

Ph.D. Dissertation

**Essays on the Political Economy of Resource Distribution: A
Case Study of Punjab, Pakistan**

By

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(01/PhD-Eco/PIDE/2014)

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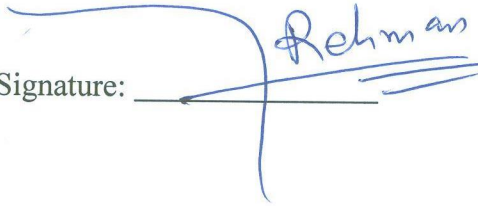
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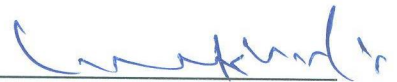
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Dedicated to my Loving Parents

Mian Nazir Ahmad Bhandara

&

Hafiza Faiz Begum (Late)

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In the name of Allah, The Most Affectionate, the Merciful. [All] praise is [due] to Allah, Lord of the worlds. Blessings on the Praiseworthy and Glorious prophet Muhammad (Peace Be Upon Him) and the family of Muhammad (Peace Be Upon Him). I wish to express my sincere appreciation to my supervisors, Dr. Muhammad Nasir & Dr. Idrees Khawja, who have convincingly guided and encouraged me to be professional and to complete this dissertation. Without their persistent help and intellectual feedback, the goal of this study would not have been realized.

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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|------|-------------------------------------|
| ADP | Annual Development Plan |
| ATK | Attock |
| BHK | Bhakar |
| BWN | Bahawalnagar |
| BWP | Bahawalpur |
| CHK | Chakwal |
| DGK | Dera Ghazi Khan |
| DPI | Database of Political Institutions |
| ECP | Election Commission of Pakistan |
| FSD | Faisalabad |
| GMM | Generalized Method of Moments |
| GUJ | Gujrat |
| GUJR | Gujranwala |
| IJI | Islami Jamhoori Itehad |
| IND | Independents |
| JEH | Jehlum |
| JHG | Jhang |
| KAS | Kasur |
| KESC | Karachi Electric Supply Corporation |
| KHN | Khanewal |
| KHU | Khushab |
| LHR | Lahore |
| LYA | Layyah |
| MGR | Muzaffargarh |
| MMA | Mutehadda Majlis-e- Amal |
| MPA | Member Provincial Assembly |
| MTN | Multan |
| MWL | Mianwali |

| | |
|-------|---|
| NAB | National Accountability Bureau |
| OKA | Okara |
| PBC | Political Budget Cycle |
| PBS | Punjab Bureau of Statistics |
| PDA | Pakistan Democratic Alliance |
| PMLJ | Pakistan Muslim League Junejo Group |
| PMLN | Pakistan Muslim League Nawaz |
| PMLQ | Pakistan Muslim League Quaid Group |
| PPPP | Pakistan Peoples Party Parliamentarians |
| PSLM | Pakistan Social and Living Standards Measurement Survey |
| PTI | Pakistan Tehrik-e-Insaaf |
| RJP | Rajanpur |
| RWD | Rawalpindi |
| RYK | Rahim Yar Khan |
| SAR | Sargodha |
| SHK | Sheikhupura |
| SKT | Sialkot |
| SNGPL | Sui Northern Gas Pipeline Limited |
| SSGC | Sui Southern Gas Company |
| SWL | Sahiwal |
| TTS | Toba Tek Singh |
| VHR | Vehari |
| VTO | Voter Turnout |
| WAPDA | Water and Power Development Authority |

ABSTRACT

Public resources play a crucial role in achieving the development goals of any economy provided they are utilized effectively. Effective use of public resources becomes even more critical in the countries facing extensive financial constraints and budget deficits. Despite having a fairly ruled based resource distribution mechanism under National and Provincial Finance Commissions in Pakistan, the development budget both at the national and provincial levels is allocated on a discretionary basis. This creates space for the inculcation of personal and partisan motives in the distribution of limited resources available for development purposes. Partisan theory of distributive politics highlights the role of political incentives in the distribution of public resources for particular benefits. Three important questions arise from this scenario. First, why do governments involve in malpractices in the redistribution of resources? The question largely revolves around the motivations behind such fiscal manipulations. Second, how their motivations to manipulate differ during the term of their office. This question arises from the fact that governments are observed to change fiscal instruments when elections are near. Third, what are the underlying political and institutional structures which make these manipulations occur? This area explores the characteristics of politicians and constitutional setups to find determinants of these fiscal manipulations. This study is designed to investigate these three questions in the sphere of development planning of Pakistan at a sub-national level. Annual development plans of the government of Punjab since 1988 to 2017 have been used to analyze district level development fund allocations. We have particularly used outlays (measured in million rupees) on social and infrastructure sectors including education, health, roads, and water supply. The reason for choosing

development plans is that these budgetary appropriations, which are commonly earmarked for large-scale development projects, have important welfare considerations. Moreover, the development budget in Pakistan follows no strict formula of distribution and is mostly discretionary which creates space for political manipulation. The study is divided into three essays for addressing each question separately.

The first essay is an attempt to investigate the potential manipulation in the public development expenditures at a sub-national level to test the relevance of partisan theory empirically. The partisan theory postulates that the incumbents divert greater resources towards the districts represented by their co-partisans. Favoring co-partisans at the cost of rivals is done either to reward their voters in previous elections or to enhance their re-win fortune in the future. Using the system GMM estimation technique, we have found significant resource diversion by the provincial government towards co-partisans at the district level. The incumbents in Punjab are found to spend in districts with 50% and above majority to increase their overall representation in the assembly. The incumbents also use development funds to cater to higher competition at the ballot by larger spending in the infrastructure sectors. However, they spend higher in the education sector in the districts with higher voter turnout (showing higher mobilization of the voters). The overall conclusion of this essay 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 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 in the future.

In our second essay, we have addressed the question that whether the incumbents use public resources near elections to enhance their winning probability or not? The use of public funds for re-election purposes around election times is a long-debated subject in distributive politics. The empirical literature on the existence of the political budget cycles is mixed. This paper is an attempt to find the political budget cycle in a developing and inexperienced democracy country context. We have used development spending data of 29 districts of the Punjab province of Pakistan over the period 2000-2017. The system GMM technique has been employed for estimation to address the lagged dependent variable bias and to control for the potential endogeneity of the explanatory variables. The study has found significant evidence for the political budget cycle in our data. The cycles are not only systematic but also go beyond the election year. Spending is systematically reduced in post-election years and increased gradually in subsequent years. The cycle of positive spending is confined to the election year in the water supply and sanitation sector appears one and two years before elections in the education sector and appears three years before the elections in the roads and bridges sector. The health sector, however, seems to be less attractive for enhancing re-election prospects in our case. Moreover, Pakistan Muslim League (N), the major political party which has reigned the maximum time in the province is found to spend significantly less in the health, education and roads sector near elections in our study.

The third paper in this study explores the impact of personal characteristics of the politicians on resource distribution patterns and economic outcomes. Specifically, we are interested in the fact that how the political and economic consequences may differ in an elite-dominated political setup. Democracies all over the world are dominated by dynasties. The dynastic politicians based on their familial lines inherit

substantial electoral and bargaining power. We have tested the impact of dynasties on the distributive benefits and policy outcomes empirically. The empirical findings of the study show that the dynastic legislators as compared to the non-dynastic legislators fetch larger distributive benefits to their districts. Further, the presence of dynastic legislators harms the economic performance of their districts despite bringing greater public resources. We have used district-level data from the Punjab province of Pakistan for the period 2002 to 2017 for this study. We propose three country-level factors to support our finding of the negative impact of dynasties on economic performance. The discrepancy in the allocated and actual realized development expenditures, widespread corruption by the dynastic politicians and patron-client political ties in Pakistan cause the low performance of development spending. The findings of the study are also consistent with the theoretical model proposed by (Asako et al., 2015).

INTRODUCTION

“Economics is concerned with expanding the pie while politics is about distributing it” (Alsina and Roderick, 1994)

Effective and efficient utilization of public resources is critical for the development of any economy. The key programs in health, education, and infrastructures are conducted by the public sector in countries around the world. However, existing literature depicts a fragile link between the public sector spending and the achievement of the development outcomes in most of the developing economies. The possible reason advanced by researchers for this weak correlation is government ineffectiveness. Inefficiency, corruption, and wastage of resources are some forms of this ineffectiveness. Poor resource usage is due in part to the fact that public spending is a complex, multifaceted process, which is not usually transparent to the general public (Ody et al., 2006). Effective use of public resources becomes even more critical in countries like Pakistan faced with prevalent financial constraints and budget deficits. Despite having a fair rule-based resource distribution mechanism under National and Provincial Finance Commissions in Pakistan, the development budget both at the national and provincial levels is allocated on a discretionary basis. This discretionary disbursement creates space for the inculcation of personal and partisan motives in the distribution of limited resources available for development purposes. It is imperative to investigate this area deeply so that better policies for fair and equitable distribution of public resources that are free from any partisan and personal interests could be devised.

Three important questions arise in this regard. First, why do governments involve in malpractices in the redistribution of resources? The question largely

revolves around the motivations behind such fiscal manipulations. Second, whether these motivations to manipulate fiscal resources differ during the electoral term of the incumbent's office. This question arises from the fact that governments are observed to change fiscal instruments when elections draw near. Third, what are the underlying political and institutional structures which cause these manipulations to occur more often? This area explores the characteristics of politicians and constitutional setups to find determinants of these fiscal manipulations. This study is designed to investigate these three questions in the sphere of development planning of Pakistan at a sub-national level. Annual development plans of the government of Punjab since 1988 to 2017 have been used to analyze district level development fund allocations. We have particularly used outlays on social and infrastructure sectors including education, health, roads, and water supply.

Disaggregation of development budget into social and physical infrastructure sectors may be used to judge provincial leadership's priorities for the different development sectors. Many incentives and factors may play a role in determining these preferences of the politicians towards different sectors. Spáč (2016) argues that when elected political representatives are unable to provide enough funding to all regions and sectors in their constituencies, consequently they have to decide their priorities. In Pakistan approval of development projects goes through several bodies working at the federal level like Priorities Committee (PC) and Appropriations Committee chaired by the Planning Division, that decides on the priorities for project selection and sector-wise allocations. Projects competing for limited development funds are prioritized based on fund availability, past performance, and the phasing set in the PC-I. However political and social objectives are given more importance in this

prioritization process (Planning Manual, Ministry of Finance; page:09)¹. Lack of funds therefore, compels the incumbents in Pakistan to prioritize certain sectors over the others. This prioritization may lead to increase in allocations for one sector with a simultaneous decrease in the other. The provincial government of Punjab has prioritized education and health sector over the years but theoretically politician's preferences at local level are more tilted towards citizen focused and targeted benefits.

Several explanations may be proposed for this differential behavior. (i) The political structure of Pakistan is captured by elite families and oligarchies. Keefer (2007) proposed that broad public policies are not promised by the politicians in Pakistan. Because their promise credibility is largely based upon patron-client ties supported through targeted transfers to the voters. He also suggested that Pakistani political parties differ very slightly or rarely on the broad policy promises or policy stances. Hence political competition on bases of broad policy issues is almost absent which leads to the expectation for low provision of broad-based public goods and more provision of private or targeted goods in such environments. A World Bank report in 2002 suggested that in Pakistan people had almost 25% higher access to potable water as compared to the countries with similar development and demographic indicators. The targeted benefits attached to the potable water with immediate accessibility and visibility to the electorates was the potential cause for this edge of Pakistan over the other comparable countries. On the other hand, Pakistan was 20% below the expectation in literacy rate as compared to other countries. The report claimed that the informational demands for education and health are very high being transaction-intensive and depend on the behaviors of providers which cannot be monitored easily. On the other hand, there are provisions like roads that are not only

¹See Planning Manual, Planning Commission of Pakistan(2010)

quicker to implement and verify but also taking credit by politicians is easier. Hence, physical infrastructure projects like roads, water supply & sanitation are preferred by policymakers rather than education and health sectors.

Easterly (2003) has also proposed a political economy hypothesis for poor service delivery and poor performance in education and health sectors in Pakistan. Pakistan's growth without development is primarily due to the dominance of the elite who do not support human capital investment in the masses. (Bourguignon & Verdier, 2000) have argued that widespread education is not supported by the oligarchies due to the fear of high demands for political power by the educated public as a result. The elite enforce their preferences on under-investment in human capital by keeping social service delivery highly centralized, with all decisions on the allocation of resources taken at the top. Since development projects in Pakistan compete with each other due to lack of funds, higher resources in targeted benefits are expected to be extended at the cost of low allocations in social sectors

(ii) A larger scope for corruption by the political representatives in the infrastructure projects may be another reason for greater interest in such projects. Lehnly et al. (2018) has proposed that the grass-root monitoring in government's private goods provisions is more effective as compared to the public goods. Therefore, the individuals can better judge the delivery or theft in the government provisions of the goods such as subsidized food, education or medical care and risk of corruption is minimized as a result. However, in the infrastructure projects not only the monitoring incentives at individual level are weak but the political incentives for corruption, due to the size of projects, are reasonably high.

(iii) Large scale transfers are used for the distribution of distributive benefits under Proportional Representation (PR). Whereas majoritarian systems tend to

distribute goods that are geographically targetable, i.e., "pork-barrel" projects (Lizzeri & Persico, 2001 and Milesi-Ferretti et al., 2002). Therefore, scope for targeted pork-barrel projects and patronage such as roads is more suspected in Majoritarian systems like Pakistan. The macro-level literature in this field also argues that proportional representation and majoritarian electoral systems offer different incentives to parties regarding redistribution. Therefore, we expect that the politicians in Pakistan may prefer infrastructure sectors over the social sectors. Although health clinics and schools are equally visible to the electorates yet the targeted population that uses a road is fairly high in numbers. Besides, specific street or area can be targeted more specifically through infrastructure projects that make them more attractive to the politicians and electorates alike.

The study is divided into three essays for addressing each of the questions (raised in above discussion) separately. Theory of partisan politics postulates that incumbents favor their allied politicians and constituencies for their electoral purposes (Core versus swing voter hypothesis)². They support politically affiliated constituencies to increase their probability of winning elections in the next term. Henceforth, the first essay tests the relevance of partisan theories of distributive politics which are aimed at explaining motivations of partisan biases in a developing country context. The objective of the first essay in this study is to empirically test whether the core or swing voters' hypothesis prevails in the Punjab province of Pakistan. Also, we have tested the underlying political objectives of politicians to explain the variation within the core. Subsequently, the secondary objective is to examine whether the mobilization and coordination efforts³ at the district level are rewarded by the incumbent government. We have used data on member provincial

² See Cox and McCubbins (1986); Lindbeck and Weibull (1993) and Dixit and Londregan (1996)

³ See Cox (2009)

assemblies (MPAs) elected to the provincial assembly of Punjab from 1988 to 2013, for measuring the political affiliation of districts with the provincial government. Besides, information on voter turnout and the number of candidates running for a seat at the district level is used as additional political determinants for the politically motivated fiscal manipulations.

Data for this study has been gathered from the provincial assembly of Punjab, the election commission of Pakistan, Punjab Bureau of statistics and annual development plans published by the planning and development department of the government of Punjab. System GMM technique has been used for estimations to control for the potential endogeneity and lagged dependent variable bias.

We have found a significant impact of the political affiliation of a district with the incumbents on the budgets allocated for that district. The districts where the incumbent party holds more than 50% of seats are receiving significantly higher earmarks. Districts are receiving higher funds in the education sector only when they enjoy a clear majority while the coefficient remains insignificant in the health sector. Our finding suggests that the incumbents tend to prefer allied districts over the others. The finding is consistent with the studies who postulate that -motivated by the electoral and re-election incentives - the incumbents target those regions where they received higher votes (Atlas et al., 1995; Besley & Case, 1995; Rodden, 2002; List & Sturm, 2006; Knight, 2008; Lim, 2013).

The study also found that more mobilized voters and districts receive greater transfers in social sectors. However, the higher competition faced at the ballot is catered with greater spending in the infrastructure sectors. Hence, politicians tend to reward mobilization and coordination efforts differently at the district level. Higher political competition is tackled through more funding to sectors with targeted and

visible benefits. On the other hand, more mobilized districts are rewarded through more funding in the social sectors. That is, the infrastructure sector is prioritized by the incumbents when 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 voted for them previously. Overall, this essay contributes to the broad strand of literature in the field of economics and political science which investigates the causes and consequences of distributive politics. We complement this literature by testing these theories empirically. Moreover, the majority of literature in this field has only tested one vote-getting strategy i.e. higher transfers to a region with higher votes or seats. We have also tested empirically the mobilization and coordination efforts to reward allies at the district level by the incumbents. Both of these are also termed as vote-getting strategies by (Cox, 2009).

Another relevant observation in the public resource distribution is that the incumbents trigger fiscal instruments near elections. This scenario is called a political budget cycle (PBC) in distributive politics. These cycles are believed to be more common in the capital spending of the governments. The reason is that public investment projects are often used for political purposes because they are largely discretionary and easy to target to specific constituencies and locations (Ferejohn 1974; Tanzi & Davoodi 1997; Keefer & Knack 2002). Therefore, our second essay intends to capture the political budget cycle in capital expenditures. Our primary objective in this study is to identify the presence of a political budget cycle in the allocations of the ADP of Punjab.

Public capital expenditures are preferred by politicians in developing countries for re-election purposes. The reason is that these expenditures are largely discretionary and flexible. Moreover, the geographical targeting of the specific

locations and constituencies is easier through such projects (Ferejohn, 1974; Bates, 1983; Tanzi & Davoodi, 1998; Schuknecht, 2000; Bardhan, 2002; Keefer & Knack, 2002; Khemani, 2004;). These politically motivated allocations of public investment create significant economic costs. Hence, the identification of political manipulation in this sector is important to formulate better policies for the eradication of such practices. Public capital expenditures at the provincial level in Pakistan provide an intriguing scenario to test the existence of PBC. The second essay of this study is designed to determine PBC in the public capital expenditures of 29 districts granted by the provincial government of Punjab over the period 2000-2017. Our study period covers three general elections held in the last three decades. The selection of this period is driven by the fact that all three elections in this period were held at a pre-determined time. Electoral planning of expenditures is more certain and easy if the election dates are known well before the election dates. Moreover, this time selection has helped us to avoid the issue of endogenous elections.

The empirical literature on the existence of the political budget cycles brought about mixed evidence (Alt & Chrystal, 1983)⁴. We have shown that despite disagreement within the literature, the available evidence suggests the existence of an electoral cycle in the provincial government's development spending. The cycle is not only more systematic but also it goes beyond the election year. Moreover, the extent of the cycle varies from sector to sector. Overall, spending significantly lowers the in the post-election year which is quite consistent with the existing literature. In water supply & sanitation sectors, the cycle is confined to election year only; in the education sector it goes up to one year before elections. In health, it appears only in the period two years before elections. In the roads and bridges sector, the cycle

⁴ Alt and Chrystal (1983) in their review concluded that "no one could read the political business literature without being struck by the lack of supporting evidence."

appears in the mid of the term. The evidence for the electoral cycle in the health sector, however, is not very robust. The health sector being less visible seems to be less attractive to the incumbents in our case. Water supply and sanitation projects, on the other hand, involve short term and visible benefits and are therefore targeted in the election year only.

In addition to opportunistic political business and budget cycles, there is also a substantial literature on partisan cycles in policies motivated by (Hibbs, 1977). In Punjab, the ruling parties in the studied period were Pakistan Muslim League Nawaz and Pakistan Muslim League Quaid which have no clear cut ideological differences on economic policies. Hence our ideology variable only captures the party impact. We have found a strong negative impact of the party on the budget in the health, education, and roads. The water supply & sanitation sector, however, remained unaffected from party orientation. Spending in this sector due to its targeted and visible benefits seems to be used to meet the re-election incentive of the incumbents. Our empirical evidence for the public investment cycles is suggestive of the strategic placement of investment goods at election times. Our findings on public investment cycles resonate with other evidence in the literature. Ferejohn (1974), Tanzi and Davoodi (1998), Keefer and Knack (2002), and Khemani (2004), amongst others, have argued that public investment projects are often used for political purposes because they are largely discretionary and easy to target to specific constituencies and locations.

The analysis of distributive politics remains incomplete until we account for the characteristics of the politicians who are the key players in the resource distribution sphere. Politics in Punjab is fabricated by familial and dynastic political traditions. Dynasties play an important role in the political power structure of Punjab.

However, the empirical literature on the role of dynasties largely holds them accountable for fiscal distortions and corruption. It is widely believed that these political dynasties possess enough political power to retain and regain power. The question here arises that what will be the impact of these family politicians (with significant electoral and bargaining advantages) on the political competition. Asako et al. (2015) proposed that the dynastic legislators bring more distributive benefits (public resources) to their constituencies in comparison to their non-dynast counterparts. And most importantly the economic performance is negatively affected by these dynasts despite extracting larger distributive benefits to their constituencies. Henceforth, our third essay is designed to bring in the role of dynasties into the resource distribution mechanism of Pakistan. This paper is an attempt to test the predictions of the model proposed by Asako et al. (2015) empirically using data on politicians from Punjab, Pakistan. The paper is designed specifically to test the impact of dynasties on the distributive benefits (fiscal transfers) and the policy (economic) outcomes in Punjab. The data on development spending in the education, health, roads and water supply & sanitation sectors at the district level made by the provincial government of Punjab is used to test the dynastic MPAs impact on the distributive benefits. Secondly, to test the impact of dynastic legislators on the economic outcomes, we have used district-level data on school enrollment rates, number of patients treated in government hospitals, number of beds in government hospitals and length of metallic roads. The analysis is divided into three parts; first, we have provided a detailed descriptive analysis to explain the structure of political dynasties, rural-urban divide and the socio-economic situation of the province using some indicators from six Pakistan Social and Living Measurement surveys (conducted from 2004 to 2014, in alternate years). Next, we have tested the impact of dynasties on

development budgets for four sectors of education, health, roads & bridges, and water supply & sanitation. Furthermore, to investigate the impact of dynasties on the actual performance indicators, we have examined the effect of dynasties on the school enrollment, the number of patients treated in government hospitals and the length of paved road.

The data evidence from the first part of this essay shows that the spread of dynasties in the province is almost uniform across elections and across rural-urban districts. All the political parties of Pakistan are equally represented by the dynastic politicians. Rural areas are heavily dominated by the landowning politicians and consequently performing lowest on the socioeconomic indicators. The least performing districts on literacy, source of drinking water and fuel used for cooking and lighting are not only highly ruralized but also dominated by the feudal class politicians. The urban districts such as Lahore, Faisalabad, Rawalpindi, and Gujranwala are not only relatively developed but also have the least proportion of feudal legislators.

The finding from the second part shows that the districts dominated by the dynastic legislators more heavily were able to get more distributive benefits. The finding is consistent with Asako et al. (2015) model that the dynastic legislators have more bargaining power than the non-dynastic legislators which helps them to draw more resources towards their home constituencies. As far as economic outcomes are concerned, dynasties are affecting them inversely. All three indicators from the health, education and roads sector are significantly and negatively affected by the presence of dynastic legislators. The pattern of increased spending with no or negative effects on public services is consistent with previous work by Caselli and Michaels (2013) and Monteiro and Ferraz (2010). We propose three country-level factors to support our

finding of the negative impact of dynasties on economic performance. The discrepancy in the allocated and actual realized development expenditures, widespread corruption by the dynastic politicians and patron-client ties overwhelming the distributive politics in Punjab cause the low performance of development spending.

Essay 1

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

1.1. 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. Favoring political allies or constituencies in the allocation of public funds at the expense of political rivals is a widespread phenomenon in distributive politics (Shepsle & Weingast, 1981; Del Rossi, 1995). An important empirical question is why incumbents may favor some constituencies over the others in resource allocation

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 favor. Empirical support for core versus swing voter hypothesis is mixed (Cox & McCubbins, 1986; Lindbeck

& Weibull, 1987; Snyder, 1989; Case, 2001). 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 maximize 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 (Lindbeck & Weibull, 1987; Case, 2000; Khemani, 2003). 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% of the total votes in general elections were shared by two parties; the Pakistan Muslim League (PMLs) and Pakistan Peoples Party (PPP). In Punjab 55% of the votes were secured by PMLs, 25% by PPP, and the remaining 20 % 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% to 10% en-bloc⁵ rallying of votes from small parties or key players in favor of a key contender brings a massive change in results (PILDAT, 2008). Moreover, First Past the Post System (FPTP)⁶ and simple plurality electoral laws do not require securing 50% 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 government rather than to secure maximize 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

⁵⁵If a group of people do something *en-bloc*, they do it all together and at the same time.

⁶A political system where a simple majority is required to win a seat or to form a government

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 district⁷ 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% 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 objectives⁸ 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% or more seats affiliated with the party in government are

⁷MPAs 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

⁸Khemani (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 maximizing the representation in the legislature, they will also focus on the swing or lesser safe districts.

receiving significantly higher earmarks. Moreover, the incumbents are found to spend equally in clear majority districts and districts closer to the 50% cut-off level. Hence the political objective of the incumbents in the Punjab province seems to be maximizing their representation in the legislative assembly. In addition, the study has found that more mobilized 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 prioritized by the incumbents when 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; Rodden, 2002; List & Sturm, 2006; Knight, 2008; Lim, 2013).

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 M. 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 mobilization and coordination efforts to reward allies at the district level by the incumbents. We complement this literature by testing these theories empirically. Moreover, the majority of the 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 mobilization and coordination efforts to

reward allies at the district level by the incumbents. Both of these are also termed as vote-securing strategies by Cox (2009).

The rest of the essay is organized as follows: Section 1.2 covers relevant literature on the political economy of resource distribution. Theoretical motivation is outlined in section 1.3 and a brief description of institutional and resource distribution mechanisms are given in section 1.4. Data and methodology are explained in section 1.5 of this essay. Section 1.6 explains our findings and section 1.7 concludes this essay with some policy suggestions.

1.2 LITERATURE REVIEW

“Distributive policies involve the allocation of federal funding to state and local governments mostly through formula grants but are also distributed through competitive, discretionary disbursements and congressional earmarks” (Thorson, 1998; Bickers & Stein, 2000; Lowry & Potoski, 2004). Wright (1974) pioneered in explaining the political factor's crucial part in federal funds allocation across states in the US. A highly positive link between New Deal spending per capita and electoral votes per capita was found across states in his study. Grossman's (1994) model states that the "political capital" of state politicians and interest groups was motivating US grants to states. Faced with limitation of resources, political representatives normally extend resources to certain constituencies at the cost of others specifically favoring 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 (Schwartz, 1994; Ames, 1995).

