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Development Planning or Planning for the Loyal Partisans: A Case of Annual Development Plans in Punjab, Pakistan

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Partisan theory of distributive politics highlights the role of political incentives in the distribution of public resources. This paper is an attempt to investigate the potential manipulation in public resources at a sub-national level to test the relevance of this notion empirically. We have employed data from the annual development plans of the Punjab province of Pakistan from 1988-2016. Using the system GMM estimation technique, we have found significant resource diversion by the provincial government towards co-partisans at the district level. Moreover, the resource diversion gets even stronger specifically in the infrastructure sectors if the district possesses a clear majority of more than 75 percent of legislators of the provincial assembly allied with the ruling political party. The ruling party, therefore, seems to secure a simple majority by preferring clear majority districts over the swing or less safe districts. The incumbents also use development funds to cater to higher competition at the ballot by larger spending in the infrastructure sectors. However, they spend more in the education sector in the districts with higher voter turnout. We suggest the introduction of some economic formula in the spirit of the one followed for the current expenditures in the country for the distribution of development sector budget to avoid such distortions.

Keywords: Partisan theory; distributive politics; development planning

1. INTRODUCTION

The positive role of public resources in the economic development of a country requires transparent and efficient resource distribution mechanisms. Many institutional bodies and commissions are being established across the world to ensure a fair distribution of resources on standard equity and efficiency basis as proposed by the theories of distributive politics. Distribution of the public funds largely follows statutory rules. However, these may also be distributed on an ad-hoc and discretionary basis by the concerned bodies (Khemani, 2003). The scholars of the partisan theory have raised questions on the fair distribution of public funds under both rules-based and discretionary transfers. Favouring political allies or constituencies in the allocation of public funds at the expense of political rivals is a widespread phenomenon in distributive politics (Del Rossi, 1995;Shepsle & Weingast, 1981). An important empirical question is why incumbents may favour some constituencies over the others in resource allocation.

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A continuing debate to resolve this question divides scholars into two groups. One group, led by Cox and McCubbins (1986) supports the core voter hypothesis. This hypothesis assumes that politicians are risk-averse and support their core voters only to retain their safe seats. The other group hails the swing voter hypothesis of Lindbeck and Weibull (1993) and Dixit and Londregan (1996). The swing voter hypothesis postulates that politicians, being risk lovers, give transfers to swing voters and marginal seats to change the voter's preferences in their favour. Empirical support for core versus swing voter hypothesis is mixed (Cox & McCubbins, 1986; Case, 2001; Lindbeck & Weibull, 1987; Snyder, 1989). Cox (2009) postulated that transfers to a constituency are meant particularly to (i) persuade voters to change their preference; (ii) increase voter turnout; and (iii) reduce the chances of potential political rivals and party splintering.

Furthermore, a large variation within the core (primarily caused by the underlying political objective) has also been found in all political setups. If the political objective is to win a simple majority; safe and pivotal seats will be focused which are necessary to win for making a government. On the other hand, if the political motive is to maximise the number of seats in the legislature, the constituencies with close election results would be targeted for the reason that voters in these constituencies are more likely to evaluate candidates on actual performance in the office (Case, 2000; Khemani, 2003; Lindbeck & Weibull,1987). This study is designed to test the relevance of these competing hypotheses in a developing country context.

Pakistan is a federal parliamentary democracy. Following international best practices, a fairly rule-based resource distribution mechanism under the National Finance Commission (NFC) and Provincial Finance Commission (PFC) has been established in Pakistan. Yet development budget in Pakistan is decided outside this ambit which creates space for opportunist governments to manipulate development allocations to further their electoral fortunes. This motivates us to study resource distribution in the development sector where political discretion is exercised for deciding horizontal shares of the lower-tier governments. This study is further motivated by the fact that historically electoral outcomes in certain regions of Pakistan have remained uncertain. For instance, due to its bipolar-turned-tripolar structure, the competition is always between two to three key contenders. Since 1970, 80 percent of the total votes in general elections were shared by two parties; the Pakistan Muslim League (PMLs) and Pakistan People's Party (PPP). In Punjab 55 percent of the votes were secured by PMLs, 25 percent by PPP, and the remaining 20 percent was shared by religious and regional parties. However, this duality has transformed into the three-party system since 2013 with the two top parties Pakistan Muslim League Nawaz (PMLN) and Pakistan Tehrik-e-Insaaf (PTI) in 2013 and 2018 together not accounting for more than two-thirds of votes cast. Besides, all these parties (big and small) are spread out fairly uniformly throughout the province. 5 percent to 10 percent en-bloc[1] rallying of votes from small parties or key players in favour of a key contender brings a massive change in results (PILDAT, 2008). Moreover, First Past the Post System (FPTP)[2] and simple plurality electoral laws do not require securing 50 percent votes by a political party or a candidate to form the government or to win an electoral seat. This makes parties strive to secure just enough electoral seats to form the

[1]If a group of people do something *en-bloc*, they do it all together and at the same time.

[2]A political system where a simple majority is required to win a seat or to form a government

government rather than to secure maximise wins. Given such limitations, the system fails to establish a strong link between the electoral performance of a party and its strength in the parliament (Mehmood, 2007). This uncertainty and ambiguity in the electoral scenario of Pakistan make it difficult to determine the underlying political motivations of politicians in resource distribution. Hence, it is important to understand that why and how parties distribute resources to their advantage especially in those setups where the political institutions are not strong enough to ensure framing and observance of non-partisan systems for distribution of resources.

The study has employed data from Annual Development Plans (ADP) of the Punjab province of Pakistan from 1988-2016 covering seven provincial general elections held in the last three decades. District-wise Development budget has been disaggregated into sectors like; education, health, water supply & sanitation, and roads and bridges sectors for an in-depth inquiry of political preferences. The primary objective of this study is to determine whether the political affiliation of the ruling politician of a district[3] with the provincial government can impact development grants earmarked for her district.

It is pertinent to mention here that in a country like Pakistan, a straight forward distinction between core and swing districts is difficult to establish. In the first past the post system, a candidate is not required to get 50 percent votes to secure a seat. Rather the candidate who gets more votes than any other contestant is declared a winner. Similarly, the political party which either wins the majority of seats distributed in any manner in the province or enjoys the support of the majority of the MPAs of the legislature forms the government. This plurality rule consequently leads to a very fragile link between the seats that a political party has in the legislature and popular votes a party receives in elections. Therefore, we have designed this study to find the impact of partisanship on public development grants without establishing a clear-cut distinction between the core or swing voters. Hence, the study has used the political affiliation of the district representatives as a proxy for their closeness or otherwise to the incumbents. Also, we have tried to establish the underlying political objectives[4] of the politicians to explain the variation within the affiliated districts.

