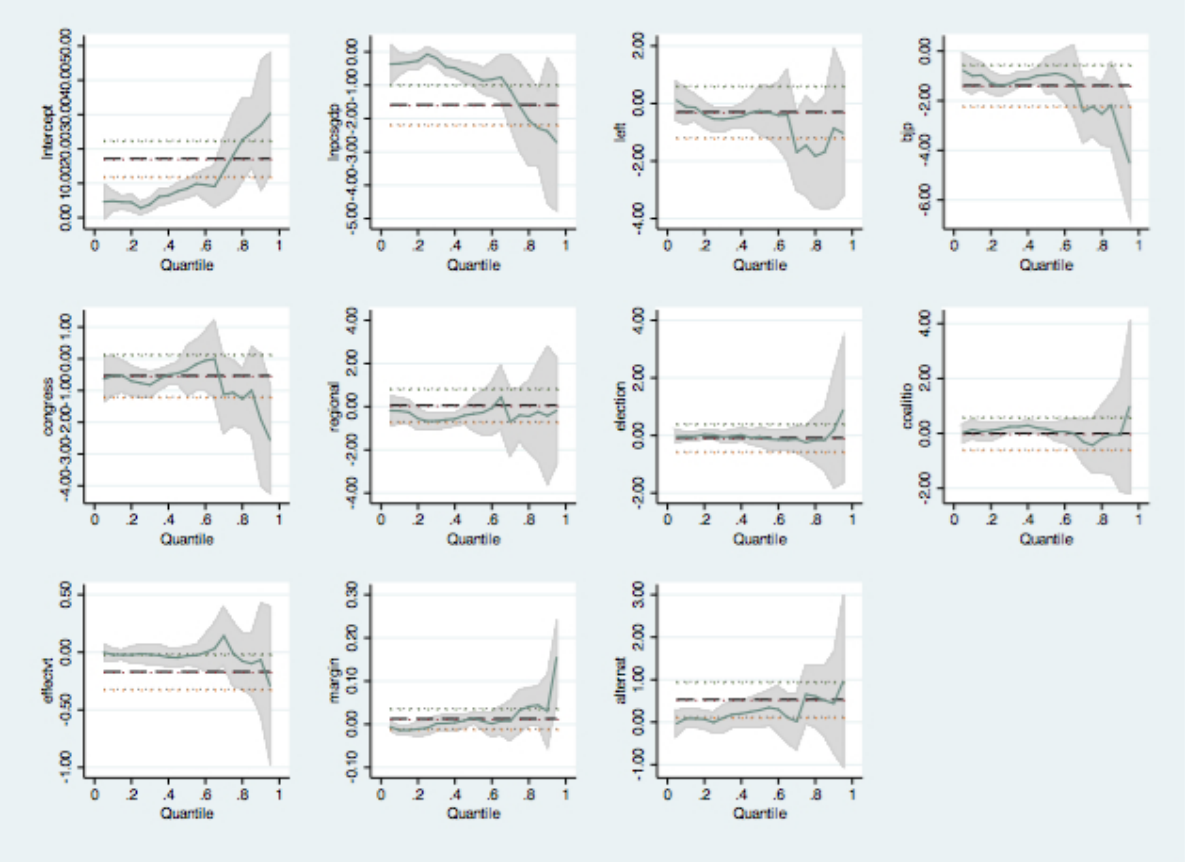

Figure 5: Behavior of coefficients on regressors across quantiles for Quantile Regression of Social expenditure