Before going further into the background of partisan theory, it is imperative to put 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 favor constituencies that came out with the highest vote support in the previous election (Hoare, 1992). The second motivation at play explaining the partisan distribution of resources may be to enhance their chance of re-election (Stein & Bickers, 1994; Milligan & Smart, 2005; 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 those 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-barreling are reduced (Boex & Martinez-Vazquez, 2005). As Spáč (2016) pointed out that if the 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.

As far as the type of pork-barrel culture or system is concerned, it may vary from country to country. The literature on partisan politics highlights that depending on country-specific conditions individual or centralized model of pork-barrel politics emerges and sustains in different environments (Hoare, 1992). Personalized benefits crossing party lines are reaped under individual models such as in the US where ad hoc coalition members of congress from both parties are made to pursue specific legislative agendas (Evans, 2004). On the other hand, in a centralized model (such as in Europe), parties are stronger than individual politicians' therefore governmental

parties and districts get higher rewards. Thus both models essentially differ in their ultimate effect on the distribution of resources. In the individual model, individuals get personalized benefits crossing party lines while in a centralized model party in government is in power to distribute resources. Hence, incumbent party extends benefits to its constituencies and districts where its members are in charge (Denemark, 2000). Milligan and Smart (2005) used data from electoral districts of Canada for the period 1988-2001 to study some political and economic factor's influence on regional development grants. Since Canada possesses a strong party system, no role of the individual members was found on distribution strategies. Party leaders were spending to get maximum support for the party. Also, more funds were directed towards the swing districts and the districts represented by affiliated members. A similar finding is proposed by Costa-i-Font et al. (2003). They studied the distribution of public resources in Mexico. The study found the Mexican government to be diverting more resources towards the regions where the incumbents came up with better election outcomes.

Pork barrel politics is more prevalent in a centralized, weak party and candidate-centered systems like in the US where candidates are more concerned about their performance rather than the overall party performance. Due to this very fact, they demand money for local projects to further their electoral fortune. Hence, their demand goes above the socially optimal level because they do not internalize the whole cost of the project which is shared by the whole society where benefits are accrued to a particular constituency (Ferejohn, 1974; Shepsle & Weingast, 1981).

While on the other hand amalgamation of an executive and legislative authority in the parliamentary system makes the electoral performance of individual MPs dependent on the ruling government's overall performance. Hence common pool

resources problem is resolved here because all local project social costs are internalized and the ruling party devises expenditure distribution in a way to benefit overall party performance. But despite limiting the scope of pork-barrel politics, this setting gives way to a strategic spending pattern, a different form of pork-barrel politics. Here ruling party favors their co-partisans at lower levels by strategically allocating more resources and for winning more and more national votes for higher representation in parliament, parties formulate strategies to enhance their electoral fortunes. This objective is achieved via higher allocations to co-partisans by strong parties in a system like England where lower tiers of government are funded by central government (Fouirnaies & Mutlu-Eren, 2015). Denmark (2004) analyzed Australia's Regional Partnerships Program which specified \$104 million for constituency-level grants in 2003-04 which is evidence from a parliamentary system. Enhancing re-election fortune, to re-establish its creditability even in safe rural seats may work as an incentive for parliamentary pork-barrel politics. But in the case of Australia, such efforts proved counter-productive due to the cautious behavior of voters getting government assistance from constituencies under independent candidates. The author proved with empirics using 1990, 1993 and 1998 elections that even in parliamentary system pork barrel politics are of immense importance. Similarly, Fouirnaies and Mutlu-Eren (2015) analyzed partisan control of 466 local councils from 1980 to 2013 and various central government grants from 1992-2012 in England to provide evidence of partisan allocation of local grants. They showed that almost a 13% higher amount of money was directed in favor of co-partisans. Swing councils, councils providing citizen-focused goods and councils having local elections were receiving more grants.

More than three decades of research document that federal monies are distributed in the United States not only in response to social welfare or economic efficiency considerations but also based on political and partisan criteria. The previous work on distributive politics outside the United States was mostly confined to countries with federal systems of government (Denemark, 2000; Solé-Ollé & Sorribas-Navarro, 2008; Brollo et al., 2013). However, advances in data availability now permit the extension of this line of research to other countries. Results identify patterns of partisan-political distributive politics in nations as diverse as Albania (Case, 2001); Argentina (Porto & Sanguinetti, 2001; Calvo & Murillo, 2004); Australia (Worthington & Dollery, 1998; Gaunt, 1999; Denemark, 2000); Brazil (Ames, 2002); Canada (Kneebone & McKenzie, 2001); Colombia (Crisp & Ingall, 2002); England (Ward & John, 1999; John & Ward, 2001); France (Cadot et al., 2006); Germany (Stratmann & Baur, 2002); India (Rao & Singh, 2003) ; Japan (Horiuchi & Saito, 2003); Mexico (Costa-i-Font et al., 2003; Magaloni, 2006); Peru (Schady, 2000); Russia, (Treisman, 1996); South Korea (Kwon, 2005) and Sweden (Dahlberg & Johansson, 2002); Africa (Kasara, 2007), Canada (Milligan & Smart, 2005), Ireland (Considine et al., 2008; Suiter & O'Malley, 2014); Chzec Repulic (Hoare, 1992; Ames, 1995; M. A. Golden & Picci, 2008; Veiga & Veiga, 2013; Pavlik & de Vries, 2014; Pavlík & Špaček, 2015).

There are two formal theoretical models on which most of the partisan and pork-barrel empirical literature is based. 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 maximize 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 (M. A. Golden & Picci, 2008).

This theoretical controversy has thus generated a puzzling array of empirical evidence. The empirical support for both models is thus mixed. Swing voter hypothesis is supported by some U.S based studies like (Wright, 1974; Stein & Bickers, 1994; Stein & Bickers, 1997; Herron & Theodos, 2004). It has also got support from studies based in some other national settings like (Bruhn, 1996; Case, 2001; Dahlberg & Johansson, 2002; Denmark, 2004). 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 increase their winning chances in the next election (Dahlberg & Johansson, 2002; Cadot et al., 2006). 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. (2002). In another study by Crampton (2004) swing districts and districts of cabinet ministers were targeted by the Canadian government in the 1990s job training grants. Similarly, the Cox-McCubbins hypothesis has also

got support from some U.S based studies by Levitt and Snyder (1995); Balla et al. (2002); Ansolabehere et al., (2003) and, Larcinese et al. (2006) and, form some other countries as well like (Diaz-Cayeros et al., 2000; Crisp & Ingall, 2002).

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 (Levitt & Snyder, 1995; (Cox & McCubbins, 1986). Political incentives vary in supporting core voters versus swing voters depending upon their degree of risk averseness and risk-taking. Snyder's study conducted in 1989 found that if the political objective of the incumbent governments is to gain a majority in the next elections they will focus more on safe districts. Cox and McCubbins (1986) also came up with the same results, where on the implicit assumptions that swing voters are more likely to award or punish actual performance in office; risk-loving politicians will divert more resources towards the swing districts. However, the preferences of the risk-averse politicians will be tilted towards safe and core 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. Case (2001) tested above political objectives empirically and found that both core and swing districts were receiving more funds because the president was trying to advance his probability of re-election. This leads us to believe that the underlying political objective of the incumbents is crucial in determining their distribution strategy.

Khemani (2003) tested the core and swing voter hypothesis by dividing redistributive motives into two different political motives. She postulated that if the political objective of the incumbents is to win a simple majority, core districts or groups will be targeted. However, if the government wants to maximize its representation in the national legislature, swing groups will get more transfers from the incumbents. 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 favoritism in resource transfer while contrarily the program conducted through independent agency did not follow this partisan pattern. Additionally, the second program worked as a sort of compensation for states receiving fewer grants from the first program due to their weak or no political ties with the central government. This study markedly shows the importance of studying the partisan background of the actors included in distributive politics and their mutual links.

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. The study postulated that three things can affect vote proportion of a party which is: one is voter participation in the election process, second is the number of potential rivals running for a particular seat and third is the preference of voters for that particular party. Hence parties support their core districts not only to persuade them but to mobilize voters and to tackle political rivals.

The present analysis adds to the literature by testing these predictions empirically. To study political motivations behind the distribution of resources is

important for two reasons: one 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 second 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.

1.3 THEORETICAL MOTIVATION

Distributive politics literature proposes competing formal models on the political motivations about resource distribution. These distant models create different expectations about the distribution of local public goods (i.e. pork) or geographically targetable private goods (“patronage”). Cox and McCubbins (1986) contrasted political incentives to support core, opposition and swing groups in the distribution of public goods. They found risk-averse politicians to be diverting public goods primarily towards their core groups and secondly to swing groups. While opposition support groups are not at all preferred by them. An alternative model comes from Lindbeck and Weibull (1987) and Dixit and Londregan (1996). The model suggests that two groups of voters will be targeted by the vote maximizing redistribution strategy. These groups include swing voters (who are ideologically indifferent between different parties) and the low-income voters. The underlying rationale behind both groups is their higher responsiveness to distributive benefits. Swing groups respond more because they care less about the ideology and more about material benefits. And low-income groups, on the other hand, are a cheap target to attract through public goods.

Both models propose opposite expectations about how distributive benefits will flow to different groups. The Cox-McCubbins model layout that the government's

core support group will get distributive benefits whereas the Lindbeck-Weibull/Dixit-Londregan model predicts that swing voter will get disproportionate benefits. This theoretical controversy has consequently generated a confusing array of findings in the empirical literature. The studies based in the US like Stein and Bickers (1997); Herron and Theodos (2004); Stein and Bickers (1994) and Wright (1974) support the idea proposed by Lindbeck-Weibull/Dixit-Londregan that swing voters disproportionately receive greater material benefits. The thesis is supported by some other studies based on other national settings as well like Bruhn (1996); Case (2001); Dahlberg and Johansson (2002) and Denmark (2004). Similarly, core voter hypothesis of Cox-McCubbins has got support from US studies like Balla et al., (2002); Levitt and Snyder (1995); Ansolabehere et al. (2003), and studies conducted elsewhere (Diaz-Cayeros et al., 2000; Crisp & Ingall, 2002).

The institutional conditions, however, also matter for each of the above thesis to generate any kind of expectations about the allocation of distributive goods. McGillivray (2018) has incorporated the role of the electoral system and the strength of a political party in the framework of the above-competing models. All else equal, the theory generates the expectation that politicians will target resources to marginal districts under a single-member district (SMD) and to party strongholds under proportional representation system⁹ (M. A. Golden & Picci, 2008).

⁹“The electoral rule generates expectations about the types of votes those seeking national public office will cultivate. In an SMD system, winning a legislative seat requires a plurality of votes in an electoral district, so votes in contested districts matter more to politicians than votes in safe districts. If parties are strong, they will, therefore, target marginal districts with local public goods, confirming the logic of the Lindbeck-Weibull/Dixit-Londregan model. In PR systems, all votes matter equally regardless of district location, because every vote contributes to the allocation of legislative seats among parties. Therefore, nationally disciplined parties staffed by risk-averse legislators will target their strongholds to hold core voters and prevent the emergence of new parties, corroborating Cox-McCubbins”

Core and swing voter hypothesis has long been debated in the field of distributive politics. An empirical investigation in this paper is motivated by the model proposed by Dixit and Londregan (1996) and its theoretical extension done by Cox (2009). We will outline both the models briefly to comprehend the notion behind the core versus swing voter hypothesis. Dixit and Londregan's (1996) model is based on two basic assumptions; (i) all voters vote and (ii) only two parties are competing in elections. Dixit and Londregan (1996) assume that two parties L and R are contesting in the election in a single-member district.

$$T_k = (T_{1k}, \dots, \dots, T_{nk}) \quad (1.1)$$

Eq(1.1) is a vector of per capita transfers being announced by each party k. Group j is promised for T_{jk} per capita transfers by party k. There are n groups of voters. Promises are assumed to be credible ex-ante, and they will be honored ex-post if the relevant party wins.

$$\sum_j N_j T_{jk} = B \quad (1.2)$$

Eq(1.2) shows the budget constraint faced by party k. Here N_j stands for the number of voters in group j. To maximize its vote total the Party k chooses T_k ,

$$\sum_j N_j P_{jk}(T_{jL}, T_{jR}) \quad (1.3)$$

Here, given the transfer promises T_{jL} and T_{jR} ; $P_{jk}(T_{jL}, T_{jR})$ is the group j's proportion of members who will vote for party k. (Dixit & Londregan, 1996) assumed $T_{jk} \geq 0$ for all j, k. The transfers party k intends for group j are:

$$t_{jk} = (1 - \theta_{jk})T_{jk} \quad (1.4)$$

Here, $\theta_{jk} \in [0, 1]$ stands for the subsidies that group j will receive from party k's intention to deliver to the same group. Hence if θ_{jk} is relatively small the group is the core support group of the party k. Dixit and Londregan (1995, 1996) define a core group whose preferences are known by party well and whom they can give credible

promises. Moreover, the core is also the group that has strong preferences for a party. Now assuming same income y_j for all voters in j and voter h has preference X_h for R over L , h will vote for L if and only if eq (1.5) holds:

$$U_j[y_j + (1 - \theta_{jL})T_{jL}] > U_j[y_j + (1 - \theta_{jR})T_{jR}] + X_h \quad (1.5)$$

and otherwise, it will vote for R . The utility derived by a member of group j from his or her total income is denoted by $U_j [y_j + (1 - \theta_{jk})T_{jk}]$. Letting Φ_j be the cumulative distribution function of X_h in group j ,

$$P_{jk}(T_{jL}, T_{jR}) = \Phi_j[U_j[y_j + (1 - \theta_{jL})T_{jL}] - U_j[y_j + (1 - \theta_{jR})T_{jR}]] \quad (1.6)$$

Dixit and Londregan model here postulates that in absence of any special relationship of parties with any group (e.g., $\theta_{jL} = \theta_{jR} = 1$ for all j), then the density of the swing voters in each group drives allocations as in the Lindbeck–Weibull model. But if the asymmetries in the ability of the party to deliver benefits become large, the core voter logic of benefiting the groups to which party can most effectively deliver benefits becomes important.

Cox (2009) relaxed assumptions of the above model that all voters vote and there are only two parties in competition. He postulated that mobilization (efforts to increase voter turnout) and coordination (efforts to reduce party splintering) issues are ignored by these assumptions respectively. Therefore parties can only persuade voters to increase their vote totals. According to him, three things matter to affect the probability that h votes L ; one actual participation of h in election (necessary but not sufficient condition that h votes for L); second that L has no competitors from its ranks and three h has preference for L over R . hence transfers can not only persuade voters to prefer L over R but can affect voter turnout and party splintering as well.

Dixit–Londregan model's L party vote proportion from group j now becomes:

$$P_{jL}(tL, tR) = Q_j(tL, tR)S_{jL}(tL, tR)/M_j(tL, tR) \quad (1.7)$$

Here group j 's turnout rate is shown by $Q_j(tL, tR)$, $S_jL(tL, tR)$ show the proportion of voters from group j who prefer L to R , and $M_j(tL, tR)$ is the left-wing party number from which group j 's voters have to choose at the ballot. If the value of $M_j(tL, tR) = 1$, then the party L can have the chance to get all the votes from group j who participate in elections and also prefer L to R (the right-wing alternative). However, it will get only half if $M_j(tL, tR) = 2$. A flexible formulation allows that L vote fraction will decrease as the number of parties increases on the left side. Cox extended former models by proposing that transfers offered by L can not only change preferences of voters for L but also voter participation rate in election and number of competitors L faces on the ballot are affected by these offerings. In former models, only vote choices are influenced by transfers with no effect on voter turn-out. If this is the case then transfers should flow to the groups where the marginal persuasive effect is largest.

Cox finally suggested that if vote share of a party can increase through transfers due to anyone either from persuasion or mobilization or coordination; it imposes followings: 1) if a party thinks that mobilization is more possible than persuasion, it will focus more on core support groups through; 2) if a party fears party splintering and sees less possibility for persuasion, it spends more on core support groups; 3) and final if the party fails to deliver credible promises to swing groups, it will spend more on core support groups. Hence, political parties seem to be supporting their core supports in any of the above situations under the framework proposed by Cox (2009).

Porto and Sanguinetti (2001) developed a model of intergovernmental transfers in developing country context based on theoretical foundations laid down by the above-explained models. Khemani (2003) augmented it further to reflect traditional efficiency and equity considerations in the determination of inter-

government transfers. She added political variables in their framework to check the influence of political motivations in intergovernmental transfers. She postulated that if the objective of the national party is to win a majority it should allocate greater resources to "core support" states rather than to "swing" states. Empirically, this implies that not only should the national party allocate more resources to affiliated states, but within affiliated states particularly target those states where it controls a larger proportion of seats in the national legislature. The reverse is true if the objective is to maximize the number of seats won in the national legislature that is, to maximize partisan representation of the national party. The above political economy framework forms the basis of the empirical specification for this analysis.

1.4 INSTITUTIONAL AND RESOURCE DISTRIBUTION STRUCTURE OF PAKISTAN

A democratic, multi-party federal parliamentary system with a high degree of provincial autonomy and residuary powers characterize Pakistan's legal and political structure. Prime Minister as head of the cabinet holds the executive power in the country. Simple plurality or first past the post (FPTP) single-member constituency electoral rule defines the electoral system of Pakistan (Mahmood, 2007). Before the "Fall of Dhaka," Pakistan was a multiparty democracy, however, since 1971, a two-party system emerged on its own given voters' preferences; the two political parties being the Peoples Party and Muslim League. A PILDAT10 survey in 2008 showed that elections in Pakistan since 1970 have divided voters into four clusters i.e. the PPP cluster, the Muslim League(s) cluster, the Religious Parties Cluster and the Regional Parties cluster. PPP and PMLs both jointly have claimed almost 60% to 70% votes and the rest of the votes are distributed among the other two clusters, independents

and miscellaneous. More recently centrist parties such as PTI(Pakistan Tehrik-e-insaaf) and PMLQ(Pakistan Muslim League Quid-e-Azam) have also gained much popularity in the public. In most of the elections, parties had to form alliances to form a government as a result of failure to gain a simple majority to do so independently. This situation is however different in Punjab where most of the time, over the last three decades, a single party (PML most frequently) has held the majority and, therefore, managed to form a government without allying with any other party.

The existing federal fiscal structure as it is enshrined in the 1973 Constitution divides government into three tiers of functional governments; federal, provincial and local. In addition to regulatory function, all three tiers are charged with the delivery of various services at their respective levels (Cheema et al., 2005). Pakistan has a central type of government where most of the tax and non-tax revenues are collected by the center and then are redistributed vertically and horizontally between the center and other tiers of government. Since, 93% of the resources are generated at the federal level and 7% in the provinces, provincial dependence on the center is huge (Ahmad et al., 2007).

To maintain intergovernmental fiscal relations and to devise an agreeable formula for resource distribution between center and provinces National Finance Commission (NFC) under Article 160 of the constitution has been set up. Jaffery and Sadaqat (2006) have categorized resource transfers into the systematic (formula-based) method and random method (grants etc.). Revenue sharing from federal to provinces under the NFC is the first stage under a systematic based method, provinces to local governments through PFC is the second stage, federal to local is third one and from local to local is the fourth stage. Whereas "development/special grants,

executives discretionary funds and parliamentarian funds", etc are included in random transfers.

A similar mechanism at a sub-national level under Provincial Finance Commission regulates resources transfers from provinces to districts. PFC establishes a "rule-based" fiscal resource transfer system between provinces and local governments. Federal transfers and provincial taxes make the provincial divisible pool which is divided into provincial retained and allocable amounts (transferable to local governments) under the PFC that distributes these resources horizontally following a formula based on population and an index for backwardness. However, in practice, quite often the provinces exercise a high level of discretion in the vertical distribution of these funds. Since, revenue collection mandates of district governments are restricted, their reliance on provincial and ultimately through PFC on federal funds is exceptionally high (Cheema et al., 2005). NFC and PFC both decide the distribution of current expenditures and the amount over and above the current outlays is used for development purposes.

Revenue surplus, reserve funds and borrowing for specific or general-purpose are utilized to meet developmental expenditure/Capital expenditure of Pakistan. Planning commission prepares Pakistan Social Development Plan (PSDP) based on guidelines provided by the Ministry of Finance and in consultation with all provincial governments. While provincial Annual Development Plan (ADPs) are prepared by provincial planning and development departments (P&D) on guidelines provided by the medium-term development framework of their respective governments and concerned chief minister's directives. Approval of both PSDP and ADP goes through several bodies working at the federal level like Priorities Committee (PC) and Appropriations Committee chaired by the Planning Division decides on the priorities

for project selection and sector-wise allocations. Projects competing for limited development funds are prioritized based on fund availability, past performance, and the phasing set in the PC-I. However political and social objectives are given more importance in this prioritization process (Planning Manual, Ministry of Finance; p.09)¹¹. Many other bodies at the federal level like the Annual Plan Coordination Committee (APCC), Executive Committee of the National Economic Council (ECNEC) and National Economic Council (NEC) have a role in the finalization of the federal and provincial ADPs. Finally, cabinet both at provincial and federal levels approve their ADPs. There are also some lower-tier authorities below ECNEC¹² which are empowered to approve development schemes at the provincial level namely Officers in category-I, Departmental Development Sub- Committee (DDSC) and The Provincial Development Working Party (PDWP). Development expenditures, including the PSDP (Pakistan Social Development Program (federal) and ADP (annual development program, provincial) translate development priorities and agendas of government and are used as development interventions in the economy.

Nonetheless, both at federal and provincial level development expenditures are decided outside the ambit of NFC in the case of federal government and PFC in the case of provincial governments. Constitutional determination of federal, provincial and concurrent list is there but development outlay is exclusively the preserve of the federal government and the provincial government in case of ADPs. The imbalance in resource transfer under this head has added momentum to the ever aggravating grievances of the small provinces (Cheema et al., 2005). Hence the process of

¹¹See Planning Manual, Planning Commission of Pakistan(2010)

¹² See Punjab Planning Manuel, Planning and Development Department(2015), Government of Punjab

resource transfer under development projects becomes ambiguous and calls for the in-depth inquiry to trace political motivations directing this mechanism.

Punjab is the largest province of Pakistan and home to more than 50 percent of its population. It is located at the northwestern edge of the geologic Indian plate in South Asia. As demographic destiny becomes democratic destiny belatedly after '71, Punjab dominance in the geographical and political space of Pakistan became more than 50 percent after the split of East Pakistan in 1971. The 18th Amendment to the constitution also led to increase in Punjab dominance in the country due to its population and size. The all four prime ministers and three army chiefs after 2008 were from Punjab. Punjab conservative elites hold the top spots in the PML-N and PTI, the main 2018 federal rivals. So, all paths to power end at it (Murtaza, 2017).

Punjab is the center 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 center. 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). Therefore, what happens politically in Punjab is replicated or to be followed in the rest of the country. Henceforth, the insights from this study may be applied to the other parts of the country to some extent but with caution.

1.5 DATA AND METHODOLOGY

1.5.1 Data Description

This study intends to investigate development funds allocation under the Annual Development Plan (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). More specifically it is aimed to find out political bias if any in the allocation of development expenditures across different districts that can be traced through this budget. Since constituency level data is limited or absent in most of the cases, we are employing district-level data for our analysis. Our dependent variable is the development budget allocated across districts of Punjab over the period 1988 to 2016. However, district-level fiscal data in Pakistan is mostly unavailable which creates a challenge for researchers who are interested in long time analysis of district-level indicators. Due to constraints on data collection and format of the available data in Pakistan, we were unable to find any 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 annual development plans of Punjab (for years 1980-2009) from the planning and development department of Punjab government. Annual development plans from 2010 to 2017 are accessed online from the official website of (P & D) Punjab.

To digitize this database was a big challenge. Outlays in ADP are distributed among different districts of Punjab in scheme-wise order. On average, forty to fifty small amounts were to be added for getting an annual allocation for a sub-sector of a single district. Furthermore, ADP divides outlays into new and old schemes separately. We have used total outlays which include outlays on new schemes and

outlays on ongoing schemes. It is also pertinent to mention here that annual development plans of Punjab distribute development outlays into different sub-sectors like physical infrastructure, social sectors, production sector, housing, and special initiatives, etc. However, district wise allocations for different sectors do not show a continuous pattern. In some years we find funding entry of a district and for other years there is no information. Moreover, in almost every sector we observe that more than 20% of the budget is in block allocation head. These block allocations cannot be traced for district wise share. Therefore, we have selected only those sectors in which distribution pattern seems to be continuous and district shares are easy to compute. These sectors include education and health from the social sector category and water supply & sanitation and road & bridges from the physical infrastructure category. These sectors, however also have a varying percentage of block allocations every year in addition to individual district earmarks.

Hence, our data on district development budget is the one that has been allocated specifically for a district excluding block allocations. Dis-aggregation of development expenditures into social and physical infrastructure sectors has allowed 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 credit claiming in these sectors is easier. We can test his hypothesis with this disaggregation. Outlays on these heads have been measured in million rupees. ADP volumes from 1988 to 2017 have been taken from the planning and development department of the government of Punjab.

Since our primary objective is to establish a link between the political affiliations of a district with the funds it has received over the years, we need information on the political alignment or affiliation of district representatives with the

ruling party in the province. For the construction of this variable, we have collected information on the elected members of the provincial assembly (MPAs) of Punjab in seven general elections held during the studied period. This data provides us party affiliation of the winning candidates from different constituencies, votes received by them, total votes cast in a particular constituency, number of registered voters in that constituency, number of contestants and their party affiliations, voter turnout, etc.

The election commission of Pakistan provides information on the party ticket holders of the ruling party only. However, governments largely make coalitions with many small parties and independent candidates after elections. For accounting this element, we have collected information from the provincial assembly of Punjab which provides all the allied parties and independent candidate's information. Since the 2002 elections, information on alliance has been given on the Punjab assembly site. However, for elections of 1988, 1990, 1993 and 1997 separate detail of allied members have not been mentioned. Consequently, we have considered all those non-party members who were part of any government committee, or cabinet as coalition partners. Moreover, this site's information on the party ticket holders accounts for those members who may have joined the majority party after the elections. For example, the following table shows the party position of different political parties in district Rawalpindi in the general elections from 1988 to 2013.