We have found a significant impact of the political affiliation of the politicians of a district with the incumbents on the budget allocation for the respective district. The districts with 50 percent or more seats affiliated with the party in government are receiving significantly higher earmarks. Moreover, the incumbents are found to spend heavily in clear majority districts as compared to districts closer to the 50 percent cut-off level. Hence the political objective of the incumbents in the Punjab province seems to be securing the simple majority rather than maximising their representation in the legislative assembly. In addition, the study has found that more mobilised voters and actively participating districts receive greater transfers in the social sector. However, the higher competition faced at the ballot is catered with greater spending on infrastructure. The overall conclusion of the study is that infrastructure is prioritised by the incumbents when

[3]MPAs from the ruling party,Independent candidates and the coalition partners from other parties which are part of the incumbents are considered as the affiliated MPAs

[4]Khemani (2003) tested the political objectives of politicians in India. She claimed that if politicians focus on simple majority, they will target core groups and constituencies only where incumbents enjoy a clear majority. On the other hand, if they pursue the objective of maximising the representation in the legislature, they will also focus on the swing or lesser safe districts.

it comes to extending targeted benefits to certain districts as a key strategy to gain more votes in the future or to reward voters who have voted for them. Our finding is consistent with the studies which postulate that electoral and re-election incentives motivate the incumbents to target such regions where they received higher votes (Atlas et al., 1995; Besley & Case, 1995; Knight, 2008; Lim, 2013; List & Sturm, 2006; Rodden, 2002).

This study contributes to the broad strand of literature in the field of economics and political science which investigates the causes and consequences of distributive politics such as Golden and Min (2013) and Finan and Mazzocco (2016). We complement this literature by testing these theories empirically. Moreover, the majority of literature in this field has tested only a single vote-getting strategy i.e. higher transfer to the region with higher votes or seats. We have also tested empirically the mobilisation and coordination efforts to reward allies at the district level by the incumbents.

The rest of the paper is organised as follows: section 1.1covers relevant literature on the political economy of resource distribution. Section 2 explains data and methodology of the paper. Section 3 explains our findings and section 4 concludes this study with some policy suggestions and future research agenda.

1.1. Literature Review

Wright (1974) pioneered in explaining the crucial parts of political factor determining federal funds allocation across states in the US. A highly positive link between New Deal spending per capita and electoral votes per capita across states was found in his study. Faced with limitation of resources, political representatives normally extend resources to certain constituencies at the cost of others specifically favouring the ones with strong political support (Shepsle & Weingast, 1981; Del Rossi, 1995). This system termed as pork-barrel politics has considerable political consequences and considered an ineffective way of resource distribution (Ames, 1995; Schwartz, 1994). The previous work on distributive politics outside the United States was limited and mostly confined to countries with federal systems of government (Brollo et al., 2013). However, advances in data availability now permit the extension of this line of research to other countries.

Before going further into the background of partisan theory, it is imperative to shed some light on the motivations behind this biased and partisan interests-based allocation of the resources. First of all, it is done as a reward to favour constituencies that came out with the highest vote support in the previous election (Hoare, 1992). The second motivation is to enhance their chance of re-election (Milligan & Smart, 2005; Stein & Bickers, 1994; Veiga & Veiga, 2013). Buying cooperation on a particular political agenda from certain constituencies may also end up in a higher proportion of resources going to specific constituencies (Bullock Iii & Hood Iii, 2005). However, for all of these motives to work well, the absence of certain economic formula is a common precondition. If the decision making is done under some strict formula, chances for the pork-barrelling are reduced (Boex & Martinez-Vazquez, 2005). As Spáč (2016) pointed out that if a final decision on public spending is at the discretion of a particular responsible body and the process is partly discretionary, politically motivated pork-barrel politics will thrive. Such is the case of development spending in Pakistan; therefore, Punjab development plans are suspect to partisan bias and pork-barrel practices.

Most of the partisan and pork-barrel empirical literature is based on two formal theoretical models. The first one is proposed by Cox and McCubbins (1986). The model proposes that risk-averse politicians will focus more on core groups (those with strong ideological affiliation) and less on swing groups (those with no strong ideological affiliation). On the other hand, they will not support opposition groups at all. The second model is proposed by Lindbeck and Weibull (1987) and Dixit and Londregan (1996). This model postulates that politicians in an attempt to maximise their votes will target two groups; the swing groups and the low-income groups. Hence both models create contrasting expectations about distributive benefits. Under the former model we expect the core groups receiving higher distributive benefits while under the later model, the benefits are expected to be flowing disproportionately towards the swing groups (Golden & Picci, 2008).

This theoretical controversy has thus generated a puzzling array of empirical evidence. The empirical support for both models is mixed. Swing voter hypothesis is supported by some U.S based studies like Stein and Bickers (1994;1997); Herron and Theodos (2004) and Wright (1974). It has also got support from studies based in some other national settings (Bruhn, 1996; Case, 2001; Dahlberg & Johansson, 2002; Denmark, 2000). The swing-voter hypothesis postulates that voters from swing and marginal localities don't have strong preferences for any of the party, therefore, central governments should allocate more resources to such localities to increases their winning chances in the next election (Cadot et al., 2006; Dahlberg & Johansson, 2002). The notion behind this proposition is that the overall success of the party in general elections determines a particular candidate's electoral prospect and access to resources.

Dahlberg and Johansson (2002) studied a Sweden based environmental spending program. They found support for the swing voter hypothesis. A similar conclusion is drawn by Dasgupta et al. (2001) in the investigation of central government grants to state governments in India. Regional allocation for road spending in France was also diverted to target swing groups in a study by Cadot et al. (2006). Similarly, the Cox-McCubbins hypothesis has also got support from some U.S based studies by Balla et al. (2002); Ansolabehere et al. (2003); Levitt and Snyder (1995); Larcinese et al. (2006) and form some other countries as well like Crisp and Ingall (2002) and Diaz-Cayeros et al. (2000).

The empirical support nevertheless, for any of the formal models is based on the underlying objective function of the politicians and their characteristics. The risk-averse politicians will focus on safe localities only and vice versa if they are risk-takers (Cox & McCubbins, 1986; Levitt & Snyder, 1995). Snyder's study conducted in 1989 found that if the political objective of the incumbent governments is to gain the majority in the next elections they will focus more on safe districts. Porto and Sanguinetti (2001) applied partisan theory in developing country context. Their study demonstrated that states with a higher population and less representation in the legislature were being entertained with a lower share of central transfers while the higher share was transferred to the provinces with greater political representation per capita in Argentine. Khemani (2003) tested the core and swing voter hypothesis by dividing redistributive motives into two different political motives. The study reveals the pork-barrel politics culture in India where two models of federal public spending were compared. The funding program controlled by government agency showed political favouritism in resource transfer whereas the program conducted through independent agency did not follow this partisan pattern.

The bulk of empirical literature contrasts core and swing voters hypothesis and focus only on allied versus unallied political affiliations. However, allied and core constituencies may receive different transfers controlling for all other area-specific characteristics. Cox (2009) explained this variation within the core by introducing three motives of the politicians. He postulated that three things can affect vote proportion of a party that is: (i) voter participation in election process, (ii) number of potential rivals running for a particular seat, and (iii) preference of voters for that particular party. Hence parties support their core districts not only to persuade them but to mobilise voters and to tackle political rivals.

The present analysis adds to the literature by testing these predictions empirically. Studying political motivations behind the distribution of resources is also important for two reasons: (i) to see why some districts or constituencies are politically more important than others (because this will help to explain diverse growth paths of same geographical areas) and (ii) how resources are used by politicians to meet their objectives. This knowledge will further help policymakers to devise better policies which are free from partisan goals.