A3. Quantile Regression Results-Tables

Table 32: Health Regressions-Various Quantiles_1

	(1)	(2)	(3)	(4)	(5)
	hth_OLS	hth_qreg_25	hth_qreg_50	hth_qreg_75	hth_bsqreg_50
lnpcsgdp	-2.560***	-1.739***	-1.979***	-3.577***	-1.979***
	(-8.55)	(-5.35)	(-6.34)	(-7.65)	(-6.19)
left	1.951***	2.198***	1.826***	2.305**	1.826***
	(4.35)	(4.72)	(3.86)	(3.16)	(4.24)
bjp	-0.0411	0.375	0.115	0.239	0.115
	(-0.10)	(0.87)	(0.26)	(0.37)	(0.39)
congress	0.869**	0.550	0.767*	1.332*	0.767*
	(2.60)	(1.49)	(2.16)	(2.59)	(2.11)
regional	1.270**	0.682	1.166**	1.911**	1.166**
	(3.32)	(1.69)	(2.89)	(3.18)	(3.00)
election	-0.235	0.0826	-0.0750	-0.416	-0.0750
	(-0.97)	(0.32)	(-0.29)	(-1.10)	(-0.38)
coalitio	0.705*	-0.170	0.303	0.885	0.303
	(2.38)	(-0.58)	(0.96)	(1.93)	(1.03)
effectvt	-0.565***	-0.356***	-0.339***	-0.666***	-0.339***
	(-7.40)	(-5.06)	(-4.16)	(-5.08)	(-3.44)
margin	0.0277*	0.0264	0.00793	0.0125	0.00793
	(2.35)	(1.68)	(0.64)	(0.75)	(0.46)
alternat	-0.00453	0.0456	-0.147	-0.0488	-0.147
	(-0.02)	(0.21)	(-0.67)	(-0.14)	(-0.63)
Constant	30.18***	21.28***	24.24***	40.51***	24.24***
	(11.47)	(7.38)	(8.83)	(9.75)	(8.22)
Observations	340	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 33: Health Regressions-Various Quantiles_2

	(1)	(2)	(3)	(4)	(5)
	hth_psarcor	hth_qreg_25	hth_qreg_50	hth_qreg_75	hth_bsqreg_50
left	0.194	2.271***	2.179***	1.764	2.179***
	(1.14)	(4.65)	(4.77)	(1.90)	(4.42)
bjp	-0.0493	0.626	0.112	0.550	0.112
	(-0.27)	(1.39)	(0.27)	(0.67)	(0.31)
congress	0.0323	0.751*	0.658	1.338*	0.658
	(0.21)	(2.05)	(1.94)	(2.06)	(1.72)
regional	-0.0133	0.686	0.896*	1.421	0.896*
	(-0.07)	(1.70)	(2.33)	(1.88)	(2.22)
coalitio	-0.0236	-0.565	0.0350	0.262	0.0350
	(-0.15)	(-1.64)	(0.10)	(0.37)	(0.08)
election	-0.550***	-0.0325	-0.0468	-0.312	-0.0468
	(-3.60)	(-0.12)	(-0.19)	(-0.65)	(-0.25)
effectst	-0.0157	-0.148	-0.162	-0.224	-0.162
	(-0.25)	(-1.46)	(-1.37)	(-0.77)	(-1.19)
margin	-0.000224	0.0241	0.0127	0.0326	0.0127
	(-0.04)	(1.50)	(1.06)	(1.51)	(0.86)
alternat	0.0752	-0.148	-0.130	-0.213	-0.130
	(0.61)	(-0.64)	(-0.62)	(-0.49)	(-0.63)
L.health	0.844***				
	(18.97)				
lnpcsgdp		-1.485***	-1.934***	-3.698***	-1.934***
		(-4.18)	(-6.47)	(-6.75)	(-6.91)
Constant	0.867*	18.01***	22.88***	39.50***	22.88***
	(2.20)	(5.76)	(8.83)	(8.28)	(9.35)
Observations	323	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 34: Irrigation Regressions-Various Quantiles_1