Affiliation of a district is determined by considering MPAs from the ruling party and the coalition members of the incumbents from that district. Then by dividing the ruling party seats by the total number of seats in the district, we get a proportion of seats of the ruling party in that district. Affiliation or alignment of a district is then constructed by various methods. Simple seat percentage to test the

linear association of this variable with the budget allocation is used in our first specification.

Table 1.1: Party Position in General Elections and Construction of Majority Variable

| Election Year | 1988 | 1990 | 1993 | 1997 | 2002 | 2008 | 2013 |
|----------------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| Provincial | IJI | IJI | PPP/PMLJ | PMLN | PML | PMLN | PMLN |
| PP-1 | IJI | IJI | PMLN | PML(N) | PMLN | PML/PPP | PML(N) |
| PP-2 | PPP | IJI | PMLN | PML(N) | PPP | PMLN | PML(N) |
| PP-3 | PPP | IJI | PMLN | PML(N) | PPP | PPP | PML(N) |
| PP-4 | PPP | IJI | PMLN | PML(N) | PML | PPP | PML(N) |
| PP-5 | PPP | PDA | PPP | PML(N) | PML | PML | PML(N) |
| PP-6 | IJI | IJI | PMLN | PML(N) | PMLN | PMLN | PML(N) |
| PP-7 | PPP | IJI | PPP | PML(N) | PML | PML | PML(N) |
| PP-8 | IND/IJI | IJI | PMLN | PML(N) | PMLN | MMA | PTI |
| PP-9 | IND | IJI | PMLN | PML(N) | PMLN | PMLN | PTI |
| PP-10 | IJI | IJI | PMLN | ML(N) | PMLN | PMLN | PML(N) |
| PP-11 | IJI | IJI | PMLN | PML(N) | PMLN | PML | PTI |
| PP-12 | | | | | PMLN | PPP | PTI |
| PP-13 | | | | | PMLN | PPP | PTI |
| PP-14 | | | | | PMLN | MMA | PML(N) |
| Affiliated | 5 | 10 | 2 | 11 | 3 | 4 | 9 |
| % Affiliated | 45% | 91 % | 18% | 100% | 27% | 36% | 81% |

Note: Affiliation Percentage = (Ruling party or coalition seats/ Total provincial assembly seats of that district)*100. PMLN= Pakistan Muslim League Nawaz, PML= Pakistan Muslim League, PMLJ= Pakistan Muslim League Junejo, IJI=Islami Jamhoori Etihad, PDA=Pakistan Democratic Alliance, IND=Independent Candidate

Then the square of the seat percentage is also used to test for the non-linear relation. In the third step, we have designed our affiliation variable in binary form for the reasons stated above in the theoretical framework. Since following majority rule incumbents need a simple majority to form a government; we have assigned the value "1" if the districts have 50% or above seats affiliated with the government and "0" otherwise. However, this specification fails to capture the degree of representative strength within affiliated districts. Therefore, we have introduced a categorical variable in our next specification. The variable is coded "1" if the district has 50-75%

affiliated seats, "2" if it has more than 75% incumbent affiliated seats and "0" otherwise. The hypothesis we want to test is that if the government wants to maximize its representation it will focus on all affiliated districts. However, if its objective is to maintain simple majority, safe districts with a heavy majority of 75 or above seats will be preferred. We, therefore, expect differential treatment of the incumbents between the heavy majority districts (75% or above seats) and lesser safe districts with a simple majority of less than 75% seats.

Now coming to other votes getting strategies, we used two more political indicators in our model. Potential rivals a candidate face at the ballot and the voter mobilization efforts by the candidate. Cox (2009) has proposed a negative link between the number of ideologically similar candidates at the ballot and votes received by a party. The author suggests that more funds will be awarded to those constituencies whose representatives succeeded in avoiding party splintering. In Pakistan, straightforward ideology differences in terms of economic policy are not observed at large. However, we observe many contestants (party-based and independents) competing for a particular seat. Mostly, a large number of contestants (35 to 40 on average) run for a single seat in elections but the number of potential competitors remains very low (2 to 3 on average). For example, in 1993 elections seventeen candidates were competing against the seat of PP-119 in Lahore. However, 98% of votes from total votes cast were gained by PMLN and PPP and the remaining 15 candidates secured only 2% of the votes. Therefore, we consider a candidate or party as a potential threat to the ruling party candidate only if it has received at least 10% votes in the previous elections. We have computed the vote percentage of each candidate from the total votes cast in that constituency. Then the candidates with at least 10% of votes have been considered as potential rivals. This information has been

gathered from the election commission of Pakistan's official results for seven general elections. The variable potential rivals thus represent the number of candidates in a district receiving at least 10% votes in a particular election. However, for robustness purpose we have used the total number of contestants from a constituency as an additional measure of rivalry.

Cox (2009) also proposed that incumbents may favor candidates who were key players in mobilizing support for them by bringing maximum voter to the ballot. To assess the impact of mobilization 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 also been used to account for any potential omitted variable bias from the model constructed. The controls include the population density measured as persons per square kilometers, total enrollment at schools and the number of government hospitals. These are also used as controls in some specifications to account for district heterogeneity. The source for this data is the Punjab development statistics taken from Punjab Bureau of Statistics.

We have constructed a panel data set where our period is thirty years from 1988 to 2016. The total number of districts until the elections of 1997 in Punjab was 29; however, 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. Therefore, the number of observations now curtail to ($7*29=203$). 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. Another robustness check is done by changing the definition of the potential rival variable. Since, we were interested only in the number of contestants running for a seat we have relaxed the definition of potential rivals variable by taking the straight forward number of contestants running for election against a particular seat and regenerated table 1.6 and 1.7(our main results) for robustness purpose. The results are reported as appendix E and F. The main results are endorsed specifically in infrastructure sectors through this robustness check.

1.5.2 METHODOLOGY

1.5.2.1 Model Specification

We have constructed our model to test predictions of the Cox (2009) and Khemani (2003) model empirically. Therefore, we check whether political parties in government will allocate more resources to the districts with a majority of provincial assembly seats or not. Our main interest is to check and compare the development budget received by district i in time t . We start with a simple specification by using seat percentage of the incumbents in a particular district to test the relationship between the funds allocated to that district with the percentage of seats that district have allied with the government. Based on the theoretical model explained in section 3, we estimate the following specification:

$$Y_{it}^{DEV} = \beta_1 Affiliation_{it} + \beta_2 Potential\ Rivals_{it} + \beta_3 VTO_{it} + X_{it} + \varepsilon_{it} \quad (1.8)$$

Equation (1.8) 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 combined budget are estimated for an in-depth distribution pattern analysis. X_{it} is a vector of control variables that in some specifications include population density, number of schools in a district and number of government hospitals in a district and ε_{it} is a disturbance term. $Affiliation_{it}$ is the treatment variable measured as seat proportion of the ruling party in a district. Here β_1 is the coefficient of interest that establishes a relationship between the resource allocation by the provincial government and political affiliation of districts. $Potential\ Rivals_{it}$ and VTO_{it} "voter turnout" in each district are included to account for the coordination and mobilization effort of the candidate in the elections. The literature on pork-barrel politics proposes three vote-getting strategies. First, offering transfers to voters to persuade them to vote for a particular party (persuasion). The bulk of empirical literature focused on this single strategy only. Cox (2009) stressed the need to include other vote-getting strategies, in particular, offering transfers to voters or groups, to pay them for either (1) their efforts in mobilizing support for the party; or (2) their efforts in coordinating the menu of choices that appears on the ballot. The author further argued that empirically the bulk of distributive benefits should flow to those who are crucial in lowering the number of ideologically similar competitors a party faces on the ballot and to those who are crucial in getting out the vote.

Therefore, the analysis also includes voter turnout and potential rivals to cater to these additional vote-getting strategies in addition to the mere party affiliation of the electoral units with the incumbents. Cox (2009) proposed that threat from core

voters to form a new party or run a rival in elections is never empty. Votes that a party gains from a district are inversely related to the number of rivals running in an election. Coordination on behalf of candidates in their constituencies to reduce chances for rivals to form a party is always awarded by their party.

To capture coordination effort at the district level we add the number of potential competitors as another motivation for parties to support their allies. Hence, we expect $\beta_2 < 0$ because 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 allocate more funds to districts to outcompete their rivals. Cox (2009) has postulated that incumbents may reward candidates for higher mobilization efforts therefore we expect $\beta_3 > 0$.

Extant literature on pork-barrel politics postulates a non-linear relation between the variables of interest. Khemani (2003) has distinguished electoral units with the degree of their representative strength in the parliament. She in her study suggested that the incumbent's strategy of allocation strongly depends firstly upon whether an electoral unit is affiliated with the incumbents or not. And secondly, on various degrees of representation an electoral unit enjoys within affiliated units¹³. Hence the treatment for a constituency by the incumbents may vary depending upon their representation being weak (near 50% cutoff that may swing to either side) to strong (almost 100% seats or around 100% seats). To account for this non-linearity, in specification 2 we have used a squared term of the seat proportion to account for a non-linear relation between the party affiliation and funds earmarked for a district. Eq (1.9) below is estimated for testing non-linear relation;

¹³ Khemani (2003) postulated that incumbent's strategy will further depend upon the political objectives they are pursuing i.e. to maximize representation or to win a simple majority

$$Y_{it}^{DEV} = \beta_1 Affiliation_{it} + \beta_2 Potential\ Rivals_{it} + \beta_3 VTO_{it} + \beta_4 Affiliation_{it}^2 + X_{it} + \varepsilon_{it} \quad (1.9)$$

Following the line of the empirical literature, we have further constructed our affiliation variable in two ways. Firstly, we have defined affiliation as a dummy variable that takes on value "1" if the district has more than 50% of seats allied with the party in government and "0" otherwise.

$$Affiliation_{it} = \begin{cases} 1 & \text{if Majority of MPAs} \in GOV_{it} \\ 0 & \text{otherwise} \end{cases} \quad (1.10)$$

Here in eq (1.10) majority is taken to be 50% or above MPAs belonging to the ruling party. Now we run the following model using specification 3 given in eq (1.11) below:

$$Y_{it}^{DEV} = \beta_1 Affiliation_{it} + \beta_2 Potential\ Rivals_{it} + \beta_3 VTO_{it} + X_{it} + \varepsilon_{it} \quad (1.11)$$

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 as well. The empirical literature has suggested that governments spend more on allied constituencies at the cost of non-allied constituencies. This specification tests the behavior of incumbents towards allied versus non-allied districts. Khemani (2003) has suggested that the conduct of the ruling party also differs widely within the allied constituencies. She proposed that governments support their allied constituencies following their political objectives. If their sole political objective is to win a simple majority, they will focus only on their strongholds i.e. the constituencies they consider to be their core or safe. However, if they want to maximize their representation in parliament, more resources will be diverted to the allied constituencies with a lower degree of the majority or to swing districts. These may be the districts where the party gained a majority with a very low

margin i.e. the constituencies near the 50% benchmark. To test this notion, we have constructed the affiliation variable as a categorical variable in the manner given below in eq(1.12):

$$\begin{aligned}
 Affiliation_{it} = & \{1 \text{ if District has } 50\% \text{ to } 75\% \text{ of MPAs} \in GOV_{it} \\
 & \{2 \text{ if District has above } 75\% \text{ of MPAs} \in GOV_{it} \\
 & \text{\& "0" otherwise} \quad (1.12)
 \end{aligned}$$

Since this variable now has three categories, we convert it into two a categorical variable. Our specification 4 now takes the following form as in eq (1.13) below:

$$\begin{aligned}
 Y_{it}^{DEV} = & \beta_1 Affiliation_{it}(50\% - 75\%) + \beta_2 Affiliation_{it}(\text{Above } 75\%) \\
 & + \beta_3 Potential Rivals_{it} + \beta_4 VTO_{it} + X_{it} + \varepsilon_{it} \quad (1.13)
 \end{aligned}$$

Controlling for political affiliation, we expect that if the objective of political parties is to maximize 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 affiliation indicator should be positive and on affiliation with 50-75% may be insignificant. That is they spend more on the safe districts only. We have estimated all these equations using the sector-wise budget on health, education, roads, and water supply and then combined budget on all these sectors as the dependent variable. For all these regressions, we will change the definition of affiliation variable one by one to identify the partisan influence on allocations.

1.5.2.2 Estimation Technique

Previous literature in this field has largely used the ordinary least squares method and methods similar to it. However, Fraj et al., (2018) have suggested that the

dependent variable can generate the issue of the endogeneity of the regressors. Khemani (2003) in her study of India stated that seat proportion controlled by national ruling party and affiliation indicators may create endogeneity 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 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. Khemani (2003) controlled for this exogenous shock and fear of endogeneity by using state and year fixed effects in her specifications.

An important mention in the case of our data is that the development budget for different schemes is usually allocated for many years. The development projects by and large take time to complete. This fact makes allocation made in a year dependent upon the allocations earmarked in the previous years. Moreover, due to the incremental budgeting process in Pakistan where the old budget is just appropriated for making a new budget, the inclusion of the lagged dependent variable becomes unavoidable. Henceforth, we encounter the problem of lagged dependent variable which can make fixed effects and OLS coefficients biased. Since the development budget which is our dependent variable is present on both sides of the equation; the orthogonality condition between the disturbance term and regressors is not satisfied. Hence, we get biased estimates due to this simultaneity bias. Hausman (1978) can check for the presence of simultaneity and proposes the use of instrumental variable methods. Instrumental variable methods like 2SLS and 3SLS are preferred over OLS

in such cases. However, the choice and availability of valid instruments create a challenge for researchers and reduce the chances of using 2SLS and 3SLS.

The unavailability of district-level indicators to be used as instruments limits our ability to use standard IV and TSLS techniques. Generalized 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. To give more efficient estimates than the TSLS or IV in the presence of heteroscedasticity is yet another benefit of using the GMM technique. Heteroscedasticity is also expected in our panel consisting of 29 districts of Punjab. Thus, we use the dynamic panel GMM method, based on the work of Arellano and Bond (1991) as our ultimate approach to overcome the endogeneity problem.

Simultaneity bias, reverse causality and omitted variable bias, all three issues can be solved through the Dynamic Panel Method (GMM). Dynamic panel data models include lag dependent variables as covariates along with the unobserved effects, fixed or random and, exogenous regressors. GMM-first difference and GMM-system are two variants of dynamic panel GMM estimator. Dynamic panel data literature has more widely used 1st difference GMM developed by Arellano and Bond (1991). This estimator takes the first difference of the equation to remove the individual-specific effects for each period. Then explanatory variables of the 1st difference equation are instrumented using their value in lagged level. System GMM proposed by Blundell and Bond (1998) is an improvement of 1st difference GMM. Blundell and Bond (1998) proved that system GMM is more efficient than the 1st

difference GMM by using Monte Carlo simulations. The 1st difference and level equations for each period are combined in system GMM. The delayed values for at least one period are used to instrument the variables in the 1st difference equation. Similarly, 1st differences are used to instrument variables in the level equation. The GMM is then used to simultaneously estimate the resulting equation system.

This method is effective in controlling specific effects and the potential endogeneity of the explanatory variables. The GMM estimator is effective because it satisfies the validity of the two hypotheses of the exogeneity of the instruments and the non-correlation of the residues. Arellano and Bond proposed a test to check the autocorrelation of the residues. A first-order autocorrelation is introduced due to the construction of the difference equation, therefore, the second order is used to verify the autocorrelation of the residuals. Sargan test is used to verify the valid instrument condition of delayed variables. Recently, Hansen test has replaced the Sargan test because it gives robust results when errors are heteroscedastic. Both Sargan and Hansen tests take no correlation between the disturbances and the over-identified instruments as the null hypothesis.

The GMM in system has advantage over other estimators for the reason stated below: (i) the unobservable specific effects are controlled by the use of this technique; (ii) the estimator is implemented by taking the first difference of the data set which removes the unobservable specific district effects and (iii) the potential endogeneity issue of the regressors and the lagged value of dependent variable is also resolved by using delayed values as instruments. Hansen-J test is applied for over-identifying restrictions as follow up test and the (Arellano & Bond, 1991) test, AR(2), for no autocorrelation in the second-differenced errors.

1.6 RESULTS AND DISCUSSION

We start by presenting some basic descriptive statistics of the data. Table 1.2 below contains all the relevant information on data and variables used in this analysis. The dependent variable in our all specifications is the log of per capita budget allocated to different districts. However, for the descriptive purpose, we have given a summary of the per-capita budget measured in million rupees. The combined budget shows the total amount of per-capita budget allocated for the four sectors of health, education, water supply, and roads & bridges in the studied period. Figure 1.1 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% of the total per capita allocations made from 1988 to 2017 in these four sectors were allocated for the water supply and roads sector.

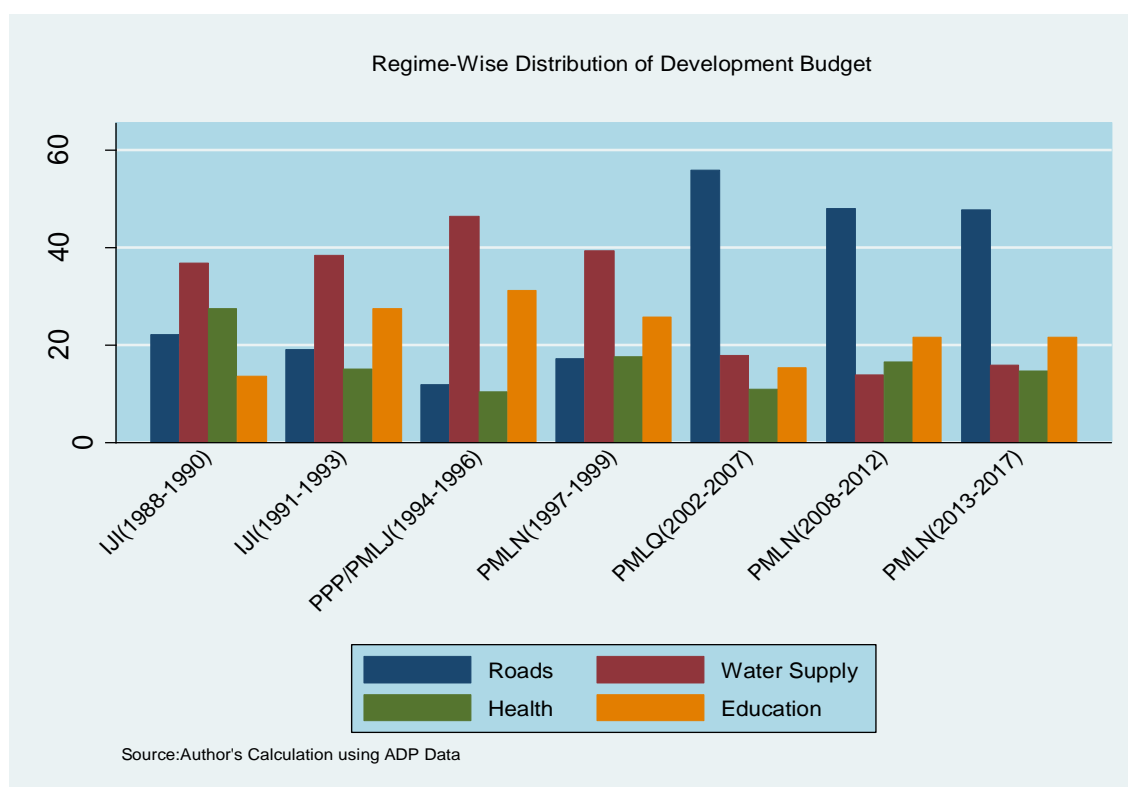
On the other hand, social sectors i.e. education and health received only 37% of the total development budget in these thirty years. Highest allocations are made for the road and bridges which have received almost 34% of the total budget. While water supply received 29%, education 22% and health sector 14% respectively. This pattern of distribution highlights that politician's preferences 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. IJI (Islami Jamhoori Itihad) governments in the first two regimes devoted maximum resources to the water supply and sanitation sector. The coalition government of PMLJ (Pakistan Muslim League Junejo) and PPP formed after the 1993 election also allocated the highest portion of the budget to this sector. PMLQ and PMLN government who held office in the last three elections however diverted almost half (44% approximately) of the development funds towards the road and bridges sector.

Table 1.2: 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 | PND |
| | | between | | 0.47 | |
| | | within | | 2.37 | |
| Health Budget | Per capita development budget in million rupees on the health sector | overall | 0.18 | 0.39 | PND |
| | | between | | 0.19 | |
| | | within | | 0.35 | |
| Education Budget | Per capita development budget in million rupees on the education sector | overall | 0.26 | 0.38 | PND |
| | | between | | 0.08 | |
| | | within | | 0.37 | |
| Water Supply & Sanitation Budget | Per capita development budget in million rupees on water supply & sanitation sector | overall | 0.22 | 0.29 | PND |
| | | between | | 0.09 | |
| | | within | | 0.28 | |
| Roads & Bridges Budget | Per capita development budget in million rupees on roads and bridges sector | overall | 0.56 | 0.86 | PND |
| | | between | | 0.15 | |
| | | 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 | ECP |
| | | between | | 2.63 | |
| | | 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 | ECP |
| | | between | | 167.78 | |
| | | 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 | PA |
| | | between | | 10.94 | |
| | | within | | 27.84 | |
| Density | Number of persons per square kilometer(district population divided by district area) | overall | 0.52 | 0.68 | PBS |
| | | between | | 0.67 | |
| | | within | | 0.18 | |
| Number of Government Hospital | Total count of government hospitals in a particular district | overall | 7.56 | 5.31 | PBS |
| | | between | | 4.96 | |
| | | 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*

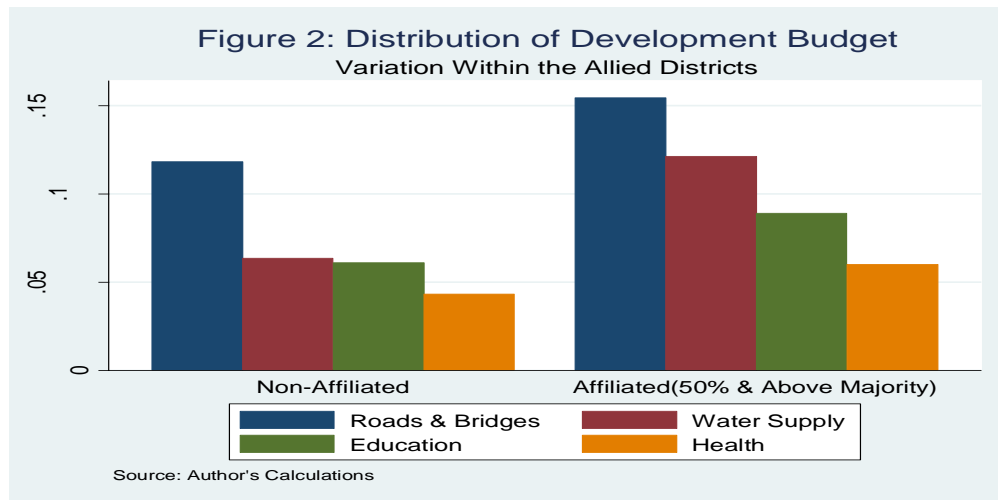
Figure 1.1: Regime Wise Distribution of Development Funds



It is also pertinent to mention here that the education sector was the most neglected sector by all the political parties and governments unanimously. Broadly speaking all the governments in Punjab have prioritized physical infrastructure sectors at the cost of social sectors in these years. An interesting picture this graph shows is that despite being a district government responsibility water supply and sanitation has sucked a large chunk of the provincial government resources from 1988-1999. A possible reason may be that these projects extend targeted benefits to the electorates making credit claiming easier for the politicians. Fig 1.2 shows the development budget allocations between allied and non-allied districts from 1988-2017 in Punjab. We have compared districts that had at least 50% of seats allied with the ruling government with the ones who had less than 50% of seats allied with the ruling party in respective years. Certainly, the average amount of funds for four sectors in

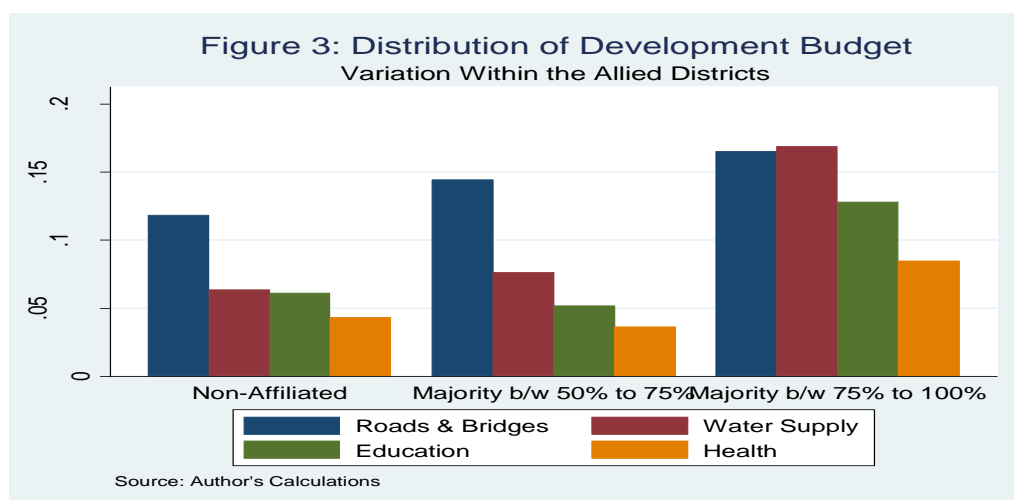
aggregate to electoral districts controlled by MPAs of the ruling party (Rs.294.46 million per capita) were near twice the grants apportioned to districts controlled by the opposition counterparts (Rs.155.89 Million per capita).

Figure 1.2: Distribution of Development Budget (Allied versus Non-Allied Districts)



Further, we may depart from the simple majority rule and can differentiate allied districts on the degree of strength the ruling party enjoys within allied districts to capture variation among allied districts.

Figure 1.3: Partisan Control and Budget Allocations



In figure 1.3 above we see that the partisan effect occurs after 75% seats rather than 50% 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 seem to receive larger funds if they possess 75% and above seats allied with the incumbents. This figure highlights two important facts about development budgeting in Punjab; first, the relation between government affiliation and budget allocation seems to be non-linear and second, the incumbents tend to favor relatively safer districts at the cost of relatively less safe or swing districts.