2. METHODS

2.1. Data Description

A democratic, multi-party federal parliamentary system with a high degree of provincial autonomy and residuary powers characterise Pakistan's legal and political structure. Simple plurality or first past the post (FPTP) single-member constituency electoral rule defines the electoral system of Pakistan (Mahmood, 2007). To maintain intergovernmental fiscal relations and to devise an agreeable formula for resource distribution between centre and provinces NFC under Article 160 of the constitution has been set up. In addition, PFC is established to decide horizontal shares of districts by the provinces. Nonetheless, both at federal and provincial level development expenditures are decided outside the ambit of NFC and PFC (Cheema et al., 2005). Hence the process of resource transfer under development projects becomes ambiguous and calls for the in-depth inquiry to trace political motivations directing this mechanism. The study is focused on the Punjab province of Pakistan.

Punjab is the largest province of Pakistan and home to more than 50 percent of its population. It is located at the north western edge of the geologic Indian plate in South Asia. Punjab is the centre of power in Pakistan and remains the primary arena of the contest in the elections. The leader or the party that dominates Punjab–dominates politics at the centre. The historical electoral trends of Punjab present that it has generally allied with one or another party at each elections. The electoral transitions always remained between PPP or any of the PMLs till 2008 and PTI and PMLs later on. The political wave or a swing better explains the political culture of the province. Moreover, the political hold in Punjab is dominated by feudal political families that depict the elite capture in the province (Rais, 2017).

This study intends to investigate development funds allocation under the ADP by the Punjab government. Development budget is not only the most visible activity of government revealing political preferences but also the area where policymakers can

exercise a greater degree of discretion (Hasnain, 2010). Our dependent variable is the development budget allocated across districts of Punjab over the period 1988 to 2016. Due to constraints of data collection and format of the available data in Pakistan, we were unable to find online databases that could provide us with the district level indicators on the development budget allocated by the provincial government in Punjab. Consequently, we had to get hard copies of the ADPs from the planning and development department of Punjab government. To digitise this database was a big challenge. Outlays in ADP are distributed among different districts of Punjab scheme-wise. On average, forty to fifty small amounts were to be added for getting an annual allocation for a sub-sector of a single district. We use spending on education and health from the social sector category and water supply & sanitation and road & bridges from the physical infrastructure category. Dis-aggregation of development expenditures into social and physical infrastructure sectors allows us to distinguish the political preferences for these sectors. Hasnain (2010) suggested that the preferences of the politicians are tilted towards tangible and targeted public provisions because claiming the credit in these parameters is easier.

For developing the affiliation variable, we have collected information on the elected members of the provincial assembly (MPAs) of Punjab on seven general elections held during the studied period from the election commission of Pakistan and provincial assembly of Punjab. This data provides us party affiliation of the winning candidates from different constituencies, votes received by them, total votes casted in a particular constituency, number of registered voters in that constituency, number of contestants, their party affiliations, and voter turnout, etc. Affiliation of a district is determined by considering MPAs from the ruling party and the coalition members of the incumbents from a district as a proportion of the total constituent seats in a district. Affiliation or alignment of a district is then constructed by various methods. Simple seat percentage to test linear association and square of the seat percentage to test the non-linear relation with funds allocated are used. In the third step, we have designed our affiliation variable in binary form. Since following majority rule, incumbents need a simple majority to form a government; we have assigned the value "1" if the districts have 50 percent or above seats affiliated with the government and "0" otherwise. To capture the degree of representative strength within affiliated districts, the categorical variable is coded "1" if the district has 50-75 percent affiliated seats, "2" if it has more than 75 percent incumbent affiliated seats, and "0" otherwise.

Potential rivals a candidate faces at the ballot and the voter mobilisation efforts by the candidate are used to test other vote-getting strategies. Cox (2009) has proposed a negative link between several ideologically similar candidates at the ballot and votes received by a party. He suggests that more funds will be awarded to those constituencies whose representatives succeed in avoiding party splintering. In Pakistan, we observe a large number of contestants (35 to 40 on average) run for a single seat in elections but the level of competition amongst them remains extremely low. For example, in 1993 elections seventeen candidates were competing for PP-119 in Lahore. However, 98 percent of votes from total votes cast were gained by PMLN and PPP and the remaining 15 candidates secured only 2 percent of the votes. Therefore, we would consider a candidate or party as a potential threat to the ruling party candidate only if it has received

at least 10 percent votes in the previous elections. Furthermore, the incumbents may favour candidates who were key players in mobilising the support for them by bringing maximum voter to the ballot. To assess the impact of mobilisation effort at the district level for enhancing voter participation in the election process we have used voter turnout rate. Voter turnout is measured as a ratio of total votes cast to the total number of registered voters in a particular district.

District level control variables have been used to account for any potential omitted variable bias from the model constructed. These controls comprise of population density measured as persons per square kilometres, the number of government schools, and the number of government hospitals. The source for this data is the Punjab development statistics taken from Punjab Bureau of Statistics. We have constructed a panel data set spanning over thirty years from 1988 to 2016. The total number of districts was 29 until the elections of 1997 in Punjab and 6 new districts were added in elections 2002. We have merged information of new districts into their parent districts and constructed a balanced panel with T=30 and N=29. M.A. Golden and Picci (2008) have aggregated data across legislative periods in their study on Italy provinces. The primary reason for this aggregation is that electoral data remains constant during the whole legislative terms and changes in the subsequent legislative period. Since our variables on political information are constant within election terms i.e. values on these variables change only when a new election is held, we have aggregated our dependent and control variables at election years. However, we have run estimations on non-averaged values of the full sample and by splitting the sample into two parts before and after the emergence of new districts for robustness purposes. Moreover, additional political controls to account for the impact of election cycle and South Punjab are also used to test the robustness of our findings.

2.2. Model Specification

We have constructed our model to test predictions of Cox (2009) and Khemani (2003) model empirically. We start with a simple specification by using seat percentage of the incumbents in a particular district as our first specification and estimate the following equation:

$$Y_{it}^{DEV} = \beta_1 Affiliation(Seat\ \%age)_{it} + \beta_2 \text{Potential Rivals}_{it} + \beta_3 VTO_{it} + X_{it} + \varepsilon_{it} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

Equation (1) is a standard panel data specification. Y_{it}^{DEV} is the development budget allocated to district i at time t by the government Separate regressions for education, health, water supply, and roads individually and then on the combined budget in these sectors are estimated. X_{it} is a vector of control variables that in some specifications include population density, number of schools and number of government hospitals, and ε_{it} is a disturbance term. $Affiliation_{it}$ is the treatment variable and β_1 is the coefficient of interest that establishes the relationship between the resource allocation by the provincial government and political affiliation of districts? $\text{Potential Rivals}_{it}$ and VTO_{it}(VTO=voter turnout) in each district are included to account for the coordination and mobilisation effort of the candidate in the elections. We expect β_2<0because incumbents may divert fewer resources to a district if it faces more competition at the

ballot. However, the sign of this coefficient may be otherwise because parties may allocate more funds to districts to outcompete their rivals. (Cox, 2009) has postulated that incumbents may reward candidates for higher mobilisation efforts, therefore, we expect$\beta_3 > 0$.