	(1)	(2)	(3)	(4)	(5)
	Irr_OLS	Irr_qreg_25	Irr_qreg_50	Irr_qreg_75	Irr_bsqreg_50
lnpcsgdp	2.557***	1.182***	1.751***	3.134***	1.751*
	(5.23)	(4.67)	(4.01)	(6.76)	(2.01)
left	-4.453***	-3.105***	-4.218***	-5.033***	-4.218***
	(-6.07)	(-8.16)	(-6.55)	(-7.79)	(-5.20)
bjp	-0.418	0.517	1.379*	0.129	1.379
	(-0.61)	(1.50)	(2.28)	(0.21)	(1.65)
congress	-2.823***	-3.335***	-3.100***	-1.527**	-3.100***
	(-5.16)	(-12.52)	(-6.43)	(-3.03)	(-4.53)
regional	-4.568***	-3.773***	-4.671***	-4.546***	-4.671***
	(-7.29)	(-12.61)	(-8.41)	(-7.41)	(-5.32)
election	0.246	0.222	0.693	0.581	0.693
	(0.62)	(1.11)	(1.95)	(1.60)	(1.57)
coalitio	-1.644***	-2.297***	-2.488***	-0.548	-2.488***
	(-3.40)	(-9.68)	(-5.80)	(-1.23)	(-3.36)
effectvt	-0.00943	0.118	0.0243	-0.302**	0.0243
	(-0.08)	(1.75)	(0.22)	(-2.76)	(0.11)
margin	0.0278	0.0232**	-0.0113	-0.0224	-0.0113
	(1.44)	(2.76)	(-0.65)	(-1.17)	(-0.41)
alternat	-0.158	-0.634***	0.294	0.300	0.294
	(-0.46)	(-3.58)	(0.97)	(0.98)	(0.61)
Constant	-14.78***	-5.026*	-7.976*	-17.37***	-7.976
	(-3.43)	(-2.29)	(-2.08)	(-4.20)	(-1.03)
Observations	340	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 35: Irrigation Regressions-Various Quantiles_2

	(1)	(2)	(3)	(4)	(5)
	Irr_psarcor	Irr_qreg_25	Irr_qreg_50	Irr_qreg_75	Irr_bsqreg_50
left	-0.403	-3.152***	-3.843***	-5.021***	-3.843***
	(-0.89)	(-7.80)	(-4.50)	(-7.61)	(-4.38)
bjp	0.104	0.488	1.444	0.0692	1.444
	(0.26)	(1.35)	(1.85)	(0.11)	(1.65)
congress	-0.318	-3.377***	-3.110***	-1.930***	-3.110***
	(-0.89)	(-12.23)	(-4.93)	(-3.91)	(-4.65)
regional	-0.519	-3.615***	-4.347***	-4.635***	-4.347***
	(-1.25)	(-11.93)	(-6.09)	(-7.77)	(-5.78)
coalitio	-0.306	-2.314***	-1.820**	-0.514	-1.820*
	(-0.90)	(-8.29)	(-2.89)	(-1.02)	(-2.03)
election	0.575**	0.246	0.214	0.465	0.214
	(2.87)	(1.17)	(0.47)	(1.29)	(0.49)
effectst	-0.101	0.178	-0.287	-0.365*	-0.287
	(-1.01)	(1.77)	(-1.30)	(-2.21)	(-0.99)
margin	0.0205	0.0166	-0.00977	-0.0174	-0.00977
	(1.48)	(1.81)	(-0.43)	(-0.93)	(-0.36)
alternat	-0.0176	-0.484*	0.447	0.181	0.447
	(-0.08)	(-2.55)	(1.13)	(0.61)	(0.91)
L.irrigation	0.837***				
	(16.67)				
lnpcsgdp		1.057***	1.881***	3.399***	1.881*
		(3.96)	(3.33)	(7.69)	(2.23)
Constant	1.132	-3.930	-8.653	-19.77***	-8.653
	(1.85)	(-1.72)	(-1.76)	(-5.09)	(-1.18)
Observations	323	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 36: Agriculture Regressions-Various Quantiles_1