Table 1.3: Results of the OLS Equation

| Explanatory Variables | Combined Budget | Health Budget | Education Budget | Water Supply Budget | Roads & Bridges Budget |
|---------------------------------|-------------------------|-------------------------|-------------------------|----------------------------|-----------------------------------|
| Affiliation(Seat%age) | -0.0026 (0.0012) | -0.0022 (0.0023) | -0.00455*** (0.0017) | -0.0002 (0.0023) | 0.0005 (0.0022) |
| Potential Rivals | 0.138*** (0.0248) | 0.167*** (0.0282) | 0.104*** (0.0230) | 0.0820*** (0.0286) | 0.224*** (0.0287) |
| Voter Turnout | -0.00177*** (0.0003) | -0.00277*** (0.0003) | -0.00170*** (0.0003) | -0.00143*** (0.0003) | -0.00411*** (0.0003) |
| Number of Schools | 0.0001 (0.0001) | | 0.000122* (0.0001) | | |
| Government Hospitals Density | 0.0099 (0.0201) | 0.0906*** (0.0253) | | | |
| Lag (Combined Budget) | 0.78* (0.043) | | | | |
| Lag(Health Budget) | | 0.655*** (0.0549) | | | |
| Lag(Education Budget) | | | 0.713*** (0.0524) | | |
| Lag(Water Supply Budget) | | | | 0.691*** (0.077) | |
| Lag(Roads & Bridges Budget) | | | | | 0.602*** (0.0469) |
| Constant | 0.2050 (0.2020) | -1.050*** (0.3330) | -0.0586 (0.2540) | -0.2890 (0.281) | -0.2660 (0.215) |
| Observations | 174 | 172 | 174 | 174 | 173 |
| R-squared | 0.8550 | 0.7790 | 0.7480 | 0.5060 | 0.8290 |

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

In short, as expected, pork barrel funds distributed in Punjab were disproportionately allocated to constituencies controlled by the government's MPAs,

thus suggesting, at this most general level, that Punjab governments responded in a collective, partisan way to the parliamentary opportunity to distribute tax-funded benefits for electoral advantage.

Table 1.3 reports the results of ordinary least square estimates of our main equation. This equation includes seat percentage as our main independent variable. Potential rivals and voter turnout are the other two important political variables. Population density, number of hospitals and number of government schools in the electoral districts are introduced as control variables in our estimations. As argued above our model suffer from the problem of endogeneity, we will focus on our estimates from system GMM presented in table 1.4.

As the starting point of our analysis, we have tested a linear relation between seat percentage (for party affiliation) and funds allocation and used the seat percentage of the ruling party in government as our main explanatory variable. Table 1.4 reports the results of the system GMM for our first specification. Here, in five multiple regressions using aggregated data on electoral terms, we can examine the independent effects of incumbent affiliation and partisan control of the seat, on the total amount of development funds distributed to Punjab's electoral districts. Despite controlling for the impact of population density, the number of schools and the number of hospitals, districts with higher seat percentage of incumbents can be seen receiving significantly more funds than a low seat percentage district in the four sectors individually (see table 1.4, column 2-5).

In social sectors 1 standard deviation increase in seat percentage ($sd=29.85$, see table 1.2) increases per-capita budget by 0.23 percentage points [∂ per-capita

budget/ ∂ seat percentage = $0.007 \times 29.85011 \approx 0.23$ ¹⁴. Similarly, 1 standard deviation increase in seat percentage leads to a 0.27 percentage points [∂ per-capita infrastructure budget/ ∂ seat percentage = $0.009 \times 29.85011 \approx 0.27$] higher funding per capita in infrastructure sectors. Table 1.5 reports results using specification 2. Squared term of seat percentage is significant in the roads, education and health sector. Pakistan follows the majority rule of the electoral system.

Table 1.4: System GMM Estimates (Political Affiliation as Continuous Variable)

| Explanatory Variables | Combined Budget | Health Budget | Education Budget | Water Supply Budget | Roads & Bridges Budget |
|-----------------------------|------------------------|----------------------|-------------------------|---------------------|------------------------|
| Affiliation(Seat %age) | 0.000367 (0.003) | 0.00772* (0.0041) | 0.00711** (0.0029) | 0.00929* (0.005) | 0.00894*** (0.0032) |
| Potential Rivals | -0.0566** (0.0257) | -0.173* (0.091) | -0.0241 (0.0242) | 0.0392 (0.0462) | 0.106*** (0.0326) |
| Voter Turnout | 0.00168*** (0.0005) | 0.00304 (0.0021) | 0.00129*** (0.00039) | 0.00116 (0.0009) | -0.00109* (0.0006) |
| Lag(Combined Budget) | 0.231** (0.107) | | | | |
| Lag(Health Budget) | | 0.852*** (0.132) | | | |
| Lag(Education Budget) | | | 0.155** (0.0712) | | |
| Lag(Water Supply Budget) | | | | 0.19*** (0.048) | |
| Lag(Roads & Bridges Budget) | | | | | 0.258*** (0.0405) |
| <i>Observations</i> | 174 | 172 | 174 | 174 | 173 |
| <i>Number of ID</i> | 29 | 29 | 29 | 29 | 29 |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes |
| <i>AR2/prob.</i> | -0.752/0.12 | 1.063/0.28 | -0.4250.67 | -0.739/0.97 | 0.19/0.5 |
| <i>AR1/prob.</i> | -1.873/0.06 | -3.65/0.00 | -3.198/0.00 | -2.855/0.00 | -3.491/0.00 |
| <i>Hansen/prob.</i> | 8.53/0.35 | 15.61/0.11 | 15.46/0.35 | 20.14/0.101 | 18.29/0.19 |

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

¹⁴ Measured as (Coefficient of 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

Table 1.5: Testing Non-linear Relation between Affiliation and Development Budget

| Explanatory Variables | Combined Budget | Health Budget | Education Budget | Water Supply Budget | Roads & Bridges Budget |
|----------------------------------|-------------------------|--------------------------|-------------------------|----------------------------|-----------------------------------|
| Affiliation(Seat %age) | 0.00962* (0.0047) | 0.0299** (0.0118) | -0.00672 (0.0066) | 0.00199 (0.0098) | 0.0281*** (0.0062) |
| Affiliation(Square of Seat %age) | -4.59E-05 (3.85E-05) | -0.000290** (0.00011) | 0.000126* (6.81E-05) | 3.58E-05 (6.15E-05) | -0.00019*** (6.39E-05) |
| Potential Rivals | -0.00826 (0.0262) | -0.0763 (0.132) | -0.0456 (0.0288) | 0.0375 (0.0485) | 0.0700** (0.0289) |
| Voter Turnout | 0.00157** (0.00063) | 0.00273 (0.00218) | 0.00192*** (0.00069) | 0.00198* (0.001) | -0.000808 (0.00062) |
| Lag(Total Budget) | 0.563*** (0.0968) | | | | |
| Lag(Health Budget) | | 0.791*** (0.163) | | | |
| Lag(Education Budget) | | | 0.165** (0.0792) | | |
| Lag(Water Supply Budget) | | | | 0.234*** (0.055) | |
| Lag(Roads & Bridges Budget) | | | | | 0.281*** (0.0362) |
| <i>Observations</i> | 174 | 172 | 174 | 174 | 173 |
| <i>Number of ID</i> | 29 | 29 | 29 | 29 | 29 |
| <i>p(AR2)</i> | -0.28/0.11 | 0.83/0.4 | -0.64/0.5 | -0.580.5 | -0.4340.6 |
| <i>p (AR1)</i> | -2.3/0.00 | -3.26/0.00 | -3.58/0.00 | -2.560.00 | -3.29/0.00 |
| <i>p(Hansen)</i> | 8.63/0.4 | 13.41/0.15 | 13.35/0.4 | 17.82/0.16 | 16.6/0.22 |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Controls</i> | 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.

Table 1.6: Results for Political Affiliation Measured as Binary Variable

| Explanatory Variables | Combined Budget | Health Budget | Education Budget | Water Supply Budget | Roads & Bridges Budget |
|-----------------------------|------------------------|-----------------------|------------------------|------------------------|-------------------------|
| Affiliation (Above 50%) | 0.433*** (0.087) | -0.767* (0.38) | 0.309* (0.163) | 0.32 (0.221) | 0.768*** (0.133) |
| Potential Rivals | 0.109*** (0.038) | -0.115 (0.265) | -0.0273 (0.0185) | 0.0161 (0.0286) | 0.128*** (0.0331) |
| Voter Turnout | -0.000576 (0.00046) | 0.00675** (0.0027) | 0.000925** (0.0004) | -0.000102 (0.00074) | -0.00123** (0.00053) |
| Lag(Total Budget) | 0.174* (0.087) | | | | |
| Lag(Health Budget) | | 0.302** (0.138) | | | |
| Lag(Education Budget) | | | 0.176** (0.0761) | | |
| Lag(Water Supply Budget) | | | | 0.285*** (0.063) | |
| Lag(Roads & Bridges Budget) | | | | | 0.180*** (0.031) |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Observations</i> | 174 | 172 | 174 | 174 | 173 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 | 29 |
| <i>p(AR2)</i> | -0.15/0.42 | -0.34/0.7 | -0.71/0.9 | 0.35/0.73 | -1.16/0.25 |
| <i>p(AR1)</i> | -1.92/0.05 | -1.89/0.05 | -3.27/0.00 | -2.67/0.00 | -3.30/0.00 |
| <i>p(Hansen)</i> | 13.88/0.52 | 8.11/0.15 | 17.3/0.14 | 12.62/0.4 | 11.68/0.47 |
| <i>Year Dummies</i> | 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

A simple majority is required for making a government. The government may not bother about a district where its seat share is increased from 30-40%. But an increase in the majority from 49% to 51% will be more important. Hence, 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 1.6. 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%¹⁵ if a district gets a 50% or above majority aligned with the ruling government. Similarly, 36% higher funding is expected in the education sector and 115% higher funds in the roads sector if the district is allied with the incumbents. Lesser allocations in the health sector may indicate that resources are diverted from health to other sectors when the district has a majority in the government.

Next, we have run specification 4 to determine variation if any among the allied districts. Results are reported in table 1.7 for this specification. If we consider the overall budget only, we see the coefficients of the two slabs are positive and significant. The magnitude of 50-75% of seat slab is higher than the 75-100% seat slab. In a disaggregated analysis, we observe that in the roads sector, the districts are expected to get $[\text{Exp}(0.783)=1.18]$ 118% higher funds as compared to other districts when they have 50% to 75% affiliated majority. However, the expected rise in funds goes to $[\text{Exp}(0.916)=2.499]$ 149% approximately for 75% and above majority districts. This seems to show the incumbent's higher preference for the safe or core districts. However, the Wald test shows that both of the coefficients are not statistically different in the roads, water supply, health and, in the combined budget. In the education sector, the story is more interesting. Incumbents draw resources from the education sector if their majority is not safe and allocate more when they get a landslide victory in a district.

¹⁵ This percentage is calculated by taking the exponential of above 50% dummy coefficient. $\text{Exponential}(0.43)=1.54$ and interpreted as 54% increase independent variable caused by dummy variable taking a value of "1" as compared to its value of "0" (See Introduction to SAS.ULCA: Statistical Consulting group)

Table 1.7: 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*** (0.121) | -0.401 (0.292) | -0.140* (0.082) | 0.945*** (0.303) | 0.783*** (0.193) |
| Affiliation (Majority between 75-100%) | 0.431** (0.167) | -0.174 (0.395) | 0.211** (0.0785) | 1.119*** (0.365) | 0.916*** (0.148) |
| Potential Rivals | -0.0197 (0.037) | -0.316** (0.134) | -0.0148 (0.0212) | 0.161 (0.124) | 0.135* (0.0787) |
| Voter Turnout | 0.000577 (0.00076) | 0.00401* (0.0023) | 0.000178 (0.00054) | -0.00389 (0.0036) | -0.0022** (0.0009) |
| Lag(Combined Budget) | 0.365*** (0.0702) | | | | |
| Lag(Health Budget) | | 0.522*** (0.0712) | | | |
| Lag(Education Budget) | | | 0.326** (0.15) | | |
| Lag(Water Supply Budget) | | | | 0.295*** (0.0751) | |
| Lag(Roads & Bridges Budget) | | | | | 0.184** (0.0831) |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Observations</i> | 174 | 172 | 174 | 174 | 173 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 | 29 |
| <i>p(AR2)</i> | -0.16/0.37 | 0.71/0.41 | 0.55/0.67 | 0.59/0.55 | -0.99/0.32 |
| <i>p(AR1)</i> | -1.98/0.04 | -3.71/0.00 | -3.31/0.00 | -2.67/0.00 | -3.27/0.00 |
| <i>p(Hansen)</i> | 11.66/0.46 | 13.5/0.26 | 19.76/0.39 | 13.92/0.18 | 8.96/0.5 |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes | Yes |
| Wald Test/Prob. | 2.53/0.122 | 0.76/0.39 | 18.60/0.002 | 0.61/0.44 | 0.32/0.57 |

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. Wald test is applied to check the equality of coefficients of affiliation variables to test whether the coefficients on two majority levels are statistically different or not.

The coefficients are statistical different only in this sector as the Wald test given in tale 1.7 shows. Hence the political objective of the incumbents in Punjab province seems to be maximizing the overall assembly representation where they target all districts with 50 % and above majority to keep them safe in future. The health sector, however, shows no signs of partisan bias in our data.

The empirical studies conducted to date yield mixed results on how many swings, as opposed to core voters, are targeted. Empirical studies support the thesis that material benefits are disproportionately directed toward swing voters (Stein & Bickers, 1994; Denmark, 2000; ; Case, 2001; Dahlberg & Johansson, 2002; Bickers & Stein, 2004; Herron & Theodos, 2004; Stokes, 2009; McGillivray, 2018). However, other studies support the notion that material benefits are disproportionately directed toward core voters (Levitt & Snyder, 1995; Balla et al., 2002; Diaz-Cayeros et al., 2000; Bickers & Stein, 2000; Ansolabehere et al., 2003; Hiskey & Seligson, 2003; Calvo & Murillo, 2004). Most of these studies, too, examine the allocation of benefits across electoral districts.

Potential rivals and voter turnout turned out to be consistent in all of our specifications. In line with the Cox theory, we have captured coordination efforts through potential rivals. A small number of rivals at the ballot indicate a candidate's greater effort to keep competition low. 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 (water supply & sanitation and roads & bridges). 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. As we have explained in section 1.3 above that the projects competing for limited development funds are prioritized based on fund availability, past performance, and the phasing set in the PC-I in Pakistan. However political and social objectives are given more importance in this prioritization process (Planning Manual, Ministry of

Finance; p. 09). Similarly, (Spáč, 2016) argues that when elected political representatives are unable to provide enough funding to all regions and sectors in their constituencies, they have to decide where to provide funds and where to reduce or cut expenses. Furthermore, since geographically targetable, i.e., "pork-barrel" projects are more attractive in majoritarian system; politicians spend more in these sectors to avoid tough competition at the ballot.

The third vote maximizing strategy i.e. mobilization effort is measured through voter turnout at the district level. Governments may divert more resources to the districts where candidates were successful in mobilizing more voters. Voter turnout has a positive impact on budget allocations in social sectors while negative in infrastructure sectors. The important question arises here that why the impact of voter turnout differs from sector to sector. Several reasons may be proposed for this finding. First, the voter turnout is particularly high only in urbanized and developed districts of Punjab like Lahore, Faisalabad, and Rawalpindi where infrastructure facilities are already sufficiently high. And the districts like DGK, Rajanpur, etc which not only have lower voter turnout but also lag in infrastructure. Consequently, they have a higher demand for infrastructure facilities as compared to the developed districts. This fact is likely to exert the differential impact of voter turnout on social and infrastructure sectors. Second, urbanized districts with higher voter turnout possess higher literacy rates as well. It might be that incumbents find it difficult to motivate learned and mobilized voters through the provision of roads or sanitation and consequently spend more on social sectors.

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. Estimations using politician characteristics are also made for robustness purpose. The results of these specifications are given in appendices (A – D & G). Our main findings remained robust to all these alternative specifications. Furthermore, we have also changed the definition of potential rival variable and straightforward number of the rivals per constituent seats is accounted to capture the competition faced by the ruling party candidate at the ballot. The results for this specification are reported in appendix E and F. Our main findings remained consistent using this specification as well specifically for infrastructure sectors.

Comparing sector-wise results, we find that resources are more heavily allocated in infrastructure sectors than in the social sectors. Several explanations may be proposed to explain this phenomenon. (i) The physical infrastructure sectors that embody targeted and visible benefits are prioritized 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). By definition, distributive policies are those that promote projects that would concentrate benefits to specific geographic locations while costs are spread to all regions, typically through taxation (Shepsle & Weingast, 1981; Del Rossi, 1995). 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. Keefer (2007) has proposed that broad public policies are not promised by the politicians in Pakistan. Because their promise credibility is largely based upon patron-client ties supported through targeted transfers to the voters. Similarly, Easterly (2003) proposed a political economy hypothesis for poor service delivery and poor performance in education and health sectors in Pakistan. A World Bank report in 2002 suggested that in Pakistan people had almost 25% higher access to potable water as compared to the countries with similar development and demographic indicators. The targeted benefits attached to the potable water with immediate accessibility and visibility to the electorates was the potential cause for this edge of Pakistan over the other comparable countries. On the other hand, Pakistan was 20% below the expectation in literacy rate as compared to other countries. The report claimed that the informational demands for education and health are very high being transaction-intensive and depend on the behaviors of providers which cannot be monitored easily. On the other hand, there are provisions like roads that are not only quicker to implement and verify but also taking credit by politicians is easier. Hence, physical infrastructure projects like roads, water supply & sanitation are preferred by policymakers rather than education and health sectors.

(ii) A larger scope for corruption by the political representatives in the infrastructure projects may be another reason for greater interest in such projects. Lehnly et al. (2018) has proposed that the grass-root monitoring in government's

private goods provisions is more effective as compared to the public goods. Therefore, the individuals can better judge the delivery or theft in the government provisions of the goods such as subsidized food, education or medical care and risk of corruption is minimized as a result. However, in the infrastructure projects not only the monitoring incentives at individual level are weak but the political incentives for corruption due to the size of projects are reasonably high.

(iii) Large scale transfers are used for the distribution of distributive benefits under Proportional Representation (PR). 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 such as roads is more suspected in Majoritarian systems like Pakistan. The results of this study are also endorsed by macro-level literature which argues that proportional representation and majoritarian electoral systems offer different incentives to parties regarding redistribution.

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 the higher number of co-partisans were receiving more funding which was aimed at provincial economic development (1988-2001, two funding programs). 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. Spáč (2016) claimed that if the actual decision making is strictly defined by some economic formula, the opportunities for allocation of grants based on partisan ties are reduced or even eliminated (Boex & Martinez-Vazquez, 2005). As such, for politically motivated pork-barrel politics, the decisions on allocation have to be at

least partly discretionary, i.e. the bodies responsible for public spending are allowed to make the final decisions according to their own will. Since discretionary power in development budget allocation decisions in Pakistan is higher, the political affiliation of a district may affect budgetary earmarks significantly.

1.7 CONCLUDING REMARKS

The provision of public goods and services is a key function of governments all over the world. 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. The political institutions and the political considerations both motivate the resource distribution tactics. An extensive theoretical literature on distributive politics has argued that electoral incentives of the incumbents play an important role in distorting the fair distribution of these resources. The underlying institutional, political and electoral systems are crucial for determining the extent and magnitude of these distortions. The absence of strict economic formulas and institutional rules in resource distribution structure magnifies the issue to a greater degree. 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 which distributes development schemes across districts. The availability of the district level budget data was the biggest challenge for conducting this study. Annual development plans have been used as a proxy measure for the development of budget distribution by the provincial government across districts.

Using the system GMM estimation technique, we have found significant resource diversion towards co-partisans at the district level. The funds are diverted more heavily if the district is allied with the incumbents. The incumbents also use development funds to cater to higher competition at the ballot by larger spending in the infrastructure sectors. However, they spend higher in the education sector in the districts with higher voter turnout (showing higher mobilization of the voters). 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 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 in the future.

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. How campaigning financing laws affect not only electoral performance but also public funds allocation. 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 more directly test whether increases in transfers are larger to districts where the incumbent's re-election prospects are poor. Further research could also focus on other economic policy instruments and other provinces.

Essay 2

Political Budget Cycle: A Sub-National Evidence from Pakistan

2.1 INTRODUCTION

Effective and equitable distribution of public resources is the key responsibility of the elected governments. Macroeconomic and fiscal policies are basic tools at the disposal of incumbents to deliver public provisions. However, the perception that incumbent may manipulate the timing of these policies to enhance their probability of re-election has become a universal phenomenon known as the political budget cycles (Shi & Svensson, 2006). Political budget cycles (PBC) is defined as a cycle in some component of budget induced by timing of the elections. More specifically, it refers to an increase in government spending or a decrease in taxes as elections draw near. According to initial theoretical contributions, electoral manipulation of the fiscal policy before elections can be effective in the context of irrational voters (Nordhaus, 1975). However, theoretically, it seems unsound to assume voters to be irrational. Later on, it was shown that politically-induced cycles may be consistent with rational behavior, given provisions such as asymmetric information between voters and politicians, rational ignorance among voters and uncertainty over the outcome of an election (K. S. Rogoff, 1987; K. Rogoff & Sibert, 1988; A. F. Alesina & Sachs, 1986; A. Alesina & Sachs, 1988; Brender & Drazen, 2005; Shi & Svensson, 2006; Alt & Lassen, 2006). Moreover, these cycles may also work under rationality assumption if such cycles can serve as a signal for the incumbent government's competence (Cukierman & Meltzer, 1986; K. S. Rogoff, 1987; K. Rogoff & Sibert, 1988)

As distortions in fiscal policy for purely electoral reasons may have significant economic costs, it becomes important to identify these distortions. Moreover,

understanding the conditions under which such manipulation is most likely to occur is also crucial. Recent literature which aims at the identification of PBCs, emphasize that the politicians shift government expenditures towards the most visible projects with short term benefits at the cost of less visible projects with long term benefits (Drazen & Eslava, 2010). However, this literature observed a decline in capital expenditures (e.g. public investment) and a rise in current expenditures (e.g. wages and subsidies) near elections (Vergne, 2009; Katsimi & Sarantides, 2012). Public capital expenditures are preferred by politicians in developing countries for re-election purposes. The reason is that these expenditures are largely discretionary and flexible. Moreover, the geographical targeting of specific locations and constituencies is easier through such projects (Ferejohn, 1974; Bates, 1983; Tanzi & Davoodi, 1998; Schuknecht, 2000; Bardhan, 2002; Keefer & Knack, 2002; Khemani, 2004;). These politically motivated allocations on public investment create significant economic costs. Hence identification of political manipulation in this sector is important to formulate better policies for the eradication of such practices.

Public capital expenditures at the provincial level in Pakistan provide an intriguing scenario to test the existence of PBC for two reasons. Firstly, previous empirical literature largely consists of mature democracies with regular election cycles over an extended period. Developing countries, on the other hand, are nascent democracies. Elections are a new and irregular phenomenon in such countries. Hence the effect of elections described in a cross-section of countries cannot be interpreted for a country like Pakistan where democracy is still struggling to find roots.

Studies such as by Block (2002); Shi and Svensson (2006) and Schuknecht (1996, 2000) point to weak institutional structures in developing countries that allow for greater political discretion over policy instruments. A recent wave of literature in

the PBC literature has established that less established and inexperienced democracies are more likely to experience PBCs (Cazals & Mandon, 2015). Therefore, Pakistan is more susceptible to these cycles being an immature democracy. Secondly, most of the existing literature on political budget cycles in developing countries has only studied aggregate fiscal variables with few exceptions. This paper probes deeper into the choice of policy instruments around election times by using a detailed breakdown for the categories of capital spending available for the districts in the Punjab province. Khemani (2004)¹⁶ noted that the inclusion of public services is unusual in this literature. However, it is important in the context of a developing country where public spending is a poor determinant of actual service delivery (Ablo & Reinikka, 1998). This motivates us to test the effect of elections on the public service delivery of capital goods, specifically schools, hospitals, road construction and water supply and sanitation projects.

Moreover, the bulk of the empirical literature in this field has studied aggregate data at the country level or cross country level. However, it is empirically inconvenient to control for the heterogeneity due to different demographic, economic, institutional and political backgrounds in the cross country analysis. By contrast, subnational governments are embedded in the similar political environments, seldom are subject to concerns about endogenous election dates, often are large in number, and can, with good time-series data, provide an attractive testing ground for theories of political budget cycles, even at the expense of generalizability to different political regimes or settings.

The current study is designed to determine PBC in the public capital expenditures of 29 districts granted by the provincial government of Pakistan over the

¹⁶ Khemani (2004) used data on roads for this context; however, she stressed the need to include other public service delivery indicators in this framework.

period 2000-2017. Our study period covers three general elections held in the last three decades. The selection of this period is encouraged by the fact that all three elections in this period were held at a pre-determined time. Before that, the governments were unable to complete tenures due to dissolving of assembly by the President because of political turmoil in the country. Electoral planning of expenditures is more certain and easy if the election dates are known well before the election dates. Moreover, this time selection has helped us to avoid the issue of endogenous elections. The study has employed data on the Annual Development Plans (ADP) in the Punjab province. ADP divides the development budget across different districts of the province. Development budget is disaggregated further into education, health, water supply and sanitation, roads and bridges sectors allocated for different districts of Punjab for an in-depth inquiry of political preferences. Our primary objective is to test the presence of the political budget cycle in Punjab, the largest province in Pakistan.

Klomp and De Haan (2013) have suggested that the occurrence of a political budget cycle is conditional on many country indicators. Therefore, we have used different political controls like democratic development, incumbents' party age, the strength of the ruling party in district and level of fiscal decentralization showing provincial autonomy on resource use. We have also used district population density, number of schools and hospitals to control for the district heterogeneity. The empirical literature on the existence of the political budget cycles brought about mixed evidence (Alt & Chrystal, 1983)¹⁷. We have shown that despite disagreement within the literature, the available evidence suggests the existence of an electoral cycle in the provincial government development spending. We have presented

¹⁷ Alt and Chrystal (1983) in their review concluded that "no one could read the political business literature without being struck by the lack of supporting evidence."

findings, concerning the development budget of 29 districts of the Punjab province, over the period 2000-2017 for the first time. The cycle is not only more systematic but also it goes beyond the election year. Moreover, the extent of the cycle varies from sector to sector. Overall spending is significantly low in the post-election year which is quite consistent with the existing literature. In the water supply & sanitation sector, the cycle is confined to election year only, in the education sector it goes up to one year before elections. In health, it appears only in the period two years before elections. In the roads and bridges sector, the cycle appears in the mid of the term. The evidence for the electoral cycle in the health sector, however, is not very robust. Some studies suggest that the government can use expenditure shifting to signal preference alignment with voters (Drazen & Eslava, 2010) or that the government in election years shifts public expenditures toward more visible types of expenditures with short-term benefits for voters, at the expense of less visible types of spending with longer-term benefits, which should cause an increase in public wages and subsidies near elections, at the expense of capital spending (Vergne, 2009; Katsimi & Sarantides, 2012). The health sector being less visible seems to be less attractive to the incumbents in our case. Water supply and sanitation projects, on the other hand, involve short term and visible benefits; therefore, they are targeted in the election year only.