Moreover, various degrees of representation an electoral unit enjoys within affiliated units[5] leads to differential treatment by the incumbents for that unit (Khemani, 2003). Hence the treatment for a constituency by the incumbents may vary depending upon their representation being weak (near 50 percent cut-off that may swing to either side) to strong (almost 100 percent seats or around 100 percent seats). To account for this non-linearity; we have used a squared term of the seat proportion in specification 2 as given in Equation (2) below:

$$Y_{it}^{DEV} = \beta_1\, Affiliation(Seat\ \%age)_{it} + \beta_2 \text{Potential Rivals}_{it} + \beta_3 VTO_{it} + \beta_4 Affiliation(Seat\ \%age)_{it}^2 + X_{it} + \varepsilon_{it} \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Next, we have defined affiliation as a dummy variable in the manner given in Equation (3):

$$Affiliation_{it} = \begin{cases} 1\ if\ \text{Majority} of\ MPAs\ \in\ \text{GOVit} \\ 0\ otherwise \end{cases} \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

Here majority is taken to be 50 percent or above MPAs belonging to the ruling party. Now we run the following model using specification 3:

$$\text{Y}_{\text{it}}^{\text{DEV}} = \beta_1\, \text{Affiliation}(\text{Majority above } 50\%)_{\text{it}} + \beta_2 \text{Potential Rivals}_{\text{it}} + \beta_3 \text{VTO}_{\text{it}} + \text{X}_{\text{it}} + \varepsilon_{\text{it}} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

We expect $\beta_1 > 0$ because incumbents are tempted to divert more funds to the districts where they enjoy majority as a reward for getting more votes from them and also to secure support in future elections. To test the variation within the allied districts, we have constructed the affiliation variable as a categorical variable in the manner given below:

$$Affiliation_{it} = \{1\ if\ \text{District has } 50\% \text{ to } 75\% of\ MPAs\ \in\ \text{GOVit} \\ \{2\ if\ \text{District has above } 75\% of\ MPAs\ \in\ \text{GOVit} \\ \&\text{“0”otherwise} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

Our specification 4 now takes the following form:

$$Y_{it}^{DEV} = \beta_1\, Affiliation_{it}(\text{Majority b/w } 50\% \text{ to } 75\%) + \beta_2\, Affiliation_{it}(\text{Majority b/w } 75\% \text{ to } 100\%) + \beta_3 \text{Potential Rivals}_{it} + \beta_4 VTO_{it} + X_{it} + \varepsilon_{it} \quad \ldots \quad \ldots \quad \ldots \quad (6)$$

Furthermore, controlling for political affiliation, we expect that if the objective of political parties is to maximise the number of seats in the provincial legislature, as opposed to the probability of winning a majority, then the coefficient on the 1st category of affiliation indicators should be positive. That is, greater resources should be targeted to those affiliated states where the ruling party controls a smaller proportion of seats in the legislature. And if they want to win a simple majority then sign on the second category of

[5]Khemani (2003) postulated that incumbent's strategy will further depend upon the political objectives they are pursuing i.e. to maximise representation or to win simple majority

affiliation indicator should be positive and on affiliation with 50-75 percent may be insignificant. That is, they spend more on the safe districts only.

2.3. Estimation Technique

Previous literature in this field has largely used the ordinary least squares method or similar methods. However, Fraj et al. (2018) suggested that the dependent variable can generate the issue of endogeneity of the regressors. Khemani (2003) stated that seat proportion controlled by national ruling party and affiliation indicators may create endogeneity in this specification. She claimed that greater transfers may affect perceptions of the voters and good-will and can lead to more votes for the incumbents. Hence, more seats from affiliated constituencies may result from larger transfers in the previous term. Moreover, some exogenous shocks or unobserved voter tastes can affect both the affiliation of a constituency with the incumbents and level of fiscal transfers to that constituency. Hence, these shocks may derive a correlation between transfers and affiliation indicators. Moreover, the long-term nature of development projects and the incremental budgeting process in Pakistan makes the inclusion of the lagged dependent variable in our model unavoidable. Henceforth, we encounter the problem of lagged dependent variable which can make fixed effects and OLS coefficients biased. Instrumental variable methods like 2SLS and 3SLS are preferred over OLS in such cases.

The unavailability of district-level indicators to be used as instruments limits our ability to use standard IV and TSLS techniques. The generalised method of Moments, in this case, can be used which not only resolves the issue of endogeneity but also helps to determine valid instruments. System GMM uses lags of endogenous variables as instruments on the assumption that only available instruments are internal. Fraj et al. (2018) have argued that endogenous variables are assumed to be pre-determined therefore, they are independent of the stochastic error term and satisfy the exclusion restriction. We have used the dynamic panel system GMM method, based on the work of Arellano and Bond (1991) as our ultimate approach to overcome the endogeneity problem. Hansen-J test is applied for over-identifying restrictions as follow up tests and the AR (2) for no autocorrelation in the second-differenced errors.

3. RESULTS AND DISCUSSION

We start by presenting some basic descriptive statistics of the data. Table 1 below contains all the relevant information on data and variables used in this analysis. Figure 1 shows the distribution of development funds among four different sectors. We observe a substantial focus on the physical planning sectors in the studied period. Almost 63 percent of the total per capita allocations made from 1988 to 2016 in these four sectors were allocated for the water supply and roads sector.

On the other hand, social sectors i.e. education and health received only 37 percent of the total development budget in thirty year period. Highest allocations are made for the road and bridges which have received almost 34 percent of the total budget. While water supply received 29 percent, education 22 percent and health sector 14 percent respectively. This pattern of distribution highlights that the preferences of politicians are

tilted towards infrastructure sectors at the cost of social sectors. If we break this allocation into different political regimes the pattern remains almost similar. Islami Jamhoori Itehad (IJI) governments in the first two regimes devoted maximum resources to the water supply and sanitation sector. The coalition government of Pakistan Muslim

Table 1

Descriptive Statistics, Variable Definitions and Sources of Data

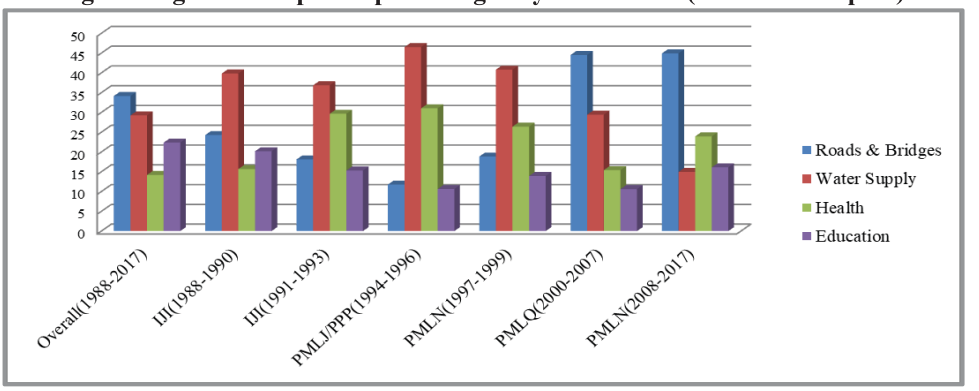
Variable	Definition	Variation	Mean	Std. Dev.	Source
Combined Budget	Per capita development budget in million rupees on health, education, water supply, and roads sector	overall	1.64	2.42	
		between		0.47	PND
		within		2.37	
Health Budget	Per capita development budget in million rupees	overall	0.18	0.39	
		between		0.19	PND
		within		0.35	
Education Budget	Per capita development budget in million rupees	overall	0.26	0.38	
		between		0.08	PND
		within		0.37	
Water Supply & Sanitation Budget	Per capita development budget in million rupees	overall	0.22	0.29	
		between		0.09	PND
		within		0.28	
Roads & Bridges Budget	Per capita development budget in million rupees	overall	0.56	0.86	
		between		0.15	PND
		within		0.85	
Potential Rivals	Number of candidates per electoral seat receiving at least 10% votes cast from a district in a particular election	overall	3.30	3.49	
		between		2.63	ECP
		within		2.34	
Voter Turnout	The ratio of votes cast to the total number of registered voters in a district	overall	256.21	313.35	
		between		167.78	ECP
		within		266.22	
Percentage Seats of the Party In Government	The ratio of government party seats to total constituent seats in a district taken as a percentage	overall	58.81	29.85	
		between		10.94	PA
		within		27.84	
Density	Number of persons per square kilometre	overall	0.52	0.68	
		between		0.67	PBS
		within		0.18	
Number of Government Hospital	Total count of government hospitals in a particular district	overall	7.56	5.31	
		between		4.96	PBS
		within		2.07	
Number of Schools	Total count of government schools and colleges in a particular district	overall	1934.92	719.56	PBS