	(1)	(2)	(3)	(4)	(5)
	Agr_OLS	Agr_qreg_25	Agr_qreg_50	Agr_qreg_75	Agr_bsqreg_50
lnpcsgdp	-4.071***	-2.136**	-2.510***	-5.842***	-2.510*
	(-5.82)	(-2.84)	(-4.46)	(-7.47)	(-2.51)
left	0.457	1.381	0.0765	-0.699	0.0765
	(0.44)	(1.38)	(0.09)	(-0.59)	(0.10)
bjp	0.394	-0.0675	-1.082	2.436*	-1.082
	(0.40)	(-0.07)	(-1.39)	(2.20)	(-0.85)
congress	2.356**	1.496	1.628**	1.715*	1.628*
	(3.01)	(1.94)	(2.62)	(2.00)	(2.39)
regional	1.725	0.944	0.113	-0.0906	0.113
	(1.93)	(1.05)	(0.16)	(-0.09)	(0.15)
election	0.107	0.276	-0.119	0.109	-0.119
	(0.19)	(0.48)	(-0.27)	(0.17)	(-0.22)
coalitio	1.283	0.370	-0.396	1.834*	-0.396
	(1.85)	(0.57)	(-0.73)	(2.19)	(-0.56)
effectvt	-1.102***	-0.576***	-0.449**	-0.838***	-0.449*
	(-6.17)	(-3.49)	(-3.17)	(-3.60)	(-2.14)
margin	0.0883**	0.0506	0.150***	0.150***	0.150***
	(3.20)	(1.80)	(6.92)	(5.81)	(6.90)
alternat	0.894	1.472**	0.239	0.658	0.239
	(1.84)	(3.15)	(0.61)	(1.18)	(0.48)
Constant	46.36***	24.75***	30.30***	63.06***	30.30***
	(7.53)	(3.69)	(6.11)	(9.01)	(3.33)
Observations	340	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 37: Agriculture Regressions-Various Quantiles_2

	(1)	(2)	(3)	(4)	(5)
	Agr_psarcor	Agr_qreg_25	Agr_qreg_50	Agr_qreg_75	Agr_bsqreg_50
left	0.394	1.210	-0.152	-0.918	-0.152
	(0.94)	(1.07)	(-0.17)	(-0.78)	(-0.18)
bjp	0.173	0.00839	-1.508	1.100	-1.508
	(0.44)	(0.01)	(-1.80)	(1.02)	(-1.21)
congress	0.268	1.371	1.089	1.862*	1.089
	(0.90)	(1.67)	(1.61)	(2.25)	(1.37)
regional	0.0667	0.890	-0.757	-1.135	-0.757
	(0.20)	(0.95)	(-0.99)	(-1.19)	(-0.97)
coalitio	0.461	-0.965	-0.518	2.033*	-0.518
	(1.20)	(-1.26)	(-0.80)	(2.28)	(-0.87)
election	-0.545	0.162	-0.0329	0.0626	-0.0329
	(-1.36)	(0.25)	(-0.07)	(0.10)	(-0.06)
effectst	-0.212	0.0311	-0.244	-0.759*	-0.244
	(-1.76)	(0.12)	(-1.05)	(-2.09)	(-0.91)
margin	0.0174	0.0613*	0.155***	0.182***	0.155***
	(1.48)	(2.03)	(6.50)	(6.67)	(6.33)
alternat	0.747	0.960	0.287	0.544	0.287
	(1.89)	(1.88)	(0.68)	(0.96)	(0.61)
L.agriculture	0.841***				
	(13.65)				
lnpcsgdp		-2.017*	-2.089***	-5.071***	-2.089*
		(-2.33)	(-3.47)	(-6.86)	(-2.11)
Constant	0.723	21.88**	25.80***	54.65***	25.80**
	(0.87)	(2.88)	(4.93)	(8.46)	(2.94)
Observations	323	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 38: Social Expenditure Regressions-Various Quantiles_1

	(1)	(2)	(3)	(4)	(5)
	Soc_OLS	Soc_qreg_25	Soc_qreg_50	Soc_qreg_75	Soc_bsqreg_50
lnpcsgdp	-1.586***	-0.0720	-0.721***	-1.624***	-0.721**
	(-5.21)	(-0.76)	(-5.00)	(-4.24)	(-3.15)
left	-0.294	-0.535***	-0.252	-1.458**	-0.252
	(-0.64)	(-3.56)	(-1.16)	(-2.83)	(-0.76)
bjp	-1.386**	-1.393***	-0.962***	-2.229***	-0.962**
	(-3.27)	(-9.68)	(-4.80)	(-4.95)	(-2.94)
congress	-0.532	-0.763***	-0.359*	-1.063**	-0.359
	(-1.57)	(-6.65)	(-2.23)	(-2.87)	(-1.19)
regional	0.0635	-0.675***	-0.333	-0.397	-0.333
	(0.16)	(-5.26)	(-1.81)	(-0.90)	(-0.95)
election	-0.0824	0.0165	-0.0439	-0.246	-0.0439
	(-0.33)	(0.19)	(-0.37)	(-0.93)	(-0.36)
coalitio	-0.00127	0.160	0.160	-0.432	0.160
	(-0.00)	(1.41)	(1.13)	(-1.44)	(0.68)
effectvt	-0.169*	-0.0132	-0.0312	-0.00897	-0.0312
	(-2.17)	(-0.45)	(-0.85)	(-0.10)	(-0.45)
margin	0.0128	-0.00838	0.0141*	0.0323**	0.0141
	(1.06)	(-1.76)	(2.48)	(2.76)	(1.48)
alternat	0.533*	-0.00613	0.283**	0.656**	0.283
	(2.52)	(-0.09)	(2.80)	(2.62)	(1.47)
Constant	17.18***	2.808***	8.442***	18.10***	8.442***
	(6.42)	(3.37)	(6.65)	(5.44)	(4.39)
Observations	340	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 39: Social Expendtiure Regressions-Various Quantiles_2