In addition to opportunistic political business and budget cycles, there is also a substantial literature on partisan cycles in policies motivated by Hibbs (1977). The political actions are often influenced by partisan preferences, such as between left and right-wing parties over unemployment and inflation. In developing economies however well-defined ideological divisions between political parties about economic policies are not apparent. Therefore, the existing literature on the developing

economies has not included partisan political influences in analyzing the political cycles. In Punjab, the ruling parties in the studied period were Pakistan Muslim League Nawaz and Pakistan Muslim League Quaid which have no clear cut ideological differences on economic policies. Hence our ideology variable only captures the party impact. We have found a strong negative impact of the party on the budget in the health, education, and roads. The water supply & sanitation sector, however, remained unaffected from party orientation. Spending in this sector due to its targeted and visible benefits seems to be used to meet the re-election incentive of the incumbents.

Our empirical evidence for the public investment cycles is suggestive of the strategic placement of investment goods at election times. Our findings on public investment cycles resonate with other evidence in the literature. Ferejohn (1974); Tanzi and Davoodi (1998); Keefer and Knack (2002) and Khemani (2004), amongst others, have argued that public investment projects are often used for political purposes because they are largely discretionary and easy to target to specific constituencies and locations. (Schuknecht, 2000) finds that increasing public investment spending is the preferred policy of a cross-section of developing country governments seeking re-election. Bates (1988) and Krueger and Turan (1993) provided anecdotal evidence of such cycles in Zambia and Turkey, respectively. The authors point to the flexibility of public investment spending to fit political objectives due to the potential for targeting specific geographic areas, sectors, or groups, as the explanation for these cycles. Although the specific literature on political business and budget cycles has emphasized the use of those policy instruments at election times that can quickly deliver economic benefits to large numbers of voters (Tufte, 1978; Schuknecht, 2000).

The rest of the essay is organized as follows; section 2.2 reviews relevant literature on PBC. Theoretical motivation has been explained in section 2.3. Section 2.4 covers data specifications and data sources. The methodology has been discussed in section 2.5 of this essay and finally, section 2.6 concludes this essay.

2.2 LITERATURE REVIEW

The literature on public choice theory presents an in-depth inquiry on the use of public funds in electoral periods for political purposes. This line of works of literature is based on Political Business Cycles (PBC) theories. To explain the opportunistic behavior of politicians to use public spending periodically for personal gains is the main concern of the PBC theories. The first phase of empirical literature was developed by the influential work of Nordhaus (1975), and Lindbeck (1976) on "opportunistic" cycles and by Hibbs (1977) on "partisan" cycles.

A "pre-rational expectations" model of the economy based upon an exploitable "Phillips curve" guides these theories. Nordhaus model predicts that due to the opportunistic politicians' economies experience high growth, low unemployment and high inflation in pre-electoral periods and a recession in post-election time. This behavior is not linked to the political orientation of the incumbent government. On the other hand, Hibbs proposed a partisan model of the business cycle. He claimed that the inflation/unemployment combination opted by the different political parties has systematic and permanent differences thus suggesting a partisan cycle.

In the mid-80s a second branch of the PBC was proposed which was based on a game-theoretic approach. In this wave of literature, rational opportunistic models were proposed by Cukierman and Meltzer (1986); K. S. Rogoff (1987); K. Rogoff and Sibert (1988) and Persson and Tabellini (1990). Also, a rational partisan model was

developed by (A. Alesina, 1987). These models have two important differences from the first generation models which are a result of the assumption of rationality taken by these models. Firstly, the rationality of economic agents makes the influence of the monetary policy less direct and predictable on the real economic activity. Secondly, it becomes difficult to systematically fool rational voters in equilibrium. Both of these differences create quite different implications of the second generation models from their predecessors. Rationality assumption makes it less likely to have regular political cycles. However, the chances for these cycles are not eliminated even under this assumption.

The initial empirical literature largely studied fiscal aggregates like aggregate output and unemployment for the existence of the PBCs. Recently the focus has shifted towards the use of fiscal instruments such as government spending, debt and tax levels to analyze the political action outcomes.

Tufte (1978) pioneered testing the political budget cycle for the United States empirically. Later on, the empirical literature on PBC emerged from both the developed and developing world. However, it was widely believed that PBCs are stronger in developing countries than in the developed ones. Recent literature has found that PBCs are present in both developed and less developed countries at all levels of economic and democratic development (Drazen, 2001).

Shi and Svensson (2006) compared developed and developing countries for the period 1975-95 in a large panel of countries. They found a significant rise in the government deficit in an election year in the whole sample. However, the developing countries show a stronger electoral cycle as compared to the developed countries in their sample. Persson and Tabellini (2003) have argued that developed countries also exhibit strong PBCs. They found this evidence from a sample of sixty democracies

with competitive elections and democratic institutions for the period 1960-1998. The political budget cycle was present in public revenues however it was absent in expenditures, transfers, and overall budget balance. Their finding was consistent across countries and across different political systems.

As far as the factors fusing the PBCs are concerned, Brender and Drazen (2005) have argued that PBCs are more prevalent in new democracies than weak or old democracies. As the country gets matured in democracy, the extent of PBCs is reduced significantly. The country in a transition phase from non-democracy to democracy is more vulnerable to electoral cycles. Being a new democracy plays an important role in PBC's existence in an economy. Moreover, differences in the electoral and political systems across countries are also key determinants of a PBC. Akhmedov and Zhuravskaya (2004) found that regional media's freedom and transparency of regional governments are crucial factors involved in determining the magnitude of the PBC. Similarly, Alt and Lassen (2006) found higher fiscal transparency a key factor in lowering the magnitude of the electoral cycle.

Motivated by these developments in the empirical literature on PBC, the interest of researchers has shifted towards the developing countries most recently. The notion behind this surge in interest is that economic and political reforms in the developing world should be at odds with each other. Developing countries lack enough empirical literature on electoral cycles because most of the economies have been democratized only recently. Early empirical evidence from the developing world is related to the first theoretical papers on the topic where fiscal aggregates have been studied largely to find PBCs. For example, Ben-Porath (1975) synchronized parliamentary elections with the development of major macroeconomic aggregates in Israel. Similarly, Ames (1987) found a 6.3 percent surge in public expenditures of 17

Latin American economies between 1947 and 1982 in the pre-electoral period and a decline of 7.6 percent in the post-electoral year. The government spending cycle was also found in Mexico in the period 1965-1985 by Buffie and Krause (1989) and Whitehead (1990).

However, in a study by Agénor (1996) no electoral cycle was found in the three most established economies of Latin American economies such as Costa Rica, Colombia, and Venezuela during the period 1970-1990. A similar absence of electoral cycle in fiscal balance was also established by Remmer (1993) in his study of six countries in period 1982 and 1991. The most comprehensive study on developing economies came from Schuknecht (2000) for the period 1970-1992. The fiscal balance was found to be behaving following the electoral cycle theory in the study.

The empirical literature has now shifted towards finding the PBCs at the sub-national level as well. Kraemer (1997) conducted a study at the sub-national level in Mexico and found significant evidence for electoral cycles. He found that the ruling party was using various public expenditures such as social spending and intergovernmental transfers to advance its electoral fortune in gubernatorial races. Similarly, Khemani (2004) also attempted to find the electoral cycle in India at the sub-national level. She claimed that specific interest groups were favored by incumbents before elections by manipulating fiscal policies. These interest groups receive targeted benefits in exchange for their support in electoral campaigns. Fiscal instruments are manipulated in Indian states around elections in such a manner that the overall fiscal deficit remains unchanged. Incumbents reduce the tax collection from specific producer groups and increase public investment expenditures. However, the more populist categories of public spending are decreased before elections. This

activity concentrates on benefits to specific groups. However, large scale manipulation of fiscal resources was not found around election times.

Yet another dimension of the literature on PBC at the sub-national level is to identify the impact of fiscal decentralization on the PBCs existence. The level and structure of fiscal decentralization play a crucial role in the electoral cycle to prevail. Baskaran et al. (2015) claimed that if sub-national units depend more on external funding rather than their resources, chances for the electoral cycle are increased. The rationale proposed behind this claim is that if a sub-national unit depends upon transfers more heavily, the citizens presume deficits as future transfers rather than as more tax burdens. This makes having tax deficits in election years valuable (Rodden, 2002). In contrast, González et al. (2013) suggested that the risk of PBC occurring is increased with increased decentralization if the value of holding office is fairly high. The study by A. Alesina and Paradisi (2017) on the Italian cities is another evidence of the PBC in a sub-national setting.

Early contributions such as Mouritzen (1991) have found cycles in public expenditures in Danish-municipalities. Political budget cycles have been detected in public spending and deficits in, among other places, Canadian provinces Blais and Nadeau (1992), in public expenditures in Portuguese municipalities, Veiga and Veiga (2007), in public debt in Flemish municipalities by Geys (2007) and, as noted previously, for deficits in U.S. states (Rose, 2006). Foucault et al. (2008), in a study of French municipalities, also find evidence of an electoral cycle in local public spending, with per capita municipal spending being greater in the year just before an election. In non-OECD countries, subnational political budget cycles have been detected in Brazil (Sakurai & Menezes-Filho, 2011), Colombia (Drazen & Eslava, 2010) and India (Baskaran et al., 2015).

The present analysis aligns with the most recent developments in this field. We conduct this analysis at the sub-national level where controlling for institutional differences is comparatively easy. Moreover, rather than studying fiscal aggregates, we examine disaggregated public capital expenditures to determine the existence of PBC in the Punjab province of Pakistan.

2.3 THEORETICAL MOTIVATION

2.3.1 Signaling Model (The Basic Competency Model)

K. S. Rogoff (1987) and K. Rogoff and Sibert (1988) proposed a model of signaling under the assumption of asymmetric information where politicians manipulate fiscal aggregates in the pre-election period. The underlying assumption behind these models is the unobserved competence of incumbents. Keeping the level of taxes the same and delivering more public goods defines this competence. This competence implies that voters will prefer the more competent policymakers who can generate higher welfare as compared to their counterparts. This competence remains unchanged over time. That is, if voters perceive a candidate as more competent than average in the pre-electoral period, he will be perceived with the same competence in the post-election period as well. Henceforth, higher expenditures before elections are seen as a signal of higher competence by voters and the candidate offering higher expenditure is thus preferred rationally over others.

The simple version of the K. S. Rogoff (1987) model is presented here to explain the basic idea. The model assumes that at the end of the first period there is an election, and the elected leader will remain in office thereafter. The information

gathered from the first period will be used by voters to choose the leader. Following equation represents the t period utility of the representative voter;

$$T_t = \sum_{s=t}^T \beta^{s-t} (g_s + v(k_s)) + \eta_t \quad (2.1)$$

here in eq (2.1) public consumption denoted by g_s and public investment by k_s . The function $v(\cdot)$ is an increasing and concave function whose first derivative satisfies the Inada conditions as k goes to zero or infinity.

The term η_t stands for a random shock in period $t=1$ which is the election period. This shock stands for the fact that the incumbent who is setting the policy does not know the outcome of that policy ex-ante. The voters chose a candidate through elections at the end of the first period to maximize their expected utility function. As far as the production of the public good is concerned, the leader's administrative ability' or 'competence' is denoted by ε and given this ε , the public good produced by him at time t is represented by the following expression in eq (2.2):

$$\varepsilon = g_t + k_{t+1} \quad (2.2)$$

where ε is assumed not to be observed directly. It is presumed for k (investment) to be decided one period advance so that it is unobservable in the current period. Henceforth, if a high value of g_t is observed by voters, they are unable to determine that whether this is due to the high ability of the policymaker or it is high current public consumption(by cutting some other expenditures in future). The voter thus faces this phenomenon as his basic inference problem in this model. Hence, high spending before an election creates two important questions in his mind. First, whether these high expenditures mean cut in some other expenditures or rise in taxes in the future? And second, whether this shows the high ability of the policymaker who can deliver more without cutting future goods and services?

The unobserved ability of the potential leaders is assumed to differ from each other. There are supposed to be two levels of ability i.e ϵ_H = high ability and ϵ_L = low ability. Here the ability ϵ_j is presumed to retain in the post-election period. Let $0 < \rho < 1$ is the prior probability of $\epsilon = \epsilon_H$. The voters thus solve their inference problem by observing the level of g and infer from it the ability of the leader being high or low. That is they have to form a posterior $\rho(g)$. The following expression in eq (2.3) represents the utility of the incumbent leader:

$$E_t T_t + (\chi + q (\sum_{s=t+1}^T \beta^{s-t} \chi)) \quad (2.3)$$

where χ denotes the office holding value and q stands for re-win probability in the elections held at the end of the first period. An important mention here is that social welfare and incumbents' own private payoffs jointly determine the utility function of the policymaker. A socially optimal fiscal policy would have been chosen by the policy setter if only social welfare would have determined his utility function and there would be no signaling at all. On the other hand, if the utility function of the incumbent only depends upon his private payoffs, a pooling equilibrium would emerge without signaling because incumbents with low ability would mimic the high ability incumbents in that case.

When the period 1 starts, the policymaker observes his ϵ_j and then set a level of g_1 and k_2 (here k_1 is assumed to be pre-determined). At the end of the same period, the voters vote for the incumbent or his challenger who is drawn randomly after observing g_1 and f_1 . Similarly, given the competence level ϵ , the elected incumbents set g_t and k_{t+1} in subsequent periods for social welfare maximization. By maximizing equation (2.1) subject to equation (2.2) we get the first best solution given below in eq (2.4);

$$K^* = V^{(-1)}\left(\frac{1}{\beta}\right) \text{ and } g^*(\epsilon^j) = \epsilon^j - K^* \quad (2.4)$$

The period 1 solution would also be the same if the policy maker's ability ε is known by the voters. Since higher utility is achieved through the provision of more public goods by the higher ability incumbents, these incumbents will be preferred by voters over the challenger with an expected ability ε . However, the same challenger will be preferred over a low ability incumbent.

The voter's perception about the ability of an incumbent is conditioned upon his observation of g_1 under asymmetric information assumption. The posterior $\rho^*(g_1)$ ability assigned by the voters to the policymakers being high ability incumbents based on their observation of g_1 summarizes all these political budget cycle beliefs. Therefore, the incumbents have an incentive to show themselves to be of high ability because of the rule of rational voting followed by the voters. Hence a separating equilibrium is reached in which the competence type of incumbents is revealed through the level of spending. To avoid mimicking by low ability incumbent, the high ability incumbent will spend enough which is beyond the capacity of the low ability incumbent. $g_1 = g^*(\varepsilon_L) = \varepsilon_L - k^*$ is the first best solution chosen by the low ability incumbent according to his type. He consequently loses the election because his first best solution reveals him to be of low ability. If the difference between ε_H and ε_L is fairly high then the first best solution $g^*(\varepsilon_H)$ chosen by the high ability incumbent is almost impossible to mimic by the low ability type. However, the high ability type is bound to choose a solution such that $g_1 > g^*(\varepsilon_H)$ to signal his competency in case ε_H and ε_L are sufficiently close. Hence in a range of different types of ability, each type will choose a $g_1 > g^*(\varepsilon_j)$ to separate itself from the type immediately below it. However, the first best will be chosen by the lowest type of ability. The general result we draw from this model is that election year fiscal

expansion is caused by the fact that voters are sophisticated and rational rather than that they are naive or irrational.

The argument forwarded for the timing of signaling is that such information is evolved. Therefore, as elections draw near, new information is signaled. Rogoff assumed elections to be held at the end of every other period and the ability of the incumbent following an AR structure (which is composed of the current period and the previous period's i.i.d. shock). The information g_t signaled at t period which is pre-election period is relevant for $t+1$ but not for $t+2$. Hence, the choice of g_t by the incumbent becomes fairly easy. However, this model suffers from a shortfall that the voters in this model are unable to observe overall spending, deficit or different components of spending which inhibits their ability to completely infer their competence.

This is called the un-observability of fiscal policy. Incumbents may manipulate components of expenditures and deficits by keeping overall aggregates constant in case voters are fiscal conservatives. Some groups of voters may be targeted at the expense of others by making these compositional changes in transfers or spending before elections. This is important for the targeted voters to know whether they will be favored similarly after elections. Hence preference of the politicians over different voters or different categories of expenditures is the key unobserved characteristic of the incumbents. Rogoff competence model assumes that preferences of incumbents persist over time; hence rational voter expects favor from incumbent after elections as well if it is receiving favors now. Voter thus has an inference problem here. Firstly, higher transfers to a group may signal a high weight of that group in the incumbent's objective function than other groups or non-targeted expenditures. Secondly, or it may signal that the specific targeted group is a swing

group and targeted simply to gain more votes by the incumbents. The general conclusion is that electorally attractive groups are favored with greater transfers around elections at the cost of some other type of expenditures to keep deficit constant. The present analysis tries to find out any such electoral engineering of development expenditures in Punjab province of Pakistan empirically.

2.4 DATA AND METHODOLOGY

2.4.1 Data Description

This study intends to investigate development funds allocated under the Annual Development Plan (ADP) by the Punjab government. Development budget is not only a most visible activity of government revealing political preferences but also the area where policymakers can exercise a greater degree of discretion (Hasnain, 2010). Since constituency level data is limited or absent in the majority of the cases we are employing district-level data for our analysis. Our dependent variable is the development budget allocated across districts of Punjab over the period 2000 to 2017. ADP outlines the development expenditures on heads such as social sectors, infrastructure, energy, housing and development, and production, etc. We have selected four categories namely education, health, water supply, and sanitation and roads and bridges sector. Former two heads are included in the social sector and later two forms the physical infrastructure sector of development planning. Preferences of the politicians are observed to be tilted towards tangible and targeted public provisions because credit claiming in these sectors is easier (Hasnain, 2010). Therefore, dis-aggregations of development expenditures into social and physical infrastructure sectors allow us to distinguish political preferences for these sectors more deeply. Outlays on these heads have been measured in million rupees. ADP

volumes have been taken from the planning and development department of the government of Punjab.

A recent wave of the empirical literature on the PBC is now trying to distinguish the impact of pre-determined elections from endogenous elections. Brender and Drazen (2005) have documented that the PBC strength significantly depends on the fact that elections held were pre-determined or not. This is more commonly expected that if the elections are pre-determined or fixed exogenously by law, the magnitude of the PBC i.e the fiscal manipulation before elections may be stronger. However, this belief is open to two important conceptual issues. Firstly, there is no clear cut distinction between the electoral systems which allow only exogenously fixed elections from those where incumbents may call early elections. Some countries follow fix election dates with some provision for early elections under exceptional circumstances. However, these exceptional circumstances have not been clearly explained in the respective electoral laws. Moreover, given provision for early elections by almost all countries; they are held on pre-determined time or earlier, is considered as an empirical question by the economists. Similarly, there are also some countries where elections may be called earlier but they rarely do this. The second conceptual problem is about stronger or weaker fiscal cycles when elections are predetermined. It is a lot easier to manipulate fiscal resources by opportunistic incumbents when elections to be held at fixed dates draw near as compared to the snap elections. In the second case, however, the government can control the timing of endogenous elections; the scope for fiscal manipulation may increase. The incumbents may easily use fiscal policy for their electoral purpose and call an election when the indicators are on the positive side. On the other hand, the government

responsible for the deteriorating fiscal situation may be replaced by the opposite majority and paves the way for early elections consequently.

As far as Pakistan is concerned, the electoral history has not been smooth. Since 1985 nine general elections have been held in Pakistan amongst which only the recent four elections are held on pre-determined dates. Democracy and the continuity of democracy have been toppled down many times by either the dictators or the political rifts between the political parties or by the various external and internal shocks to the economy. Therefore, to avoid the issue of endogenous elections and all the empirical complexity attached to the phenomenon, we have taken our data from 2000 to 2017. The selection of the period in our data is derived by the fact that elections were held at a pre-determined time during this entire period. This period covers four elections held in 2002, 2008, 2013 and 2018 respectively. However, previous elections were endogenous and were held in mid-term due to various internal and external shocks. Since our objective in this study is to capture fiscal manipulation by the incumbents around elections time, these tactics are more prevalent when the incumbents get the full term to use their authority.

Since our dependent variable is expenditures on development projects which usually take time to complete and show results with a gap, we vary our definition of Election variable to identify in which year of the whole term cyclical effect occurs. Hence, following Blais and Nadeau (1992); Ashworth et al. (2005) and Benito and Bastida (2009) we have constructed a categorical variable with four categories to represent this variable. Firstly, we have assigned value "0" in the election year and "1" in the one year before election year; "2" in two years before an election and three years before an election (this constitutes the mid of the term) and "3" in four years before an elections or the post-election year. Next, we have separated mid-term into

separate years and constituted five dummies each year. In both of these specifications election year is taken as a base to avoid the issue of perfect co-linearity. We generate a variable Election Year Dummy following Shi and Svensson (2002, 2006) by assigning the value "1" in the election year and "0" otherwise and use it for comparison with the non-election years. Data on election dates have been gathered from the Election Commission of Pakistan.

To account for the ideological cycle, we use a dummy variable following A. Alesina and Roubini (1992), which takes the value of 1 when the provincial ruling party was a rightist majority or coalition and 0 otherwise. The hypothesis we test is that left-wing governments are generally inclined to spend more than right-wing governments. More specifically the former show particular interest in health care, education, and social security benefits while the latter focus on sectors such as public administration and infrastructures (i.e., roads). This variable in our case only captures the impact of the party and not the ideology per se because strong ideological differences on economic policy are not prevalent in Pakistan's politics.

We have further used some political controls in our analysis. The first control is the strength of the government in a district because this can significantly impact allocations for a district regardless of the time in which they are transferred. We have designed our affiliation variable in binary form to represent the strength of the government in the district. Since following majority rule incumbents need a simple majority to form a government; we have assigned the value "1" if the districts have 50% or above seats affiliated with the government and "0" otherwise. Following the political objective of winning simple majority incumbents will divert more resources towards affiliated districts. The data on the seat incumbents have in districts is taken from the provincial assembly of Punjab and the election commission of Pakistan.

Our second control captures the degree of fiscal decentralization in Pakistan. Baskaran et al. (2016) have argued that lower dependence on central resources by local governments lead to smaller cycles in fiscal policies. The 18th amendment to the constitution is a landmark development in the resource distribution history of Pakistan. After this amendment, provinces have been granted greater financial autonomy. Initially, expenditure decentralization was accompanied by the much more limited decentralization of taxing powers and was planned to be moderated gradually in three years. Henceforth, provincial revenue collection, under this amendment, was planned to increase gradually from 6% to 15% between 2010 and 2015. Similarly, expenditures share of provinces increased from 34% to 55% in the same period. An important point to make here is that this amendment has increased the potential of provinces for raising additional revenues through capital value taxes on property and estate and inheritance taxes and environmental taxes and charges. However, they still prefer to depend on federal transfers through the National Finance Commission award and do not bother to discover their revenue potential (Shah, 2012). Therefore, we have also controlled for the impact of the 18th amendment to the constitution on resource distribution. We have constructed a dummy variable to measure the impact of the 18th amendment to the constitution which is assigned the value "1" for the years from 2010 to 2017 and "0" otherwise.

A further political control is the level of the democratic development. This may also impact the resource distribution tactics of the incumbents. We have used the polity iv score as a proxy for the level of democracy in our country. Data on political ideology is taken from the database of political institutions (DPI). Age of the incumbent party is also used as another political control. Besides, several district-level controls are also included to cover district heterogeneity and to account for any

potential omitted variable bias from the model constructed. For example, the district population (Districts with a lower number of inhabitants may often lack the necessary resources for larger projects and the central authorities may overcome this by assisting them with a higher priority status) measured in thousand persons and area of districts measured in square kilometers are used. Other controls include total enrollment at schools and the number of government hospitals. The source for this data is Punjab development statistics taken from the Punjab bureau of statistics. The estimation technique using this data has been described in the next section.

We have constructed a panel data set where our period is eighteen years from 2000 to 2017. The total number of districts until the elections of 1997 in Punjab was 29; however, 6 new districts were added afterward. We have merged information of new districts into their parent districts and constructed a balanced panel with T=18 and N=29. The main reason for this merger is the unavailability of data on new districts which were added later on.

2.4.2 Methodology

To check for the presence of PBC in our data, we have constructed following model given in eq (2.5);

$$Y_{it}^{DEV} = \beta_1 Election_{it} + \beta_2 Y_{it-1}^{DEV} + \Sigma \gamma' Controls_{it} + \alpha_i + \epsilon_{it} \quad (2.5)$$

Here Y_{it}^{DEV} stands for different components of the development expenditures. Separate regressions for each development sector are estimated. This has helped us distinguish the differential effect of the budget cycle in the targeted versus non-targeted public provisions. Y_{it-1}^{DEV} is the lag of development expenditures. $\Sigma \gamma'$ is a vector of coefficients for different economic and political controls. For each budgetary variable, we have applied three specifications which vary in the

computation of electoral variables. In the first specification, the election period is measured by $Election_{it}$, which equals “1” in the year preceding election year and “0” otherwise. The examination of the election year follows the practice of earlier studies that examine electoral business cycles with annual data (Block et al., 2003; Persson & Tabellini, 2003). However, this specification is only used as a comparison of election year with the non-election years estimated in next two specifications.

In the second specification, we have introduced three dummies to capture the full electoral cycle in the manner explained in previous section. The use of multivariate dummies yields a perfect collinearity problem. To avoid it, we omit the prevalent dummy i.e. the election year. In specification 3 separate dummies for each year by separating midterm into single years are used for more in-depth inquiry. However for robustness purpose, we have re-estimated specifications 2 and 3 with a constant term and compared results with the previous estimations so that any bias due to the specification of non-election years omitting election year may be avoided.