Sources: PND: Planning and Development Department of Punjab, PBS: Punjab Bureau of Statistics, PA: Provincial Assembly of Punjab, ECP: Election Commission of Pakistan.

League Junejo (PMLJ) and PPP formed after the 1993 election also allocated the highest portion of the budget to this sector. Pakistan Muslim League Quaid (PMLQ) and Pakistan

Muslim League Nawaz (PMLN) governments diverted almost half (44 percent approximately) of the development funds towards the road and bridges sector. It is also pertinent to mention here that the education sector was the most neglected sector by all the political parties and governments unanimously.

Fig. 1. Regime Wise per Capita Budgetary Allocations (in Million Rupees)



Source: Author's calculation using ADP data.

Broadly speaking all the governments in Punjab has prioritised physical infrastructure sectors at the cost of social sectors in these years. Figure 2 shows the development budget allocations between allied and non-allied districts from 1988-2016 in Punjab. We can see that allocations to allied districts are significantly higher than non-allied districts. Certainly, the average amount of funds for four sectors in aggregate to electoral districts controlled by MPAs of the ruling party (Rs.294.46 million per capita) were near twice the grants apportioned to districts controlled by the opposition counterparts (Rs.155.89 Million per capita).

Fig. 2. Distribution of Development Budget

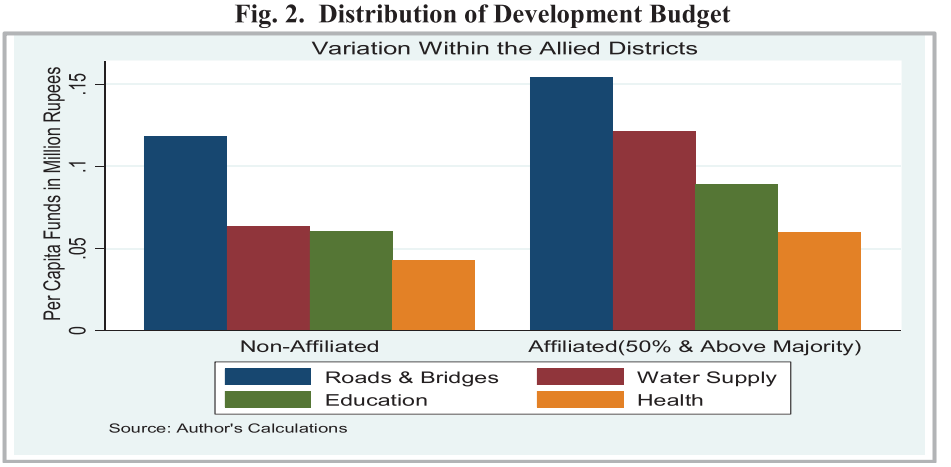
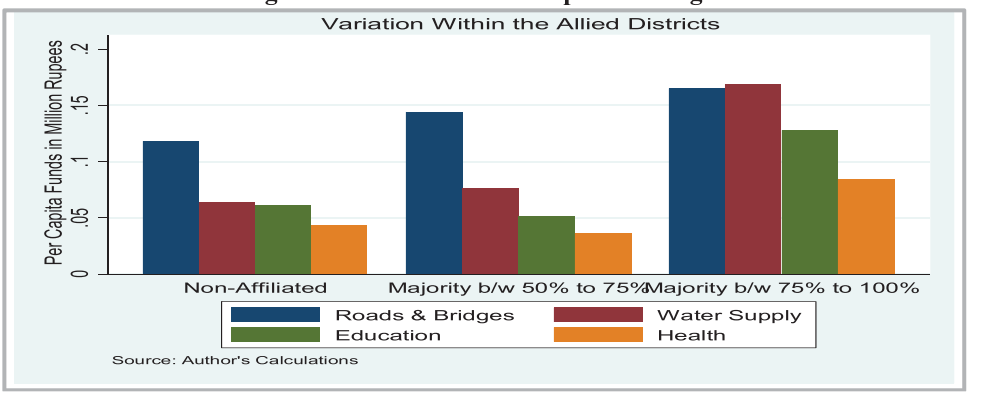


Figure 3 shows that the partisan effect occurs after 75 percent seats rather than 50 percent benchmark. Although jointly allied districts receive higher allocations than non-allied districts, the pattern seems to be non-linear. In the 2nd category, districts receive

lesser earmarks than 1st and 3rd category districts. But they significantly receive larger funds if they possess 75 percent and above seats allied with the incumbents.

Fig.3. Distribution of Development Budget



Thus, at this most general level, we can say that Punjab governments responded in a collective, partisan way to the parliamentary opportunity to distribute tax-funded benefits for electoral advantage. Our estimates from system GMM are presented in Table 2.

Table 2

System GMM Estimates (Political Affiliation as Continuous Variable)

Variables	Combined Budget	Health Budget	Education Budget	Water Supply Budget	Roads & Bridges Budget
Affiliation (Seat	0.000367	0.00772*	0.00711**	0.00929*	0.00894***
%age)	(0.003)	(0.0041)	(0.0029)	(0.005)	(0.0032)
Potential Rivals	-0.0566**	-0.173*	-0.0241	0.0392	0.106***
	(0.0257)	(0.091)	(0.0242)	(0.0462)	(0.0326)
Voter Turnout	0.00168***	0.00304	0.00129***	0.00116	-0.00109*
	(0.0005)	(0.0021)	(0.00039)	(0.0009)	(0.0006)
Observations	174	172	174	174	173
Number of ID	29	29	29	29	29
Lagged Dependent	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
AR2/prob.	-0.752/0.12	1.063/0.28	-0.4250.67	-0.739/0.97	0.19/0.5
AR1/prob.	-1.873/0.06	-3.653/0.00	-3.198/0.00	-2.855/0.00	-3.491/0.00
Hansen/prob.	8.53/0.35	15.61/0.11	15.46/0.35	20.14/0.101	18.29/0.19
Year Dummies	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector, and on a combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies, and district level controls (population density, number of government schools, and hospitals). Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are predetermined controls and year dummies and GMM type instruments are lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1.