	(1)	(2)	(3)	(4)	(5)
	Soc_psarcor	Soc_qreg_25	Soc_qreg_50	Soc_qreg_75	Soc_bsqreg_50
left	-0.163	-0.527**	-0.470	-1.711**	-0.470
	(-0.98)	(-3.03)	(-1.69)	(-3.21)	(-1.43)
bjp	-0.489**	-1.288***	-1.160***	-2.215***	-1.160***
	(-2.95)	(-7.71)	(-4.57)	(-4.72)	(-3.58)
congress	-0.353*	-0.685***	-0.438*	-0.909*	-0.438
	(-2.18)	(-4.87)	(-2.13)	(-2.38)	(-1.52)
regional	-0.261	-0.607***	-0.444	-0.498	-0.444
	(-1.06)	(-4.03)	(-1.90)	(-1.09)	(-1.24)
coalitio	0.0536	0.0706	-0.0441	-0.701	-0.0441
	(0.27)	(0.48)	(-0.22)	(-1.91)	(-0.18)
election	-0.227	-0.0448	-0.0615	-0.133	-0.0615
	(-1.33)	(-0.45)	(-0.42)	(-0.49)	(-0.52)
effectst	-0.0451	0.0918*	0.0717	0.218	0.0717
	(-0.76)	(2.11)	(0.99)	(1.42)	(0.70)
margin	0.00448	-0.00945	0.0138	0.0162	0.0138
	(0.52)	(-1.63)	(1.90)	(1.38)	(1.31)
alternat	0.236	-0.0420	0.215	0.381	0.215
	(1.39)	(-0.51)	(1.69)	(1.51)	(1.07)
L.socialse	0.722***				
	(9.40)				
lnpcsgdp		-0.156	-0.624***	-1.554***	-0.624**
		(-1.37)	(-3.44)	(-4.08)	(-2.64)
Constant	0.801*	3.283**	7.509***	17.12***	7.509***
	(2.34)	(3.32)	(4.77)	(5.27)	(3.80)
Observations	323	340	340	340	340

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

A4. Description of variables in the regressions

Effective number of Parties (seats)	The effective number of parties in a state assembly in India, using seats (nSEATS), was calculated employing the widely used Laakso and Taageperas Index (N).
Effective number of Parties (votes)	The effective number of parties in a state assembly in India, using votes (nVOTES), was calculated employing the widely used Laakso and Taageperas Index (N).
Election	Dummy variable taking value 0 or 1
Left	Dummy variable taking value 0 if a leftist party is not part of the government and 1 if it is.
BJP	Dummy variable taking value 0 if Bharatiya Janata Party is not part of the government and 1 if it is.
Congress	Dummy variable taking value 0 if Congress is not part of the government and 1 if it is.
Regional	Dummy variable taking value 0 if a regional is not part of the government and 1 if it is.
Coalition	Dummy variable taking value 0 if state government is not formed by coalition of parties and 1 if it is.
Alternation	0 = A state assembly is ruled by the same political party that ruled in that state prior to the election 1 = A state assembly is ruled by a political party that is different from the political party that ruled in that state prior to the election
margin	Percentage difference between the largest recipient of votes and the second largest recipient of votes in all state assembly elections in India, 1980-2000.

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