In specification 4 we have used $Election_{it}$ for electoral motive and Right dummy for capturing the partisan and ideological impact on public spending as in eq (2.6) below:

$$Y_{it}^{DEV} = \beta_1 Election_{it} + \beta_2 Right_{it} + X_{it} + \alpha_i + \varepsilon_{it} \quad (2.6)$$

All of our specifications include a full set of economic and political controls explained in the data section. All the estimations include a lagged dependent variable, with an expected positive coefficient. Government administrations are constrained by budgets, and the current budget largely determines the next period's appropriations (Niskanen, 2017). Such inertia provides some stability and predetermines fiscal spending (Schuknecht, 2000). Moreover, the long term nature of the development expenditures also makes it necessary to add lagged expenditures in our specification.

Development schemes usually are announced for more than two or three years and funds for them each year are consequently allocated based upon previous allocations.

However, the lagged dependent variable in the model leads to dynamic panel bias (Nickell, 1981). This bias is largely addressed in the political budget cycle literature through the GMM technique proposed by Holtz-Eakin (1988). Arellano and Bond (1991); Arellano and Bover (1995) and Blundell and Bond (1998) further developed this technique. It has been argued that the introduction of GMM in the political budget cycle literature is a major advancement in the empirical side of this literature. Therefore, we have used this technique in our estimation.

The GMM technique has two versions; difference GMM and system GMM. Brender and Drazen (2005) have applied the difference GMM which is the original Arellano-Bond estimator in their paper. This approach uses endogenous variable lags in the estimation equation as instruments. The system GMM, on the other hand, uses level equation in the analysis leading to additional instruments in differences and is preferred over difference GMM specifically when we have a highly persistent dependent variable (Blundell & Bond, 1998). In our case lagged expenditure's coefficient roughly varies from 0.6 to 0.8, therefore, system GMM is appropriate to apply here. Moreover, our explanatory variables specifically the political control variables have very little variation over time. They are constant between electoral terms and change only when new elections are held. As System-GMM draws equations in differences as well as in levels, it preserves some of the variations in rarely-changing variables, making this an attractive estimator for our purposes.

The number of instruments in GMM is equal to the square of periods. If the period is fairly large, it may lead to over fitting of the endogenous variable (Roodman, 2009). To restrict the number of instruments we have collapsed our instruments.

Even after collapsing, the number of instruments remains high which reduces the power of Sargan (1958) and Hansen's (1982) tests of instrument endogeneity. Specifically, the p-value for Hansen score around 1 or 0.99 is considered sufficiently large. The estimates we have reported in our model have largely a p-value for the Hansen score below 0.4. Moreover, following Roodman (2009) we have used a further diagnostic for the validity of our GMM estimates which is the autocorrelation of AR(1) and AR(2) in first differences. The validity of instruments is supported by the autocorrelation in the first order but not in the second-order given the lag structure of our instruments.

2.5 RESULTS AND DISCUSSION

Table 2.1 reports the basic descriptive statistics of the key variables used in this analysis. Table 2.2 provides the bivariate correlation between the variables.

Table 2.1: Descriptive Statistics

| Variables | Obs. | Mean | Std. Dev. | Min | Max |
|---------------------------|------|---------|-----------|-----------|----------|
| Health Budget | 522 | 291.16 | 787.71 | 0.0009723 | 11170.24 |
| Education Budget | 522 | 278.93 | 395.31 | 0.0016591 | 3663.00 |
| Roads & Bridges Budget | 522 | 685.71 | 973.99 | 0.0000086 | 6527.98 |
| Water Supply Budget | 522 | 288.58 | 919.08 | 0.0003069 | 14814.20 |
| Polity2 | 522 | 1.56 | 5.59 | -6.00 | 7.00 |
| The Incumbent's Party Age | 522 | 17.25 | 10.95 | 1.00 | 30.00 |
| Government Majority | 522 | 0.56 | 0.50 | 0.00 | 1.00 |
| Population | 522 | 3141.10 | 1796.23 | 953.00 | 13444.00 |
| Number of Govt. Hospitals | 522 | 8.61 | 6.29 | 2.00 | 45.00 |
| Number Of Govt. Schools | 522 | 1913.34 | 672.70 | 848.00 | 4050.00 |
| Area | 522 | 7080.66 | 4159.95 | 1772.00 | 24823.00 |

Source: Author's calculations

Here per capita budget of different sectors is measured in million rupees. As can be seen from the table 2.2 Elections variable which is a categorical variable to tap the electoral cycle has a negative association with the per capita development budget. This at this initial level shows that as we move farther away from elections, development spending is reduced.

Figure 2.1 shows the total budget allocated in the study period from 2000-2017 for different sectors. The figure also depicts some signs of the electoral cycle. Overall in all sectors, we observe lower spending in the post-election period.

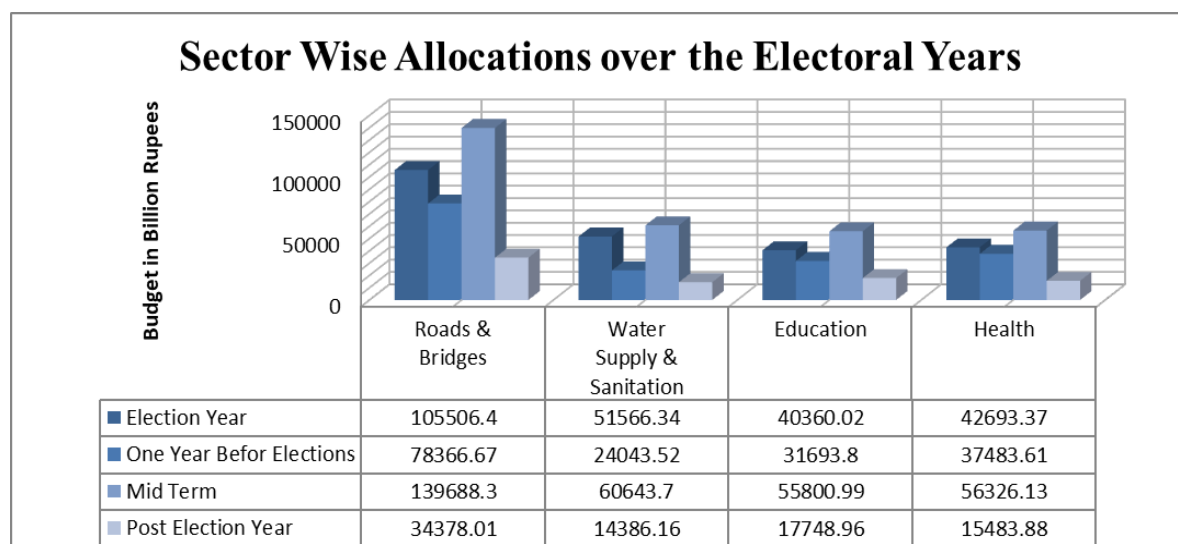
Table 2.2: Correlation Matrix of the Variables

| Variables | Combine d Budget | 18th Amendme nt | Governme nt Strength | Polity 2 | Populatio n | School s | Hospital s | Election s |
|-------------------------|---------------------|-----------------------|-------------------------|-------------|----------------|-------------|---------------|---------------|
| Combined Budget | 1 | | | | | | | |
| 18th Amendme nt | 0.156 | 1 | | | | | | |
| Governme nt Strength | 0.531 | 0.091 | 1 | | | | | |
| Polity2 | 0.530 | -0.008 | 0.813 | 1 | | | | |
| Log Population | 0.095 | 0.013 | 0.121 | 0.128 | 1 | | | |
| No of Schools | -0.085 | 0.001 | -0.094 | -0.066 | 0.662 | 1 | | |
| No of Hospitals | 0.186 | 0.085 | 0.120 | 0.151 | 0.625 | 0.194 | 1 | |
| Elections | -0.137 | -0.007 | -0.135 | 0.026 | -0.009 | 0.009 | -0.002 | 1 |

Source: Author's calculations

The highest spending is observed in mid of the term. However, expenditures show a reduction one year before elections and then a mild increase in an election year. This leads us to believe that there seems to be some systematic planning behind this rise and fall in spending.

Figure 2.1: Electoral Cycle Wise Per-Capita Budget Allocated



Source: Author's calculations

Expenditures in the post-election period are lowest and then they are increased gradually specifically during the mid-years that are second and third years of the term in Pakistan case. Another important element this graph shows that infrastructure sectors are highly prioritized by the incumbents in Punjab. The roads sector has received the highest budget in each electoral period than other sectors. Both infrastructure sectors jointly received almost 60% to 70% of the budget allocated in any specific year. The reason for this preference is straight forward. Spending in both of the sectors is highly targeted and generates visible benefits. Hence the incumbent's tendency to prefer the infrastructure sector over the social sector reveals that they are possibly pursuing their re-election goals.

We have run separate regressions for different sub-sectors of development plans. All reported equations largely satisfy the instrument validity criteria set by the Hansen test and AR(2). The lagged dependent variable in our all specification came out to be a consistent factor in determining the current budget. The hypothesis which we want to test in this study is that spending will be higher in the election year as compared to non-election years. Since we are studying the budget allocated for long term development projects, we expect that the incumbents might plan to spend somewhat earlier than the election year. The reason for this belief is that development projects take some time to complete. And if the incumbents truly pursue their re-election motives and want to show performance to the electorate they would try to complete development schemes well in time before the next elections. Hence we expect the electoral cycle to appear somewhere in mid of the term. Moreover, popular belief about costly to do investments is that they are reduced and current spending is increased around election times.

Following the approach of Blais and Nadeau (1992) and Galli and Rossi (2002), we have hypothesized that spending will be lower in non-election years as compared to the election year. Moreover, Blais and Nadeau (1992) have also suggested that if there is no systematic difference between non- election years, it shows that the whole cycle is not planned (spending is not systematically cut in the post-election year and progressively increased in the following years). Table 2.3 reports results for our specification where we have used dummies for the whole electoral term. Galli and Rossi (2002) have suggested that the use of multivariate dummies yields a perfect collinearity problem. To avoid it they have omitted the prevalent dummy (alternatively election year) and interpreted the other dummy parameters concerning the omitted one. However, we have combined second and third year and generated one dummy for both with the name midterm.

Hence now we have straight forward coding as the post-election year, midterm and one year before an election. The finding of the study suggests that in all sectors spending is cut systematically in the post-election year (by 41% in roads, 69% in water supply and by 72% in the education sector) and gradually increased in subsequent years. In the roads & bridges sector which involves funding for mega projects with visible and targeted benefits, spending is increased by almost 71% [$\text{Exp}(0.541)=1.71$] in mid of the term as compared to the election year. The possible reason for this behavior is to complete infrastructure projects before the next election to show performance to the electorates. In water supply and sanitation, however, the spending remains negative in non-election years and is increased only induced by the elections in an election year. The water supply & sanitation sector falls in the domain of district governments in Pakistan.

Table 2.3: Results of GMM Estimation for Election and Non-Election Year Dummies

| Variables | Roads & Bridges | | Water Supply & Sanitation | | Health | | Education | |
|----------------------------------|---------------------|---------------------|---------------------------|----------------------|---------------------|---------------------|--------------------|----------------------|
| Specification | Election Year | Non-Election Year | Election Year | Non-Election Year | Election Year | Non-Election Year | Election Year | Non-Election Year |
| Election Year | -0.025 (0.095) | | 0.556*** (0.101) | | -0.258 (0.205) | | 0.360** (0.163) | |
| One Year Before Elections | | -0.102 (0.142) | | -0.461*** (0.154) | | 0.205 (0.257) | | 0.446* (0.229) |
| Mid of the Term | | 0.541*** (0.112) | | -0.295** (0.129) | | 0.341 (0.203) | | -0.628** (0.244) |
| Post-Election Year | | -0.527** (0.192) | | -1.150*** (0.243) | | 0.126 (0.287) | | -1.253*** (0.393) |
| Lagged Roads & Bridges | 0.792*** (0.094) | 0.803*** (0.121) | | | | | | |
| Lagged Water Supply & Sanitation | | | 0.460*** (0.068) | 0.381*** (0.0743) | | | | |
| Lagged Health | | | | | 0.812*** (0.292) | 0.823*** (0.279) | | |
| Lagged Education | | | | | | | 0.353 (0.539) | 0.0280 (0.655) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| AR(1)/p(AR 1) | -2.41/0.016 | -2.07/0.039 | -3.47/0.00 | -3.22/0.001 | -2.92/0.004 | -2.80/0.005 | -2.94/0.004 | -1.33/0.184 |
| AR(2)/p(AR 2) | 1.71/0.087 | 0.95/0.345 | 0.92/0.356 | 0.80/0.423 | 1.72/0.085 | 1.65/0.10 | 0.34/0.732 | -0.44/0.66 |
| Hansen/p(Hansen) | 26.43/0.35 | 23.63/0.31 | 26.43/0.33 | 25.6/0.222 | 25.46/0.33 | 23.41/0.27 | 25.42/0.33 | 27.34/0.13 |
| F-statistics | 455.20*** | 270.8*** | 97.07*** | 77.16*** | 22.02*** | 25.61*** | 31.73*** | 29.54*** |
| Observations | 464 | 464 | 464 | 464 | 464 | 464 | 464 | 464 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

Notes: i) Robust standard errors are reported in parenthesis ii) *** denotes $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$ respectively iii) F is a Wald test of the joint significance of the reported coefficients iv) AR(1) and AR(2) are serial correlation test of order 1 and 2 using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, p-value is given after / vi) all equation include log of population of district, district area in square kilometers, polity2 as proxy for democratic development, dummy for 18th amendment, dummy for government majority in district and age of the incumbent party as control variables. Number of schools in the education equation, the number of government hospitals in the health equation is also used as further controls

Table 2.4: Results of GMM Estimation for Estimations With and Without a Constant(1st Robustness Check)

| Variables | Roads | | Water supply | | Health | | Education | |
|----------------------------------|---------------------|-----------------------|----------------------|----------------------|------------------|------------------------|----------------------|----------------------|
| | No-Constant | With Constant | No-Constant | With Constant | No-Constant | With Constant | No-Constant | With Constant |
| <i>One Year Before Elections</i> | -0.102 (0.142) | -0.170 (0.192) | -0.461*** (0.154) | -0.374** (0.169) | 0.205 (0.257) | 0.065 (0.253) | 0.446* (0.229) | 0.366* (0.191) |
| <i>Mid of the Term</i> | 0.541*** (0.112) | 0.533*** (0.122) | -0.295** (0.129) | -0.336* (0.164) | 0.341 (0.203) | 0.321 (0.252) | -0.628** (0.244) | -0.738*** (0.129) |
| <i>Post-Election Year</i> | -0.527** (0.192) | -0.244 (0.312) | -1.150*** (0.243) | -1.378*** (0.363) | 0.126 (0.287) | 0.514 (0.406) | -1.253*** (0.393) | -1.422*** (0.192) |
| <i>Constant</i> | | -130.537 (111.624) | | 103.565 (98.036) | | -203.527** (98.020) | | 231.569 (511.602) |
| <i>Lagged Dependent</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Observations</i> | 464 | 464 | 464 | 464 | 464 | 464 | 464 | 464 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| <i>Hansen/prob.</i> | 23.6/0.31 | 23.09/0.28 | 25.6/0.22 | 22.34/0.32 | 23.41/0.27 | 23.46/0.22 | 27.34/0.13 | 27.01/0.10 |
| <i>AR(2)/p</i> | 0.94/0.34 | 0.58/0.56 | 0.80/0.42 | 1.61/0.11 | 1.65/0.11 | 0.79/0.43 | -0.445/0.66 | -2.015/0.04 |
| <i>AR(1)/p</i> | -2.1/0.04 | -1.978/0.05 | -3.22/0.00 | -2.80/0.00 | -2.79/0.00 | -2.63/0.00 | -1.328/0.18 | -1.43/0.15 |

Notes: i) Robust standard errors are reported in parenthesis ii) *** denotes $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$ respectively iii) F is a Wald test of the joint significance of the reported coefficients iv) AR(1) and AR(2) are serial correlation test of order 1 and 2 using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, p-value is given after / vi) all equation include log of population of district, district area in square kilometers, polity2 as proxy for democratic development, dummy for 18th amendment, dummy for government majority in district and age of the incumbent party as control variables. Number of schools in the education equation, the number of government hospitals in the health equation is also used as further controls.

Table 2.5: Results of GMM Estimation for Non-Election Year Dummies by Splitting Mid Term

| Variables | Roads & Bridges | | Water Supply & Sanitation | | Health | | Education | |
|-----------------------------|-------------------|----------------------|---------------------------|----------------------|-------------------|-------------------|--------------------|--------------------|
| Specification | Election Year | Non- EY | Election Year | Non- EY | Election Year | Non- EY | Election Year | Non- EY |
| One Year Before Elections | | -0.025 (0.124) | | -0.505*** (0.179) | | 0.251 (0.237) | | 0.655* (0.321) |
| Two Years Before Election | | 0.680*** (0.180) | | -0.451* (0.255) | | 0.438* (0.228) | | -0.425* (0.244) |
| Three Years Before Election | | 0.364* (0.199) | | -0.148 (0.190) | | 0.193 (0.244) | | -1.087 (0.843) |
| Post-Election Year | | -0.592*** (0.185) | | -1.098*** (0.253) | | 0.0355 (0.304) | | -1.732 (1.092) |
| Election Year | -0.025 (0.095) | | 0.556*** (0.101) | | -0.258 (0.205) | | 0.360** (0.163) | |
| 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 |
| AR(1)/p(AR 1) | -2.41/0.016 | -2.29/0.02 | -3.47/0.00 | -3.02/0.003 | -2.92/0.004 | -2.08/0.03 | -2.94/0.004 | -2.70/0.007 |
| AR(2) | 1.71/0.087 | 0.85/0.394 | 0.92/0.356 | 1.02/0.305 | 1.72/0.085 | -0.16/0.87 | 0.34/0.732 | 1.76/0.080 |
| Hansen/p(Hansen) | 26.43/0.353 | 22.5/0.314 | 26.43/0.332 | 25.83/0.172 | 25.46/0.33 | 27.22/0.10 | 25.42/0.329 | 22.48/0.261 |
| F-statistics | 455.20*** | 319.74*** | 97.07*** | 84.53*** | 22.02*** | 21.63*** | 31.73*** | 36.92*** |
| Observations | 464 | 464 | 464 | 464 | 464 | 464 | 464 | 464 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

Notes: i) Robust standard errors are reported in parenthesis ii) *** denotes $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$ respectively iii) F is a Wald test of the joint significance of the reported coefficients iv) AR(1) and AR(2) are serial correlation test of order 1 and 2 using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, p-value is given after / vi) all equation include log of population of district, district area in square kilometers, polity2 as proxy for democratic development, dummy for 18th amendment, dummy for government majority in district and age of the incumbent party as control variables. The number of schools in the education equation, the number of government hospitals in the health equation is also used as further controls. Vii) Non-EY=Non-Election Year

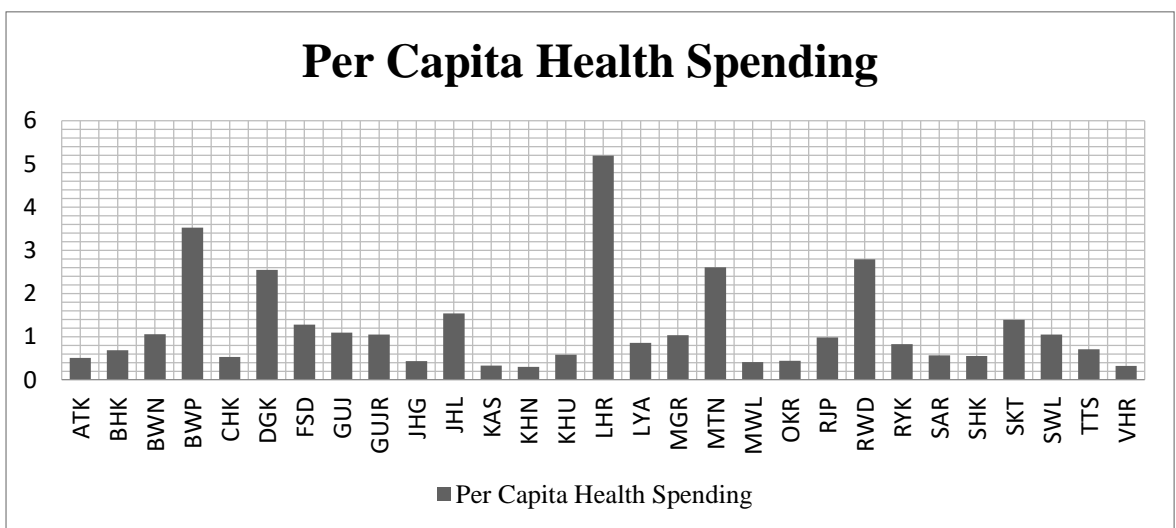
Table 2.6: Results of GMM Estimation for Estimations With and Without a Constant(2nd Robustness Check)

| Variables | Roads | | Water Supply | | Health | | Education | |
|-----------------------------|--------------------|---------------------|--------------------|--------------------|-----------------|-----------------------|------------------|--------------------|
| | No-Constant | With Constant | No-Constant | With Constant | No-Constant | With Constant | No-Constant | With Constant |
| One Year Before Elections | -0.03 (0.12) | -0.16 (0.18) | -0.50*** (0.18) | -0.40** (0.17) | 0.25 (0.24) | 0.00 (0.26) | 0.66* (0.32) | -0.54*** (0.15) |
| Two Years Before Election | 0.68*** (0.18) | 0.55*** (0.15) | -0.45* (0.25) | -0.39 (0.24) | 0.44* (0.23) | 0.22 (0.29) | -0.42* (0.24) | -1.49*** (0.39) |
| Three Years Before Election | 0.36* (0.20) | 0.51** (0.19) | -0.15 (0.19) | -0.28 (0.17) | 0.19 (0.24) | 0.48 (0.32) | -1.09 (0.84) | -2.25*** (0.55) |
| Post-Election Year | -0.59*** (0.19) | -0.26 (0.29) | -1.10*** (0.25) | -1.34*** (0.34) | 0.04 (0.30) | 0.65 (0.47) | -1.73 (1.09) | 0.70*** (0.22) |
| Constant | | -127.98 (105.74) | | 96.05 (83.98) | | -223.29** (101.49) | | 427.37 (767.83) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Lagged Dependent | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 464 | 464 | 464 | 464 | 464 | 464 | 464 | 464 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| AR(1)/p | -2.29/0.02 | -1.98/0.04 | -3.02/0.00 | -2.84/0.00 | -2.70/0.00 | -2.41/0.01 | -2.08/0.04 | -1.84/0.06 |
| Hansen/prob. | 22.5/0.31 | 23.2/0.23 | 25.8/0.17 | 22.39/0.26 | 22.48/0.26 | 22.36/0.22 | 27.22/0.11 | 24.10/0.15 |
| AR(2)/p | 0.85/0.39 | 0.46/0.64 | 1.02/0.31 | 1.56/0.12 | 1.76/0.078 | 0.74/0.46 | -0.16/0.87 | -1.06/0.31 |

Notes: i) Robust standard errors are reported in parenthesis ii) *** denotes $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$ respectively iii) F is a Wald test of the joint significance of the reported coefficients iv) AR(1) and AR(2) are serial correlation test of order 1 and 2 using residuals in first differences, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, p-value is given after / vi) all equation include log of population of district, district area in square kilometers, polity2 as proxy for democratic development, dummy for 18th amendment, dummy for government majority in district and age of the incumbent party as control variables. The number of schools in the education equation, the number of government hospitals in the health equation is also used as further controls.

However provincial governments also participate in this sector because specific geographic targeting with visible benefits is more viable in this sector. The projects in this sector are at the level of street electrification, gas connections, sewerage lines, etc. and thus can be completed within a short period. Politicians, therefore, seem to be following their pragmatic goals through this sector and increase spending in the election year. The education sector also experiences cut in expenditures in the post-election year and the mid-term. Spending for this sector is increased one year before elections and it remains positive in the election year as well. The health sector, however, shows no signs of the electoral cycle in this specification. One possible reason for this finding may be that health expenditures in the Punjab province show a skewed pattern. Almost 80% of the health budget over the study period has been allocated for four major districts of Lahore, Multan, Rawalpindi, and Bahawalpur. This is evident from the graph given below. There might be other factors that are beyond the scope of this study which may explain this distribution. An in-depth inquiry into this sector is necessary to bring a better prediction about this sector.

Figure 2.2: District-wise Spending in Health Sector over the Study Period



Source: Annual Development Plans (1988-2017), Government of Punjab

For robustness and to further elaborate the cyclical impact we have disaggregated the mid-term into separate years and reported the results for this specification in table 2.5. We observe that in the roads sector spending starts rising three years before elections which is 44% higher than other years and the coefficient almost doubles in the next year. And 97 % of higher expenditures are made in two years before elections. Another important insight from this specification is that the health sector also receives larger spending two years before elections. Table 2.4 and 2.6 show the results of our estimations following specification 2 and 3 but with a constant term. Here, instead of comparing non-election years with election year dummy from a separate estimation, we compare them with the constant term. The coefficients on non-election year dummies using both specifications are almost stable. This shows that the estimates generated in table 2.3 and 2.5 are robust to alternative specification of the model.

The empirical literature on the electoral cycle also tests for the presence of an ideological cycle in distributive politics. Party orientation also determines the strategy of the incumbents in distributing public funds. The right-wing governments are expected to spend less than the left governments specifically in social sectors, while the right governments focus seems to be on the area of public administration and infrastructure sectors specifically roads (A. Alesina & Roubini, 1992). In the Punjab province of Pakistan, we do not expect a clear cut ideological difference between the two parties who formed government in the study period. There were two political parties Pakistan Muslim League Nawaz (PMLN) and Pakistan Muslim League Quaid-e-Azam (PMLQ) PMLQ who governed the province from in the last seventeen years.