As the starting point of our analysis, we have tested a linear relation between seat percentage and funds allocation. The table shows that districts with higher seat percentage of incumbents are receiving significantly more funds than a low seat percentage district. As suggested above, this likely reflects the power of the incumbent's affiliated members to secure special attention in the distribution of pork-barrel benefits (Denemark, 2000). Individually, in each sector, a higher political representation leads to significantly higher allocation for that district. In social sectors 1 standard deviation increase in seat percentage (SD=29.85 see table 1) has increased the per-capita budget by 0.23 percentage points [∂ per-capita budget/∂ seat percentage = 0.007*29.85011≈ 0.23][6]. Similarly, 1 standard deviation increase in seat percentage has led to a 0.27 percentage point [∂ per-capita infrastructure budget/∂ seat percentage = 0.009*29.85011≈ 0.27] higher funding per capita in infrastructure sectors. Hence, physical infrastructure sectors that embody targeted and visible benefits are prioritised highly by the politicians if they get higher votes from a district. Existing research in this area also shows that these vote-buying mechanisms work better for incumbents if such effects are highly visible to the electorate (Stein & Bickers, 1994; Milligan & Smart, 2005; Veiga & Veiga, 2013).

Table 3

Testing Non-linear Relation between Affiliation and Development Budget

Variables	Combined Budget	Health Budget	Education Budget	Water Supply Budget	Roads & Bridges Budget
Affiliation(Seat %age)	0.00962*	0.0299**	-0.00672	0.00199	0.0281***
	(0.0047)	(0.0118)	(0.0066)	(0.0098)	(0.0062)
Affiliation (Seat %age Square)	-4.59E-05	-0.000290**	0.000126*	3.58E-05	-0.00019***
	(3.85E-05)	(0.00011)	(6.81E-05)	(6.15E-05)	(6.39E-05)
Potential Rivals	-0.00826	-0.0763	-0.0456	0.0375	0.0700**
	(0.0262)	(0.132)	(0.0288)	(0.0485)	(0.0289)
Voter Turnout	0.00157**	0.00273	0.00192***	0.00198*	-0.000808
	(0.00063)	(0.00218)	(0.00069)	(0.001)	(0.00062)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	174	172	174	174	173
Number of ID	29	29	29	29	29
p(AR2)	-0.28/0.11	0.83/0.4	-0.64/0.5	-0.580.5	-0.4340.6
p (AR1)	-2.3/0.00	-3.26/0.00	-3.58/0.00	-2.560.00	-3.29/0.00
p(Hansen)	8.63/0.4	13.41/0.15	13.35/0.4	17.82/0.16	16.6/0.22
Year Dummies	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector, and on the combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies, and district level controls (population density, number of government schools, and hospitals). Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are predetermined controls and year dummies and GMM type instruments are lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1.

[6]Measured as (Coefficient of the independent variable* Standard Deviation of Independent variable) = percentage point change in dependent variable following Asiedu and Lien (2011). Also, see Introduction to SAS.ULCA: Statistical Consulting group

Since development projects in Pakistan compete with each other due to lack of funds, higher resources in targeted benefits are extended at the cost of low allocations in social sectors. Higher competition is provisioned through more funding in roads and higher mobilisation is rewarded through higher funding in the education sector. Table 3 reports results using specification 2. Squared term of seat percentage is significant in the roads, education, and health sector. There seems to be some threshold in seat percentage after which the relation between fund allocations and seat percentage changes. Results for specification 3 are reported in table 4.

Table 4

Results for Political Affiliation Measured as Binary Variable

Explanatory Variables	Combined Budget	Health Budget	Education Budget	Water Supply Budget	Roads & Bridges Budget
Affiliation (Majority above 50%)	0.433***	-0.767*	0.309*	0.32	0.768***
	(0.087)	(0.38)	(0.163)	(0.221)	(0.133)
Potential Rivals	0.109***	-0.115	-0.0273	0.0161	0.128***
	(0.038)	(0.265)	(0.0185)	(0.0286)	(0.0331)
Voter Turnout	-0.000576	0.00675**	0.000925**	-0.000102	-0.00123**
	(0.00046)	(0.0027)	(0.0004)	(0.00074)	(0.00053)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	174	172	174	174	173
Number of id	29	29	29	29	29
p(AR2)	-0.15/0.42	-0.34/0.7	-0.71/0.9	0.35/0.73	-1.16/0.25
p (AR1)	-1.92/0.05	-1.89/0.05	-3.27/0.00	-2.67/0.00	-3.30/0.00
p(Hansen)	13.88/0.52	8.11/0.15	17.3/0.14	12.62/0.4	11.68/0.47
Year Dummies	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector, and on the combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies, and district level controls (population density, number of government schools, and hospitals). Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are predetermined controls and year dummies and GMM type instruments are lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1

As can be seen from the results, the affiliated districts are likely to receive more funds in the education, water supply, roads, and in the combined budget. However, the coefficient is negative in the health sector. An important thing to mention here is that the magnitude of the coefficient is highest in the roads sector. Overall, the combined budget in four sectors is expected to increase by 54 percent 7 if a district gets a 50 percent or above majority aligned with the ruling government. Similarly, 36 percent higher funding is expected in the education sector and 115 percent higher funds in the roads sector if the district is allied with the incumbents. The results are consistent with several previous empirical studies. Milligan and Smart (2005) for example explored that the districts allied with the government in terms of a higher number of co-partisans were receiving more funding which was aimed at provincial

[7]This percentage is calculated by taking the exponential of above 50 percent dummy coefficient. Exponential (0.43) = 1.54 and interpreted as 54 percent increase independent variable caused by dummy variable taking the value of "1" as compared to its value of "0" (See Introduction to SAS.ULCA: Statistical Consulting group)

economic development. Similar outcomes were provided by Costa-i-Font et al. (2003) who focused on the allocation of resources in Mexico. According to their study, the central government provided more public spending to regions where the ruling party fared better in elections. As far as other vote acquiring strategies are concerned potential rivals are significantly driving more resources towards the roads sector while voter turnout is significantly positive in the social sectors and negative in the infrastructure sectors—coinciding with the results of the above specification.

Next, we have run specification 4 to determine variation if any among the allied districts. Results are reported in Table 5 for this specification. In the disaggregated analysis, the political objective of securing a simple majority is supported by the findings of this study. Although spending is significantly higher in infrastructure sectors in the affiliated districts as compared to the non-affiliated districts, yet the size of the coefficient is significantly higher in both sectors when a party moves from 50-75 percent majority to 75 percent-100 percent majority. For example, in the roads sector, the districts are expected to get [Exp (0.783=1.18] 118 percent higher funds as compared to other districts when they have 50 percent to 75 percent majority. However, the expected rise in funds goes to [Exp (0.916) =2.499] 149 percent approximately for 75 percent and above majority districts. This shows the incumbent's higher preference for the safe or core districts. Hence, the political objective of the incumbents in Punjab province seems to be securing a simple majority rather than maximising the overall assembly representation. The health sector, however, shows no signs of partisan bias in our data. Potential rivals and voter turnout remained consistent in their sign in this specification as well.

Table 5

Testing Political Affiliation for Three Majority Levels

Explanatory Variables	Combined Budget	Health Budget	Education Budget	Water Supply Budget	Roads & Bridges Budget
Affiliation (Majority between 50-75%)	0.461***	-0.401	-0.140*	0.945***	0.783***
	(0.121)	(0.292)	(0.082)	(0.303)	(0.193)
Affiliation (Majority between 75-100%)	0.431**	-0.174	0.211**	1.119***	0.916***
	(0.167)	(0.395)	(0.0785)	(0.365)	(0.148)
Potential Rivals	-0.0197	-0.316**	-0.0148	0.161	0.135*
	(0.037)	(0.134)	(0.0212)	(0.124)	(0.0787)
Voter Turnout	0.000577	0.00401*	0.000178	-0.00389	-0.0022**
	(0.00076)	(0.0023)	(0.00054)	(0.0036)	(0.0009)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	174	172	174	174	173
Number of id	29	29	29	29	29
p(AR2)	-0.16/0.37	0.71/0.41	0.55/0.67	0.59/0.55	-0.99/0.32
p (AR1)	-1.98/0.04	-3.71/0.00	-3.31/0.00	-2.67/0.00	-3.27/0.00
p(Hansen)	11.66/0.46	13.5/0.26	19.76/0.39	13.92/0.18	8.96/0.5
Year Dummies	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector, and on the combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies, and district level controls (population density, number of government schools, and hospitals). Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are predetermined controls and year dummies and GMM type instruments are lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1.

The results of this study show that the impact of potential rivals differs from sector to sector. Specifically, we find that candidates are punished by reducing transfers in social sectors if the competition is high. However, incumbents tend to cater to higher competition through more funding in infrastructure sectors. One justification for reverse signs in social and infrastructure may be that incumbents are tempted to divert resources from social to infrastructure sectors due to lack of funds. Spáč (2016) argues that when elected political representatives are unable to provide enough funding to all regions in their constituencies, they have to decide where to provide limited funds and where to reduce or cut expenses. Furthermore, as argued above since geographically targetable, i.e., "pork-barrel" projects are more attractive in majoritarian systems; politicians spend more in these sectors to avoid tough competition at the ballet. Voter turnout has a positive impact on budget allocations in social sectors while negative in infrastructure sectors. Several reasons may be proposed for this finding. Firstly, the voter turnout is particularly high in urbanised and developed districts of Punjab like Lahore, Faisalabad, and Rawalpindi where infrastructure facilities are already sufficiently high. On the other hand, the districts like Dera Ghazi Khan, Rajanpur etc. have significantly low voter turnout along with the underdeveloped infrastructure. Resultantly, they have a higher demand for infrastructure facilities as compared to the developed districts. Secondly, urbanised districts with higher voter turnout possess higher literacy rates as well. It might be that incumbents find it difficult to motivate learned and mobilised voters through the provision of roads or sanitation and consequently spend more on social sectors. Comparing sector-wise results, we find that resources are more heavily allocated in infrastructure sectors than in the social sectors. The results of this study are also endorsed by macro-level literature which argues that large scale transfers opt for the distribution of distributive benefits under proportional representation. Whereas majoritarian systems tend to distribute goods that are geographically targetable, i.e., "pork-barrel" projects (Lizzeri & Persico, 2001; Milesi-Ferretti et al., 2002). Therefore, scope for targeted pork-barrel projects and patronage is more suspected in majoritarian systems like Pakistan.

We have applied three alternate estimations for robustness purposes. Since this analysis is done on aggregated data across electoral periods which may lead to biased estimates, we have run regressions on the non-averaged and disaggregated panel as a first robustness check. Secondly, given that the unit of analysis in the study is the district, the merging of newly-formed six districts in their mother districts for the 2002 elections; later can give misleading results, we have estimated the model on the samples of original districts till the 1999 elections and the set of districts including the newly-formed ones for the period 2000 onwards. Third, the timings of elections may impact the public spending significantly; we have estimated the models using the election cycle as an additional control. Moreover, southern Punjab is a historically neglected region in the Punjab province – the politics and dynamics of the region are different from the rest of the Punjab; therefore, we have also used its dummy as an additional political control. The results of these specifications are given in appendices (A – D). Our main findings remained robust to all these alternative specifications.

3.1. Conclusion and Implications

The efficient allocation and use of these resources are key drivers for the economic development of any economy. Therefore, the central question distributive politics has to deal

with is that how public funds are targeted by politicians. This paper is an attempt to investigate the potential manipulation in public development expenditures at a sub-national level in Pakistan. We have employed data from annual development plans of the Punjab province of Pakistan from 1988-2016. Using the system GMM estimation technique, we have found significant resource diversion towards co-partisans at the district level. The funds are diverted exceedingly if the district is considered safe by the incumbents. Furthermore, the incumbents use development funds to cater to higher competition at the ballot by larger spending in the infrastructure sectors. However, they spend more in the education sector in the districts where the voter turnout is high. The overall conclusion is that the incumbents tend to focus on the infrastructure sector more heavily than the social sector to meet their electoral incentives. We suggest the introduction of an economic formula in the spirit of the one followed for the current expenditures in the country for the distribution of development sector budget to avoid such distortions in the future.

Unavailability of the district-level budget other than the development budget limits our scope to analyse partisan motives of the incumbents in other budget categories. Moreover, constituency level budget and other demographic data are also absent or inaccessible in Pakistan which enforces us to aggregate data at the district level at the cost of accuracy and precision of the empirical findings. Further research could focus on other economic policy instruments and other provinces of Pakistan. One dimension for future research may be to see the impact and coordination of campaign financing with fiscal manipulation. The biggest challenge in a country like Pakistan is access to and availability of campaign financing data. However, it would be interesting to examine whether a budgetary amendment complements or substitute campaigning. Further research may also test the impact of this manipulation on the re-election prospects of the incumbents. By calculating re-election probabilities, it would be possible to test more directly whether increases in transfers are larger to districts where the incumbent's re-election prospects are poor.

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APPENDIX A

Full Sample Estimations (Non-Averaged Values and Unbalanced Panel of 34 Districts)

	Roads & Bridges Budget		Water Supply Budget		Education Budget		Health Budget	
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Affiliation (Majority Above 50%)	1.188***		2.214***		1.519		0.714*	
	(0.438)		(0.537)		(0.984)		(0.367)	
Affiliation (Majority b/w 50-75%)		1.159**		1.528***		1.946*		0.569
		(0.500)		(0.367)		(1.086)		(0.447)
Affiliation (Majority b/w 75-100%)		1.213**		1.425***		1.863*		0.900*
		(0.489)		(0.492)		(1.105)		(0.492)
Potential Rivals	0.00264	0.00309	-0.179	-0.110	0.127	0.115	-0.0806	-0.0833
	(0.0639)	(0.0641)	(0.117)	(0.0711)	(0.157)	(0.168)	(0.0999)	(0.100)
Voter Turnout	0.00008*	0.00008*	-0.00002	0.000026	0.00057***	0.00065***	0.00014***	0.00015***
	(4.42e-05)	(4.42e-05)	(2.39e-05)	(1.88e-05)	(8.27e-05)	(9.02e-05)	(3.12e-05)	(3.25e-05)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	871	871	904	904	870	904	908	908
Number of id	34	34	34	34	34	34	34	34
AR(2)/p	0.608/0.54	0.590/0.55	-0.272/0.78	-0.440/0.66	1.362/0.173	2.056/0.039	1.301/0.19	1.228/0.22
AR(1)/p	-9.404/00	-8.334/0.00	-10.34/0.00	-8.279/0.00	-5.293/0.00	-5.913/0.00	.	.
Sargan/p	280.9/0.0	281.0/0.0	124.8/0.0	254.1/0.0	52.96/0.224	65.08/0.0413	164.3/0.0	163.50.0