Table 2.3: Party Impact on the Public Development Expenditures

| Variables | Roads & Bridges | | Water Supply & Sanitation | | Health | | Education | |
|--------------------------|----------------------|---------------------|---------------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| Election Year | -0.273*** (0.090) | | 0.373*** (0.134) | | -0.521*** (0.119) | | -0.065 (0.110) | |
| One Year Before Election | | -0.034 (0.126) | | -0.434** (0.171) | | 0.364** | | 0.474* (0.274) |
| Mid-Term | | 0.624*** (0.157) | | -0.203 (0.167) | | 0.628*** (0.148) | | -0.574 (0.352) |
| Post-Election Year | | -0.334 (0.248) | | -1.007*** (0.226) | | 0.613** (0.273) | | -1.182** (0.495) |
| Right Dummy | -5.137*** (1.276) | -2.145 (1.815) | -2.825 (1.766) | -1.356 (1.557) | -6.133*** (1.569) | -6.322*** (1.768) | -5.059*** (0.977) | -0.640 (2.476) |
| Lagged Roads & Bridges | 0.510*** (0.140) | 0.704*** (0.096) | | | | | | |
| Lagged Water Supply | | | 0.366*** (0.097) | 0.348*** (0.0896) | | | | |
| Lagged Health | | | | | 0.434* (0.247) | 0.518** (0.237) | | |
| Lagged Education | | | | | | | 0.413*** (0.096) | 0.0437 (0.684) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| AR(1) | -2.20/0.03 | -2.20/0.03 | -2.84/0.01 | -2.95/0.01 | -2.37/0.02 | -2.45/0.01 | -3.73/0.00 | -1.34/0.18 |
| AR(2) | 1.55/.121 | 0.95/0.34 | 0.64/0.52 | 0.61/0.54 | 0.48/0.63 | 0.13/0.89 | -1.09/0.27 | -0.65/0.52 |
| Hansen/p(Hansen) | 27.29/0.24 | 22.37/0.32 | 24.44/0.38 | 24.15/0.24 | 24.17/0.34 | 23.68/0.21 | 27.60/0.19 | 27.34/0.1 |
| F-statistics | 41.36*** | 707.36*** | 82.44*** | 80.74*** | 36.76*** | 48.16*** | 47.79*** | 33.18*** |
| Observations | 464 | 464 | 464 | 464 | 464 | 464 | 464 | 464 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

Notes: i) Robust standard errors are reported in parenthesis ii) *** denotes $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$ respectively iii) F is a Wald test of the joint significance of the reported coefficients iv) AR(1) and AR(2) are serial correlation test of order 1 and 2 using residuals in first differences, asymptotically distributed as $N(0, I)$ under the null of no serial correlation. v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, p-value is given after / vi) all equation include log of population of district, district area in square kilometers, polity2 as proxy for democratic development, dummy for 18th amendment, dummy for government majority in district and age of the incumbent party as control variables. The number of schools in the education equation, the number of government hospitals in the health equation are also used as further controls.

PMLQ served for five years from 2002 to 2007 and the PMLN for the next ten years from 2008 to 2017. The database of political institutions has coded PMLN as a right-wing party and PMLQ has been placed in the category with no clear ideology. Therefore, the Right dummy in our study will capture the distinctive impact of the party rather than the ideology per se. We have repeated all of our specifications by including the right dummy and reported results in table 2.7. Our findings suggest that party effect does play a role in deciding the development budget in Punjab. This is not surprising in Pakistan's case because the economic policy in Pakistan has never been sound enough to resist party impact. Political parties decide their own set of policies after forming the government. All of the eight coefficients of Right are negative and four from these are significant at the 99% level. The water supply & sanitation sector have not a single significant coefficient for the right dummy. On the other hand, the party effect turned out to be the strongest in the health sector.

The results indicate that the right government specifically PMLN has the least priority for the development sector. Even roads and education sectors receive fewer funds but the coefficient is significant in two specifications in the roads sector and one specification in the education sector. The finding is consistent with the study by Blais and Nadeau (1992) and Galli and Rossi (2002). Again the conclusion from this finding leads us to believe that the incumbents in Punjab tend to prioritize geographically targeted, quick to implement and visible projects over the social or long term projects.

PMLN government seems to spend significantly less in the social and roads sector while the water supply and sanitation sector remains unaffected with the political orientation of the party. Furthermore, including the right dummy does not change the results of the electoral dummies from our previous specifications except

health sector results. Spending is reduced in the post-election year and increased in the midterm in most of the specifications. Election year spending is positive in the water supply sector only, again consistent with our previous findings. PBC has become significant in the health sector after the inclusion of the Right dummy. The health sector receives higher funds in non-election years and funding is reduced in the election year owing to the appearance of outcomes in the long term for this sector.

The finding of the study that the incumbents shift and shuffle spending near elections between different sectors is endorsed by many empirical studies. In a recent study of political budget cycles in expenditure shifting within the context of Brazilian local governments, Klein and Sakurai (2015) find that elections induce first-term but not second-term mayors to increase capital expenditures and decrease taxation and discretionary current expenditure, leaving the total budget balance unaffected, possibly to comply with Brazil's Law of Fiscal Responsibility. These results again suggest that elections might affect the composition of public spending rather than aggregate spending and budget balances. Moreover, the differential time pattern of the electoral cycle for the different sectors found in our study also goes in line with the literature which suggests that a strategy for an incumbent government might be to manipulate different instruments at different times. Treisman and Gimpelson (2001), in a study of Russian elections in the 1990s, find that the choice of policy item to be expanded/manipulated before elections changed from election to election, which is consistent with the view of Brender and Drazen (2005), described previously, that voter experience with electoral democracy renders some types of pre-electoral fiscal manipulation unattractive for the incumbents. The political budget cycle investigation at a sub-national level is a recent trend in the literature of PBCs. Positive support for the existence of the PBC in our data at this level is endorsed by some recent

contributions to this field. The recent empirical evidence generally supports the occurrence of political budget cycles at the local level, and often the occurrence and magnitude of these local political budget cycles are also conditional on institutional and economic-structural factors, including local fiscal transparency (Vicente et al., 2013).

However, there may be some other justifications for the occurrence of budget cycles in specific context of Pakistan. (i) The public projects are used to finance campaigns of the politicians through showing performance to the electorates near elections (ii) or the politicians may be tempted to perform periodically due to the pressure of voters and (iii) also through using the emblazed money procured from these projects for personal gain and campaign financing. In the current Act of the ECP the spending limits on candidates is Rs. 2 million for the Provincial Assembly and Rs. 4 million for candidates of the National Assembly. The ECP believes the election law is insufficient because it does not impose any upper limit on campaign expenses by political parties. Bryan and Baer (2005) reported that low campaign spending limits encourage corruption and circumvention of the system. The attitude that prevails in developing economies is the more you spend the more it secures your future success; if you win, you can use state resources to be reimbursed and fund your next campaign.

In Pakistan, all serious candidates, irrespective of party, routinely cross the limit. The post-election filing of accounts is hardly an issue as creative accounting can save the day. In an informal survey by Dawn, in which scores of candidates belonging to major contesting parties were interviewed, it was found that almost all candidates conducted their campaigning on their own or through resources that they themselves raised. Beyond the government and donors, identifying the money trail is not just

difficult but nearly impossible owing to the cash factor. There is no clear bifurcation in resources raised by candidates and parties. Understandably, all this is not possible without big money coming into play. Locally, funds are moved from one account to another. The cycle of money flow ahead of the general elections begins with the inflow of large sums via both banking channels and informal means into the designated accounts of political parties, their office-bearers and front men of top politicians. The bulk of pre-poll expenses are then financed from these accounts. Money flows are divided along the lines of illicit and lawfully earned money, local and foreign donations and funding, corporate and non-corporate money, money meant for elections but disguised as some other expenditures etc.

Henceforth, we can expect that one source of funding for campaign finance of the ruling party candidates might be the money appropriated from development projects. Lehny et al. (2018) has proposed that the grass-root monitoring in government's private goods provisions is more effective as compared to the public goods. In the infrastructure projects not only the monitoring incentives at individual level are weak but the political incentives for corruption, due to the size of projects, are reasonably high. Similarly, Samuels (2002); B. Olken (2007) and Pande (2007) has also proposed that public projects are subject to the corruption executed for the sake of private gain or to finance political activities. Pakistani Politicians, irrespective of their party platforms, dynastic or geographical base, are notorious for the misuse of public money at large. Corruption charges on public office holders have become the daily talk in Pakistan. National Accountability Bureau (NAB) published a document about 179 mega corruption¹⁸ cases in October 2019. Ironically the majority of

¹⁸ I) Inquiry of 14 million rupees scam against Shah Nawaz Marri, Minister Sports, Balochistan Assembly, Quetta.

politicians making to that list belong to the powerful political families from all over Pakistan.

To conclude, we do find some evidence of an electoral cycle in our data. The cycle is not only more systematic but also it is not confined to just one year as is proposed by the majority of empirical work in this field. Moreover, the extent of the cycle varies from sector to sector. Overall spending is significantly lower in the post-election year which is quite consistent with the existing literature. In the water supply & sanitation sector, the cycle is confined to one year only, in the education sector it goes up to one year before elections. In health, it appears only in the period two years before elections. In the roads and bridges sector, the cycle appears in the mid of the term. The evidence for the electoral cycle in the health sector, however, is not very robust. As far as ideological impact is concerned we have found a strong impact of the party on the budget in the health sector. Party orientation is affecting negatively distribution of development budget in the three sectors of health, education, and roads. The water supply & sanitation sector, however, remains unaffected from party orientation. Spending in this sector due to its targeted and visible benefits seems to be used to meet the re-election incentive of the incumbents.

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- Investigation Against Nawab Aslam Khan Raisanni Ex-Chief Minister Balochistan and Others for misuse of authority
- ii) Inquiry against Firdous Ashiq Awan Ex MNA for Misuse of authority, and embezzlement in movable property
 - iii) Inquiry against Raja Pervez Ashraf, Ex-Prime Minister, for Misuse of authority in the release of funds for the dual road from Sohawa to Chakwal & Mandra to Gujar Khan
 - iv) Investigation against Ch. Shujaat Hussain, Ex Federal Minister, Ch. Pervaiz Ellahi, Gujrat for Misuse of authority, Assets beyond means, 2.428 Billion Investigation under progress
 - v) The investigation against Mian Muhammad Nawaz Sharif, PM and Shahbaz Sharif, CM and others for Misuse of authority in the construction of Road from Raiwind to Sharif Family House and thus misappropriated Rs. 125.664 Million
 - vi) The investigation against Mian Nawaz Sharif ExPM and others for Illegal appointments in FIA – Misuse of authority
 - vii) Investigation Against Aftab Ahmed Khan Sherpao, Ex-Chief Minister KP / Ex Federal Interior Minister / Sitting
 - viii) MNA for Accumulation of Assets Beyond Known Sources of Income
 - ix) Inquiry against Ihsan Shah Ex-Minister Authorities of Industries & Commerce for Misuse of Authority

2.6 CONCLUDING REMARKS

The political business cycle literature has advanced the proposition that, in a democratic environment, policy instrument behavior may be related to the timing of elections. This paper has focused on the electoral budget cycle where the incumbents may manipulate the pattern of fiscal and monetary indicators. The incentive to manipulate public resource distribution is largely to enhance their re-election chances. This empirical study has utilized observations on the provincial development budget for 29 electoral districts of the Punjab province of Pakistan to test for the existence of manipulative electoral budget cycles. The system GMM technique has been employed to control for the potential endogeneity of the explanatory variables. The basic conclusions that can be drawn from this analysis are favorable to the electoral budget cycle hypothesis. Development expenditures in the study period were reduced in the post-electoral period and increasing gradually after that. The cycles are not only systematic but also go beyond the election year. Spending is systematically reduced in post-election years and then increased gradually. The cycle of positive spending is confined to the election year in the water supply and sanitation sector, one and two years before elections in the education sector and three years before the elections in the roads and bridges sector. The health sector, however, seems to be less attractive for enhancing re-election prospects in our case. Thus, elections have a differential impact on the components of provincial government development expenditure. Moreover, we have found a negative impact of the major ruling party (Pakistan Muslim League (N)) on the development spending in our data. Future research in this area can attempt to find out the institutional and structural causes of this strong electoral cycle in Pakistan. To formulate better policies for effective resource

distribution that are not distorted by the political motives, it is essential to find out the causes which pave the way for the occurrence of the political budget cycle.

Essay 3

Impact of Dynasties on the Distributive Benefits and Policy Outcomes: Empirical Evidence from Punjab, Pakistan

3.1 INTRODUCTION

Institutional structures of the economies are generally believed to affect the policy choices of elected officials. Extensive literature in the political economy field assumes all politicians to work in a similar manner irrespective of their character (Besley, 2005; Jones & Olken, 2005). However, in the democratic policymaking process, the personal characteristics of the elected officials may also play an important role in determining their policy actions. There is a variety of dimensions on which these personal characteristics¹⁹ may vary. For example, the preferences (personal ideology), political competence, gender, and race, etc. are some of the dimensions (Levitt, 1996; Lublin, 1997; Caselli & Morelli, 2004; Chattopadhyay & Duflo, 2004; Besley, 2005; B. A. Olken, 2006). Most recently, theoretical and empirical research has focused on the familial base of the politicians as an important personal dimension.

Political dynasties inherit the political resources from their predecessors who had occupied similar political positions in the past. Although non-democratic societies

¹⁹ Besley (2005) notes that political competence ‘could include intangible leadership skills, like persuading others in debate or inspiring trust, and also more standard analytical skills, such as spotting flaws in policy proposals’.

² In the United States, (Hess, 1966) notes that ‘there have been some 700 families in which two or more members served in Congress, and they account for nearly 1,700 of the 10,000 men and women who have been elected to the federal legislature since 1774’. The proportion of dynastic legislators has decreased over the years (Clubok et al., 1969), yet even after the 1960s, 7% of the US House members can still be classified as dynastic (Dal Bó et al., 2009). In Japan, about one-third of the legislators in the Lower House between 1970 and 2000 had relatives who served in the national parliament (Taniguchi, 2008). Another example is Mexico, where 20% to 40% of the politicians at the national level has family ties to other politicians (Camp, 1995). In Italy, some famous politicians are the relatives of other politicians (Chirico & Lupoli, 2008). In the Philippines, about 40% of national-level legislators in the 2000s are dynastic (Mendoza et al., 2013). Besides, India has a sizable number of dynastic politicians in the parliaments.

provide more space for political dynasties to thrive yet many democratic countries around the world are now dominated by these powerful political families. The political and economic consequences of these dynastic legislators have not been studied extensively in the existing literature so far. It is important to study the impact of these dynasties on the distributive benefits and their resulting economic outcomes. It is a widely believed fact nowadays that these political dynasties possess enough political capital to retain and regain power. The legislators in the US who served office multiple times were found to have a positive impact on the winning probability of their relative in future elections in a study by Dal Bó et al. (2009). Name recognition and ties with the political machinery helps dynasts to concentrate sufficient political capital which is inherited by the successors within a family and perpetuates the vicious circle of power as a result. Feinstein (2010) claimed that the brand name advantage helped dynasts to gain an additional 4% two-party vote shares in congressional elections.

The question here arises that what will be the impact of these family politicians (with significant electoral and bargaining advantages) on the political competition. Asako et al. (2015) pioneered in this dimension and introduced a theory for the political consequences of familial politics. They proposed a formal model and empirical evidence to test the influence of dynasties on political competition and performance such as on electoral competition, policy choices and economic performance. They combined the citizen candidate model of Osborne and Slivinski (1996) and Besley and Coate (1997) and the legislative bargaining model of Baron and Ferejohn (1989). The model assumed that being dynasts increase the bargaining power and lowers the cost of running the office and predicted that dynastic legislators bring more distributive benefits (public resources) to their constituencies in

comparison to their non-dynast counterparts. Secondly, the winning probability and vote share of the dynastic candidates is significantly higher than the non-dynast contenders. And most importantly the economic performance is negatively affected by these dynasts despite extracting larger distributive benefits to their constituencies. The reason for this harmful influence on economic growth is that only a small fraction of people are targeted by the dynastic families to extend distributive benefits. Kitschelt and Wilkinson (2007) have proposed that poor performance in the provision of public goods is also caused by the prevalence of patron-client ties in the elite or dynasty dominated political systems. Since the political families can avoid electoral defeat as long as they can maintain, predict, and monitor the behavior of their targeted clients, they will not promote the provision of the public goods. Williams (2017) has proposed political corruption as one of the explanations for the incomplete development projects in developing countries. This is an additional reason for the poor service delivery in developing countries.

This paper is an attempt to test the predictions of the model proposed by Asako et al. (2015) empirically using data on politicians from Punjab, Pakistan. The paper is designed specifically to test the impact of dynasties on the distributive benefits (fiscal transfers) and the policy (economic) outcomes in Punjab. Pakistan is a parliamentary democracy with an elected national assembly and provincial assemblies for each province. Currently, there are 272 seats in national assembly allocated on population basis amongst the provinces and other units. The government is formed by the party with the majority or by a coalition which selects Prime Minister of the country from members of the assembly. Provinces are governed by respective chief ministers who are selected by their provincial assemblies elected through adult

franchise²⁰. Pakistan's democratic system has been interrupted by military coups three times. Military elite class has dominated Pakistan's political history since its existence. However, established and influential political families have also played a crucial role in shaping the political landscape of Pakistan. Zahid (2013) has documented that the political setup of Pakistan and particularly Punjab is demarcated by the prevalence of dynasties. Dating back to the first elections in the 1970s, political dynasties are a pervasive form of political transition in Pakistan (Cheema et al., 2013). Land owning class with rural background dominates old dynastic families. However, after 1980 some business families from urban areas have also entered into this power structure. These families were able to build vote banks using their money, patronage, and connections. Some of the political families have also been successful in securing power due to biradari (clan) affiliations, as many voters are likely to vote based on these affiliations.

Herald (2013) data has shown that Punjab has 379 out of 597 dynastic families in Pakistan which accounts for almost 63% of the total. Almost 47% of the legislators in the provincial assembly of Punjab in three general elections held in 2002, 2008 and 2013 were dynastic. Moreover, dynasties in Punjab province are largely dominated by the feudal class and big landlords. 35% of the legislators from Punjab in 2002, 2008 and 2014 elections were from landowning class. Feudal and rural-based dynasties are supposed to deter socio-economic progress more heavily than the urban-based dynasties. Rapid urbanization in Punjab was expected to break the vicious circle of ruling elites; however, dynasties prevail in urban politics of Punjab as well though with a lesser influence of feudal mindset. Therefore, Punjab political dynasties present an intriguing situation to test the predictions of the dynastic family model of Asako et

²⁰ A system of voting where every adult male or female gets the right to vote

al. (2015). The data on development spending in the education, health, roads and water supply & sanitation sectors at the district level made by the provincial government of Punjab is used to test dynastic MPAs impact on the distributive benefits. Secondly, to test the impact of dynastic legislators on the economic outcomes we have used district-level data on school enrollment rates, number of patients treated in Government hospitals, number of beds in Government hospitals and length of metallic roads. Previously, an event-based analysis has been done by Ali (2016) using development spending data under the Peoples Work Program (PWP) from 2008-2013 for Pakistan. The study found less development spending in general by dynastic politicians and after floods in particular. Dynastic politicians from the landowning class were found to spend more than other dynastic politicians while the case was vice versa in the case of biradri based dynastic politicians.

In this paper, we have extended the analysis in many aspects. Firstly, we extend our analysis to the four major categories of development budget allocated under the annual development program of Punjab such as education, health, roads, and water supply. Secondly, we have extended the analysis to three general elections held in 2002, 2008 and 2013. And thirdly, we have tested the economic performance of the districts under dynastic legislators as well. The analysis is divided into three parts; (i) we have provided a detailed descriptive analysis to explain the structure of political dynasties, rural-urban divide and the socio-economic situation of the province using some indicators from six Pakistan social and living standard measurement surveys (conducted from 2004 to 2014, in alternate years). (ii) We have tested the impact of dynasties on development budgets for four sectors of education, health, roads & bridges, and water supply & sanitation. (iii) To investigate the impact of dynasties on the actual performance indicators, we have examined the effect of

dynasties on the school enrollment, the number of patients treated in government hospitals and the length of paved road. To avoid the issue of endogeneity in our explanatory variables, we have used the System GMM technique for the estimation of our equations.

The evidence from the first part shows that the spread of dynasties in the province is almost uniform across elections and rural and urban districts. All the political parties of Pakistan are equally represented by the dynastic politicians. Rural areas are heavily dominated by the landowning politicians and consequently performing lowest on the socioeconomic indicators. The least performing districts on literacy, source of drinking water, fuel used for cooking and lighting are largely Rajanpur, Muzaffargarh, and Dera Ghazi Khan. These districts are not only highly ruralized but also dominated by the feudal class politicians. The urban districts like Lahore, Faisalabad, Rawalpindi, and Gujranwala are not only relatively developed but also have the least influence of feudal legislators. However, prominent urban dynasties from Lahore are facing corruption charges for embezzling the public funds; this evidence puts questions on the performance of urban dynasties equally. Therefore, dynasties either feudal or urban seem to be harmful to the development of any area.

The finding from the second part shows that the districts dominated by the dynastic legislators more heavily were able to get more distributive benefits. The finding is consistent with the Asako et al. (2015) model that the dynastic legislators have more bargaining power than the non-dynastic legislators which helps them to draw more resources towards their home constituencies. As far as economic outcomes are concerned, dynasties are affecting them inversely. All three indicators from the health, education and roads sector are significantly affected by the presence of

dynastic legislators. The pattern of increased spending with null effects on public services is consistent with previous work by Caselli and Michaels (2013) and Monteiro and Ferraz (2010).

We propose three mechanisms in the specific context of Pakistan to explain our finding that irrespective of spending larger amounts, economic indicators show no improvement in the presence of dynasties in the spirit of Asako et al. (2015) and Williams (2017). The first one is the discrepancy in the budget and revised estimates of the public allocations in Pakistan. Development budget in Pakistan is normally reduced during the fiscal year to compensate for the current expenditures which hinder 100% realization of the development plans. Secondly, the corruption and embezzlement in public projects by the political representatives may explain the above result. We have provided evidence (in section 3.5 below) that the majority of the influential dynastic families are facing or have been convicted for misusing the public money for private gains. The third reason could be the patron-client nature of dynastic persistence in Pakistan. The politicians in Pakistan use public funds to benefit a specific group of people (the clients) which results in worse economic outcomes. Ramzan Sugar Mills case against Shahbaz Sharif, Ex-Chief Minister Punjab and his son Hamza Shahbaz is a prime example²¹ of this strategic embezzlement to benefit the few at the cost of public welfare at large.

The rest of the essay is organized as follows. Section 3.2 reviews the relevant literature about dynasties and their socio-economic consequences. In Section 3.3 we have provided descriptive evidence about demographic, economic and political characteristics of the Punjab province using Pakistan Social and Living Standards

²¹ The National Accountability Bureau in February (2019) had filed a reference against Shahbaz Sharif and his Son Hamza Shahbaz alleging that the former chief minister of Punjab misused his authority by using public funds for the construction of a bridge to facilitate the Ramzan mills, owned by his sons. Shahbaz Sharif was also accused of influencing authorities to award contracts for a government-run housing program for low-income citizens to a company with which he had political affiliations.

Measurement Surveys (2004-2014). Data and methodology are given in section 3.4. Empirical findings of the study and conclusion are given in sections 3.5 and 3.6 respectively.

3.2 REVIEW OF LITERATURE

Seminal work in the field of sociology developed by Michels (1915); Mosca (1966) and Pareto (1968), and, more recently, Putnam (1976) have attracted social scientists to study the impact of dynasties and elite capture on policymaking and economic outcomes. Political Dynasties influence and have been influencing policymaking, the political institutions and the constitutional design of several countries. Classical elitism theories postulate that the essence of liberal democracy is sacrificed in a political system dominated by the few elites constituting a very small share of the population. Persistence and legitimization of elite dominance lead to the iron law of oligarchy (Michels, 1911)²². The elites although small in number are capable of controlling an unorganized majority because the ruling class coming from a specific bloodline is perceived as intellectually, economically, or morally superior by the masses (Mosca, 1939). Thus the basic standards of proper and ethical behavior of dynastic politicians are superseded by the long-lasting realms of power, perpetuated by lack of accountability. In sum, a close-knit group of rulers from specific families is created by the elite-dominated political systems. These systems lack any checks and balances or accountability (vertical or horizontal) from the unorganized masses.

²² For (Michels, 1915), “it is inevitable that any organization, and by extension, any political system, inevitably ends up being ruled and run by the elite, who prioritize the perpetuation of their hold on power. Any semblance of promoting the public utilitarian good is only a disguise for creating a bureaucratic infrastructure that will enhance the elite’s centralized control over the state.”

Acemoglu and Robinson (2008) have modeled and tested these theories both empirically and formally in modern-day politics. They have established that the strength of political and economic institutions is affected adversely by the dominance, perpetuation, and persistence of elites. For example, Acemoglu and Robinson (2008) have documented that the elite-dominated system in Latin America, legislation against the interests of the labor and working-class were produced. Similarly, Paige (1998) and Zeitlin and Ratcliff (1988) have shown that in Chile, Mexico, and the rest of Central America laws to repress the interests of the laborers and farmers were framed under the influence of elite class. This is called the phenomenon of captured democracies²³ where laws are passed to safeguard the interests of the ruling elites (Querubin, 2011).

Societies all over the world have elements of dynasties in their ruling class which constitute a non-trivial part of the elites. Several political bodies also possess specific family names identified by the political science researchers. For example, Schmidhauser (1959) have analyzed the composition of the US Supreme Court, Barber (1965); Derge (1959); Seligman (1974); Matthews (1984), and Kurtz, (1989) have explored the composition of several state-level legislatures. Clubok et al. (1969); Laband and Lentz (1985), and Feinstein (2010) have studied the members of the US Congress. A brand name advantage gives dynastic politicians a competitive edge over the non-dynastic politicians. In the field of economics, the seminal paper is Dal Bó et al., (2009) which studied the US Congress data from 1789 to 1996. The study documents that once established, political dynasties are successful and persistent independently on the factors related to family's quality and candidates' political human capital. Although long-lasting policies are developed by these

²³ A pattern of 'captured democracy' arises, whereby democracy endures, but the elite can have a disproportionate effect on the equilibrium of economic institutions" (Acemoglu & Robinson, 2008)

dynasties yet funds raised for political campaigning based on their experience and capacity don't bring electoral results. Local political connections and name recognition are crucial to establishing dynasties. Shortly *power begets power*.