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector and on combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies and district level controls (population density, number of government schools and hospitals). Instruments for difference equation are lag values of dependent variable. Standard instruments for level equation are year dummies and GMM type instruments are lags of dependent variable. *** p<0.01, ** p<0.05, * p<0.1

APPENDIX B

Full Sample Estimations with Additional Controls (Non-Averaged Values and Unbalanced Panel of 34 Districts)

	Roads & Bridges Budget		Water Supply Budget		Education Budget		Health Budget	
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Affiliation (Majority Above 50%)	1.039**		2.145***		1.449		0.879**	
	(0.445)		(0.537)		(1.096)		(0.382)	
Affiliation (Majority b/w 50-75%)		1.065**		1.502***		1.828		0.560
		(0.499)		(0.365)		(1.127)		(0.457)
Affiliation (Majority b/w 75-100%)		1.014**		1.424***		1.618		1.407**
		(0.503)		(0.488)		(1.285)		(0.557)
South Punjab Dummy	-0.507	-0.513	-0.853**	-0.599**	-0.107	-0.294	0.901*	1.181**
	(0.341)	(0.346)	(0.349)	(0.268)	(0.746)	(0.799)	(0.509)	(0.558)
Election Year Dummy	-2.325***	-2.334***	-2.668***	-2.650***	-3.304*	-3.251	-4.970***	-5.342***
	(0.583)	(0.589)	(0.820)	(0.605)	(1.780)	(2.205)	(0.859)	(1.051)
Potential Rivals	-0.0353	-0.0361	-0.233*	-0.127*	0.122	0.0915	0.00117	0.0195
	(0.0682)	(0.0688)	(0.119)	(0.0711)	(0.160)	(0.179)	(0.111)	(0.113)
Voter Turnout	8.44e-05*	8.45e-05*	-3.20e-05	2.09e-05	0.000561***	0.000631***	0.000176***	0.000199***
	(4.37e-05)	(4.38e-05)	(2.43e-05)	(1.89e-05)	(9.15e-05)	(9.72e-05)	(3.68e-05)	(4.12e-05)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	871	871	904	904	870	904	908	908
Number of id	34	34	34	34	34	34	34	34
AR(2)/p	0.761/0.45	0.752/0.45	-0.304/0.76	-0.525/0.59	1.247/0.21	2.080/0.037	1.302/0.19	1.222/0.22
AR(1)/p	-9.341/0.0	-8.150/0/0	-10.21/0.0	-8.882/0.0	-5.347/0.0	-5.949/0.0	.	.
Sargan/p	285.1/0.0	285.0/0.0	119.4/0.0	253.0/0.0	53.21/0/161	65.79/0.023	158.1/0.0	152.5/0.0

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector and on combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies and district level controls (population density, number of government schools and hospitals). Instruments for difference equation are lag values of dependent variable. Standard instruments for level equation are year dummies and GMM type instruments are lags of dependent variable. *** p<0.01, ** p<0.05, * p<0.1

APPENDIX C

Half Sample Estimation from 1988-1999 (Before Formation of New Districts in Punjab)

	Roads & Bridges Budget		Water Supply Budget		Education Budget		Health Budget	
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Affiliation (Majority Above 50%)	1.437		2.306***		1.458**		3.351*	
	(0.879)		(0.805)		(0.605)		(1.662)	
Affiliation (Majority b/w 50-75%)		1.311		1.165		0.846*		0.740
		(1.458)		(0.963)		(0.479)		(4.550)
Affiliation (Majority b/w 75-100%)		-0.603		3.049***		1.519***		13.84
		(1.673)		(0.863)		(0.484)		(13.21)
Potential Rivals	-0.361	-0.443	-0.262	-0.237	0.107	0.321	-1.592	-4.380
	(0.335)	(0.466)	(0.300)	(0.230)	(0.998)	(0.453)	(1.294)	(5.620)
Voter Turnout	0.00697	0.00309	0.00489	-0.00126	0.00737	-0.000948	0.0153	0.0205
	(0.00427)	(0.00423)	(0.00634)	(0.00486)	(0.00722)	(0.00709)	(0.00947)	(0.0252)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	313	313	319	319	289	289	318	318
Number of id	29	29	29	29	29	29	29	29
AR(1)/p	-2.876/0.0	-2.680/0.0	-2.138/0.0	-1.902/0.0	-2.075/0.0	-2.428/0.0	-2.120/0.0	-2.185/0.0
AR(2)/p	-0.222/0.82	0.439/0.66	0.833/0..41	0.555/0.58	1.378/0.17	1.222/0.22	-0.618/0.54	0.397/0.9
Sargan/p	1.771/0.88	1.228/0.74	4.485/0.48	3.942/0.26	0.0937/0.94	4.569/0.74	9.305/0.05	0.546/0.76

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector and on combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies and district level controls (population density, number of government schools and hospitals). Instruments for difference equation are lag values of dependent variable. Standard instruments for level equation are year dummies and GMM type instruments are lags of dependent variable. *** p<0.01, ** p<0.05, * p<0.1

APPENDIX D

Half Sample Estimation from 2000-2017 (After Formation of New Districts in Punjab)

	Roads & Bridges Budget		Water Supply Budget		Education Budget		Health Budget	
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Affiliation (Majority Above 50%)	1.210*		1.983***		1.788		-0.451	
	(0.620)		(0.539)		(1.474)		(0.586)	
Affiliation (Majority b/w 50-75%)		1.305*		2.280***		0.0196		0.306
		(0.675)		(0.546)		(1.059)		(0.726)
Affiliation (Majority b/w 75-100%)		0.798		1.466		-1.474		-1.534
		(0.906)		(1.455)		(1.435)		(1.528)
Potential Rivals	-0.735	-1.006	-0.343	-0.538	2.151	2.832**	-2.318***	-1.491**
	(0.626)	(0.805)	(0.990)	(1.042)	(1.318)	(1.209)	(0.687)	(0.646)
Voter Turnout	0.00014	0.00017	1.05e-05	7.24e-05*	0.0004	0.00048	6.57e-05	2.71e-05
	(8.90e-05)	(0.0001)	(8.19e-05)	(4.08e-05)	(0.00047)	(0.00048)	(8.41e-05)	(0.00012)
Lagged Dependent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	563	563	556	556	557	557	561	561
Number of id	34	34	34	34	34	34	34	34
Sargan/p	43.86/0.016	43.96/0.007	68.68/0.0	148.9/0.0	32.95/0.13	32.77/0.085	28.62/0.28	21.34/0.56
AR(2)/p	1.644/0.1	1.692/0.09	-0.224/0.82	-0.433/0.66	1.002/0.13	1.013/0.311	0.860/0.39	1.066/0.28
AR(1)/p	-3.189/0.0	-3.187/0.0	-3.522/0.0	-3.564/0.0	-1.105/0.0	-1.105/0.0	-4.032/0.0	-4.068/0.0

Notes: The table shows the estimated coefficients with standard errors in parentheses. The equations are estimated using a system GMM two-step procedure with a collapse option to control the number of instruments. Log of per capita budget in roads, water supply, education, health sector and on combined budget in these four sectors is taken as the dependent variable. All equations include lagged dependent variables, year dummies and district level controls (population density, number of government schools and hospitals). Instruments for difference equation are lag values of dependent variable. Standard instruments for level equation are year dummies and GMM type instruments are lags of dependent variable. *** p<0.01, ** p<0.05, * p<0.1.