Evidence of dynastic politics is not limited to the analysis of the US political institutions. We find studies which have found evidence for the dynastic politics and extended the research to its socio-economic consequences. To name a few such as Rossi (2016) for Argentina, Daniele and Geys (2015); Daniele and Vertier (2016) for Italy, Querubin (2010, 2013) for the Philippines, Smith and Martin (2017) for Ireland, Patrikios and Chatzikonstantinou (2015) for Greece, Fiva and Smith (2018) for Norway, Tantri and Thota (2017) for India. Mendoza et al. (2013) in their study of Philippine dynasties, have proposed three mechanisms through which political dynasties generate negative political consequences. First, the hierarchical culture nurtured due to dynasties creates a norm of deference which hinders electorates from voicing their demands, needs, and expectations to politicians. Second, excessive accumulation of power over time by the dynastic families reduces fear of losing elections or facing administrative sanctions from other state authorities in case of violating the rule of law. Third, since the leaders are selected preferentially from dynastic families rather than on meritocracy rules, inexperienced politicians are selected with no or limited capacity to govern as a consequence.

Some papers on this strand of literature also explore how dynastic persistence and dynastic politics affect policymaking and economic outcomes by looking at the local political bodies. Asako et al. (2015) proposed a theoretical model of dynasties and claimed that dynastic legislators can draw more distributive benefits to their constituencies. However, the impact of these dynasties on economic performance is negative because they use public resources inefficiently and target a specific faction

of the population. They tested their predictions by using Japanese data from 1997 to 2007. Japanese dynasts in local governments enjoy higher electoral success and are better at channeling transfers to their districts. However, the dynasties were affecting the growth of their municipalities negatively. Similar results are found in the Bragança et al. (2015), who explored data on Brazilian municipalities, finding that polities with higher rates of dynasts experience make larger public spending, especially in infrastructures, but that levels of spending are not associated with better health, education, or economic performance.

Scholars argue that the public good provision is affected badly by the dominance of political dynasties in the political arena. The logic proposed for this pernicious effect on the provision of the public goods is that the accountability to voters is negated by the concentration of power within one family. Moreover, high-quality and reform-oriented candidates also fail to defeat such powerful dynasts. Another cause for the low performance of such dynasties is the prevalence of patron-client relations where dynast politicians will provide the public goods only induced by the election timings instead of performing throughout their tenure. Henceforth, if pedigree and client-patron relations determine reelection fortune rather than the consistent performance of the representative, the incentives for long term policy reforms and development projects are killed. Pork money allotments or the manipulation of public funds is also encouraged in this system (Kitschelt & Wilkinson, 2007). All this may lead to misappropriation of the resources which otherwise would have been devoted to the economic and infrastructure development programs. Political dynasties, therefore, are believed to exert harmful effects on the quality of governance and public good provisions. Querubin (2011) documented that since the governance experience of the new blood politicians is limited, the quality of

political and economic outcomes suffers tremendously. Preservation of status-quo lead to a lack of reform-oriented policies aimed at political, economic, and human development.

Dynastic presence, however, may have a positive impact²⁴ on the provision of public goods because policy continuity is required to safeguard the familial lines in politics (Simbulan, 2005). For example, if a farm to market road project was initiated by the father it will be an inherently public good for the son. The son will have an incentive to continue this project for advancing his re-election fortune. Moreover, the son is more likely to expand such projects to safeguard his family's legacy through sponsoring large infrastructure projects and to secure votes. Hence a responsible and accountable leadership is expected to be developed where the effective provision of the public goods is expected from the political dynasties by the voters. Mendoza et al. (2013) has documented that political dynasties may lead to better overall outcomes for their jurisdictions because of the legacy-related motivations they possess. The recognition of the economic benefits associated with the growth-oriented policies and strategies, the rent-seeking dynastic politicians may also adopt growth and reform-oriented policies to bring about considerable and sustainable economic growth in their jurisdictions. The longer the time horizon, the dynasties will tend to enact progressive reforms and effective public policies. On the other hand, the non-dynast candidates with no incentives to preserve family legacy have greater temptation to indulge in rent-seeking behavior or political banditry. Moreover, they are not expected to pursue long run projects or policies because of shorter tenures with no desire to perpetuate the political careers of future political progeny.

²⁴ Dynastic politics creates incentives for politicians to be more forward-looking, caring for the long-run goals, and limits moral hazard (Olson, 2000).

Besley and Reynal-Querol (2013, 2017) find that dynastic selection can play a role in improving economic performance when institutions for controlling politicians are weak and policy-making skills are persistent within a dynasty. Selected dynasties will survive only when their economic performance is strong enough and for this selection process, better economic performance is observed among countries with dynastic leaders. Crowley and Reece (2013) explore the impact of dynastic governors in the US states for the 1950-2005 period; their results indicate that the opportunistic behavior of incumbents in their last mandate is mitigated by dynasts' concerns for the political success of their offspring. Dynastic governors thus increase incumbents' accountability. Rivera (2015) uses electoral and political data during Victorian Britain and shows how parties rely on dynasts when their local organizations are weak. Lately, Folke et al. (2016) find that a female candidate is more likely to enter into politics in systems where the dynastic advantage is pronounced. A recent review of the literature on this subject has just been published (Geys & Smith, 2017).

The discussion so far depicts that both positive and negative incentives may influence the performance of the dynastic politicians. Henceforth, the ambiguity about the role of dynasties creates space for further investigation in this field specifically in the political systems dominated by the oligarchies and elites. As far as Pakistan is concerned, the political system portrays a prime example of elite capture. Mahbub ul Haq (the chief economist of the planning commission) in the 1960s claimed that 66 percent of the industrial wealth and 87 percent of the banking and insurance of Pakistan is possessed by only 22 families. Feudal landowners or high caste as per Gazdar's (2000) classification dominate the rural areas of the country. These landowners have dominated all the government coalitions made in Pakistan.

The political structure of Pakistan is captured by elite families and oligarchies. Keefer (2007) proposed that broad public policies are not promised by the politicians in Pakistan. Because their promise credibility is largely based upon patron-client ties supported through targeted transfers to the voters. He also suggested that Pakistani political parties differ very slightly or rarely on the broad policy promises or policy stances. Hence political competition on bases of broad policy issues is almost absent which leads to the expectation for low provision of broad-based public goods and more provision of private or targeted goods in such environments. A World Bank report in 2002 suggested that in Pakistan people had almost 25% higher access to potable water as compared to the countries with similar development and demographic indicators. The targeted benefits attached to the potable water with immediate accessibility and visibility to the electorates was the potential cause for this edge of Pakistan over the other comparable countries. On the other hand, Pakistan was 20% below the expectation in literacy rate as compared to other countries. Easterly (2003) proposed a political economy hypothesis for poor service delivery and poor performance in education and health sectors in Pakistan. Pakistan's growth without development is primarily due to the dominance of the elite who do not support human capital investment in the masses. Bourguignon and Verdier (2000) have argued that widespread education is not supported by the oligarchies due to the fear of high demands for political power by the educated public as a result. The elite enforces their preferences on under-investment in human capital by keeping social service delivery highly centralized, with all decisions on the allocation of resources taken at the top.

Previously an event-based analysis has been done by Ali (2016) using development spending data under Peoples Work Program (PWP) from 2008-2013 for

Pakistan. The study found less development spending in general by dynastic politicians and after floods in particular. Dynastic politicians from the landowning class were found to spend more than other dynastic politicians while the case was vice versa in the case of Biradri based dynastic politicians. However, no study so far from Pakistan has been done to formally test the distributive and policy outcomes of dynasties. This study is related to the strand of literature that tries to capture the impact of dynasties on distributive benefits and policy outcomes. We are specifically interested in testing the theoretical predictions of the Asako et al. (2015) model in the context of Punjab Pakistan.

3.3 SOME FACTS ABOUT SOCIOECONOMIC CONDITIONS AND DYNASTIES IN PUNJAB DISTRICTS

Pakistan's electoral history is not good in the sense that the first general elections were held in 1970 almost 23 years after its creation in 1947. A multi-party system characterizes the political culture of Pakistan with a small number of national and a large number of regional parties. Punjab is the largest province of Pakistan in terms of population and 2nd largest in terms of area. Almost 55.6% of the total population of Pakistan resides in Punjab. The political culture of Punjab is highly dominated by dynastic families. Herald (2013) data has shown that Punjab has 379 families out of 597 dynastic families in Pakistan which accounts for almost 63% of the total. These dynasts become an impediment in the way of the non-dynast aspirants to public office. The dynasties by their very nature and to safeguard their interests undermine all other concerns related to the political party, public policy, and development-related matters. The lives of the 176 million people in Pakistan have been affected by the policies, programs, and legislation made by approximately 400

dynastic political families over the years. Punjab national assembly elections show that almost two-thirds of the elected legislators and around half of the top three contestants from 1985 to 2008 were dynast (Cheema et al., 2013). Moreover, the dynasties in Pakistan have remained remarkably stable. Both blood and marriage ties had kept these dynastic organizations held together in Punjab. Political parties are not organized based on ideology, ethnicity, class and/or programmatic platforms but the dynastic networks. Since the electoral success substantially depends upon dynastic origin, tremendous power is enjoyed by the political dynasties over the political system. Almost two out of three contests between the dynastic and non-dynastic contestants are won by a dynastic contender since 1985. Furthermore, non-dynastic contenders failed to give an effective competition to the dynastic candidates and the real competition was actually between members of dynastic families. Cheema et al. (2013) have also documented that the generational transition has also been made successfully by the dynasties in Punjab. This fact points to the resilience and stability of this enterprise that owes their success to more than just the personal ability of their first-generation politicians. A prime example of this phenomenon is that when the bachelor degree requirement was imposed in the election 2002, almost 50% of the dynastic families from Punjab introduced a new family member into politics from which approximately 35% achieved success as well.

Henceforth, the “electable” in Punjab are the dynasties with whom the political parties plan their win over. Consequently, political parties are more interested in ally with the dynasts rather than building party machinery around a dedicated party cadre. Both the fragile organizational structure of the party and the success of the dynast are fed by this vicious circle (Cheema et al., 2013).

The political capital gained by powerful families helps them to perpetuate their power without performing in economic and governance fields. However rapid urbanization in Pakistan and specifically in Punjab may have reduced the dynastic persistence in the province. Almost 40% of the population in Pakistan now resides in urban areas. Punjab has experienced rapid urbanization in the previous decades.

Table 3.1: Population and Union Councils in Punjab Districts

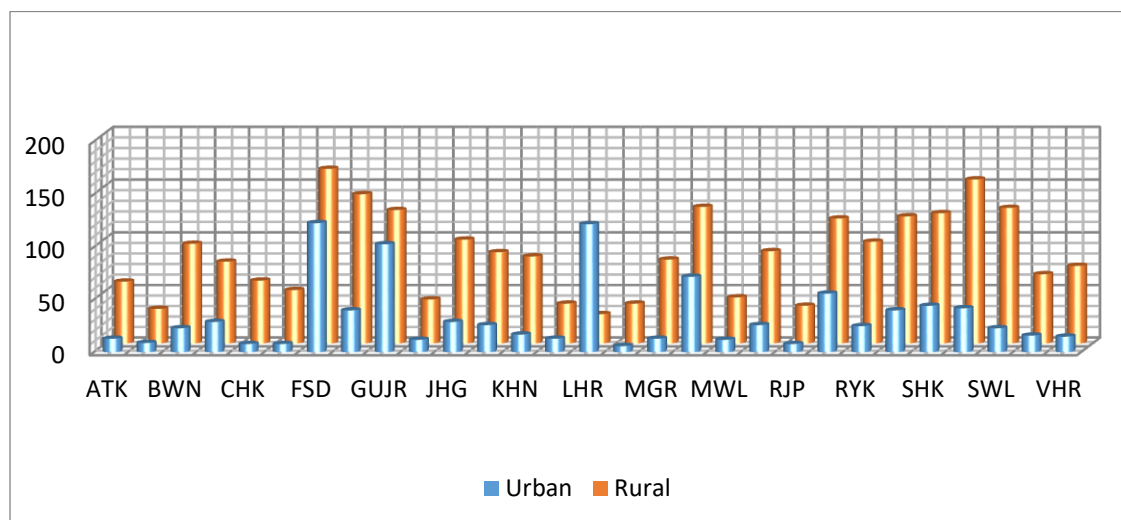
| Districts | Variable | Mean | Std. Dev. | Min | Max |
|-------------------------|----------------------|---------|-----------|---------|---------|
| Median(20) (Obs=120) | Total Population | 2759.42 | 1092.28 | 1036.00 | 5212.00 |
| | Urban Population | 621.59 | 281.31 | 201.00 | 1160.00 |
| | Rural Population | 2135.47 | 852.45 | 774.00 | 4069.00 |
| | Total Union Councils | 115.42 | 48.03 | 42.00 | 202.00 |
| | Urban Union Councils | 26.32 | 14.99 | 9.00 | 72.00 |
| | Rural Union Councils | 89.25 | 35.37 | 33.00 | 156.00 |
| Rural(5) (Obs=30) | Total Population | 6246.42 | 1672.19 | 4028.00 | 9348.00 |
| | Urban Population | 3702.00 | 1991.58 | 2241.00 | 7684.00 |
| | Rural Population | 2544.42 | 947.81 | 1391.00 | 4152.00 |
| | Total Union Councils | 211.00 | 54.68 | 150.00 | 289.00 |
| | Urban Union Councils | 101.00 | 27.76 | 56.00 | 123.00 |
| | Rural Union Councils | 110.00 | 51.66 | 28.00 | 166.00 |
| Urban(4) (Obs=24) | Total Population | 1993.53 | 857.95 | 1235.00 | 3862.00 |
| | Urban Population | 264.73 | 111.91 | 150.00 | 500.00 |
| | Rural Population | 1728.83 | 746.94 | 1085.00 | 3362.00 |
| | Total Union Councils | 61.60 | 18.49 | 44.00 | 93.00 |
| | Urban Union Councils | 8.60 | 2.37 | 6.00 | 13.00 |
| | Rural Union Councils | 53.00 | 16.37 | 36.00 | 80.00 |

Source: Author's Calculation using data from Punjab Development Statistics (2002-2014)

Figures 3.1 and 3.2 below show the distribution of urban and rural union councils and the population of 29 districts of Punjab. Most of the districts in Punjab are dominated by rural areas and councils. We can observe that all the districts in Punjab have a higher proportion of rural councils than the urban councils. Faisalabad, Gujranwala, Lahore, Multan, and Rawalpindi have a relatively higher proportion of urban councils while Chakwal, Dera Ghazi Khan, Layyah, and Rajanpur have the least urban councils.

Moreover, from 29 districts, only Lahore has a higher number of urban councils than the rural union councils in absolute terms. Similar is the situation in terms of the distribution of population across rural and urban areas of Punjab.

Figure 3.1: Urban/Rural Union Councils in Punjab

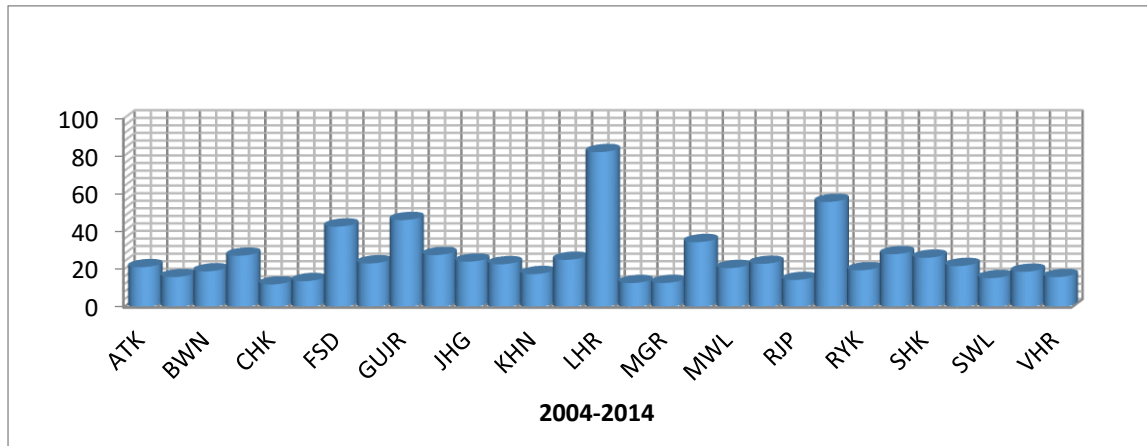


Source: Author's Calculation using data from Punjab Development Statistics (2002-2014)

The majority of the population in Punjab still resides in rural areas in absolute terms. However, the ratio of urban population has increased more rapidly in the districts of Faisalabad, Gujranwala, Lahore, Multan, and Rawalpindi. Figure 3.2 below depicts the state of urbanization in 29 districts of Punjab more clearly. Five districts of Punjab Rajanpur, Chakwal, Dera Ghazi Khan, Layyah, and Muzaffar Garh still have less than 15% of their population residing in urban areas. On the other hand districts of Lahore, Faisalabad, Rawalpindi, and Gujranwala have almost 40% or above the urban population as compared to their total population. While in the remaining 20 districts the ratio of urbanized population is between 15-35 %. For this descriptive analysis, we have coded the top four districts as the urban, bottom five as rural and middle 20 districts as median districts based on their urbanization intensity. The urban population as a percentage of the total population in Lahore is highest. Eight districts have their urban population less than 20% of the total population. Only

four districts have more than 40% population residing in urban areas as the data from 2004 to 2014 depicts.

Figure 3.2: Urban Population as a Percentage of Total Population



Source: Author's Calculation using data from Punjab Development Statistics (2002-2014)

Urbanization in the Punjab province has been rapid yet the majority of the districts are still ruralized as we have seen in the above discussion. The question here arises that whether the political characteristics in highly urbanized and highly ruralized districts differ significantly or not? Zahid (2013) has documented that the political setup of Pakistan and particularly Punjab is demarcated by the prevalence of dynasties.

Dynastic politics is a norm rather than an exception in Pakistan. These political families largely have a feudal and tribal base and are more prevalent in rural areas. It is important to distinguish here the difference in urban politics or dynasties in the face of urbanization trends in Punjab. The question is whether the structure of politics is different in urban areas or the same feudal mindset prevails in urban politics as well? Urbanization has created higher demands for urban amenities like housing, water, basic education and health, electricity, transportation, security and consequently greater pressure on the ruling representatives to perform. Moreover, since the urban population has greater awareness about the political and economic

conditions, the politicians fear protests and retaliation in case they fail to deliver their promises. Henceforth the public representatives from urban areas irrespective of their dynastic base will be under pressure to deliver on some of their promises.

Table 3.2: Summary Table of Personal Characteristics of MPAs in Punjab

| | Variable | Obs | Mean | Std. Dev. | Min | Max |
|-----------------------------|--|-----|-------|-----------|-------|-------|
| Rural Districts | The proportion of Dynastic Legislators | 54 | 0.41 | 0.15 | 0.00 | 0.75 |
| | Affiliated With the Government | 54 | 0.67 | 0.23 | 0.21 | 1.00 |
| | Agriculturalists | 54 | 0.35 | 0.26 | 0.00 | 1.00 |
| | Businessman | 54 | 0.19 | 0.17 | 0.00 | 0.56 |
| | Agri-cum-Businessman | 54 | 0.05 | 0.07 | 0.00 | 0.25 |
| | Other Professions | 54 | 0.18 | 0.16 | 0.00 | 0.50 |
| | Lawyers | 54 | 0.10 | 0.09 | 0.00 | 0.29 |
| | Female MPAs | 54 | 0.39 | 0.83 | 0.00 | 3.00 |
| | The average age of MPAs | 54 | 42.91 | 4.52 | 35.82 | 59.50 |
| | Average Education Years of MPAs | 54 | 12.23 | 1.81 | 8.00 | 15.00 |
| Median Districts | The proportion of Dynastic Legislators | 120 | 0.50 | 0.18 | 0.00 | 0.92 |
| | Affiliated With the Government | 120 | 0.64 | 0.23 | 0.00 | 1.00 |
| | Agriculturalists | 120 | 0.36 | 0.22 | 0.00 | 1.00 |
| | Businessman | 120 | 0.16 | 0.14 | 0.00 | 0.50 |
| | Agri-cum-Businessman | 120 | 0.06 | 0.10 | 0.00 | 0.38 |
| | Other Professions | 120 | 0.19 | 0.19 | 0.00 | 0.71 |
| | Lawyers | 120 | 0.10 | 0.11 | 0.00 | 0.40 |
| | Female MPAs | 120 | 0.53 | 0.98 | 0.00 | 4.00 |
| | The average age of MPAs | 120 | 44.67 | 4.83 | 36.00 | 61.60 |
| | Average Education Years of MPAs | 120 | 11.72 | 2.19 | 6.75 | 15.00 |
| Urban Districts | The proportion of Dynastic Legislators | 24 | 0.39 | 0.11 | 0.24 | 0.57 |
| | Affiliated With the Government | 24 | 0.69 | 0.25 | 0.21 | 1.00 |
| | Agriculturalists | 24 | 0.18 | 0.13 | 0.04 | 0.47 |
| | Businessman | 24 | 0.33 | 0.13 | 0.12 | 0.56 |
| | Agri-cum-Businessman | 24 | 0.05 | 0.04 | 0.00 | 0.14 |
| | Other Professions | 24 | 0.16 | 0.06 | 0.04 | 0.29 |
| | Lawyers | 24 | 0.12 | 0.09 | 0.00 | 0.29 |
| | Female MPAs | 24 | 0.75 | 1.11 | 0.00 | 3.00 |
| | The average age of MPAs | 24 | 42.49 | 3.48 | 37.28 | 52.38 |
| | Average Education Years of MPAs | 24 | 12.60 | 1.31 | 9.18 | 14.32 |

Source: Author's Calculation using data from the Provincial Assembly of Punjab (2002-2013)

The question remains whether the mindset of the dynastic families based in urban areas and from business class will be different from the typical mindset of retrogressive politicians. The variation within the dynastic families on bases of their origin becomes important in this context. The majority of the dynastic families in Punjab belong to the landowning class with a typical feudal mindset. These families draw their power from the large tracts of lands they own. Other families are running politics based on their Biradri, clans, caste, and religious factions. With rapid urbanization in Punjab during the last decades, urban class politicians have also emerged on the political scene like the Sharifs from Lahore. Pakistan Muslim League Nawaz (PMLN) was purely an urban-based party at its inception. Urban politicians draw their power mainly from the money they have accumulated from their business. Pakistan People Party (PPPP) is another example from Pakistan. PPPP was formed by Zulfikar Ali Bhutto as a Centre-left and social-democratic political party by raising the slogan of “Roti, Kapra & Makan”(basic needs provision) in 1967. The party set history in Pakistan by defeating the so-called "electables” and powerful familial politicians in general elections of 1970.

Figure 3.3: Party Representation in Punjab Assembly Election and Regime Wise

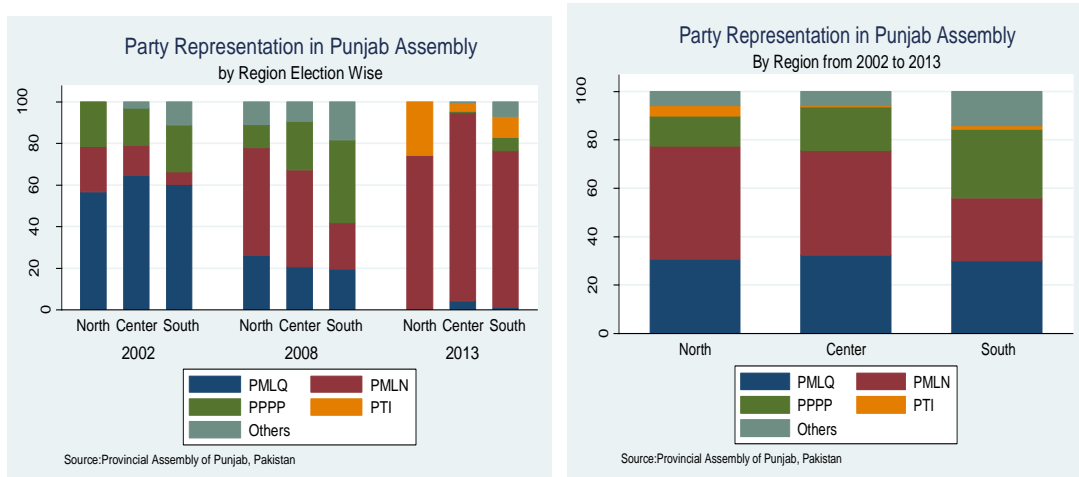


Fig (a)

Fig (b)

The figure 3.3(a & b) shows the region-wise party position from 2002 to 2013 elections. Pakistan Muslim League Quaid-e-Azam(PMLQ) swiped elections in 2002 in three elections equally. PMLN fared better in 2008 and got a landslide victory in 2013 general elections in Punjab. The party representation in the legislative assembly shows massive variation across elections but not across regions. The point to consider here is that although party representation has changed significantly over the three elections however the incidence of the dynasty has remained almost stable.

Figure 3.4: Incidence of Dynasties in Punjab

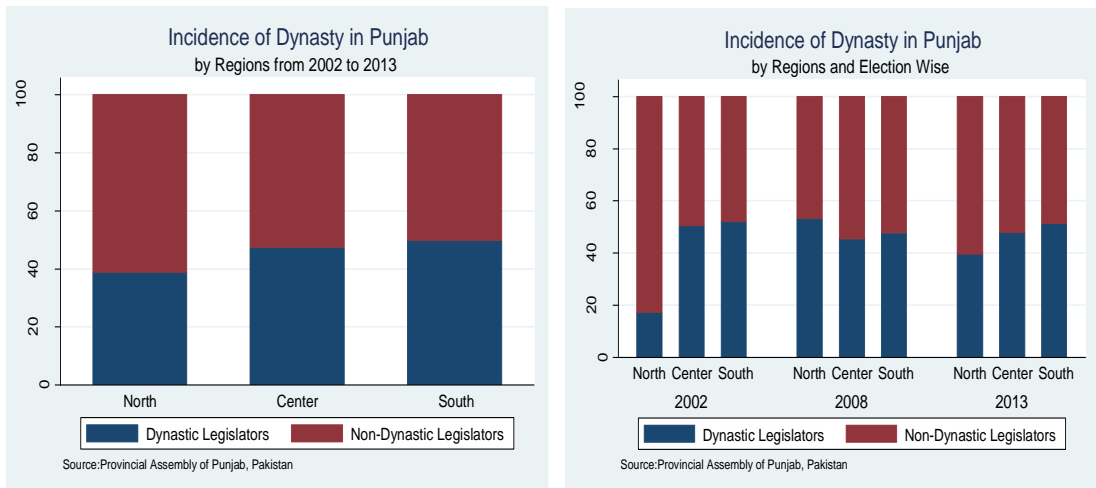
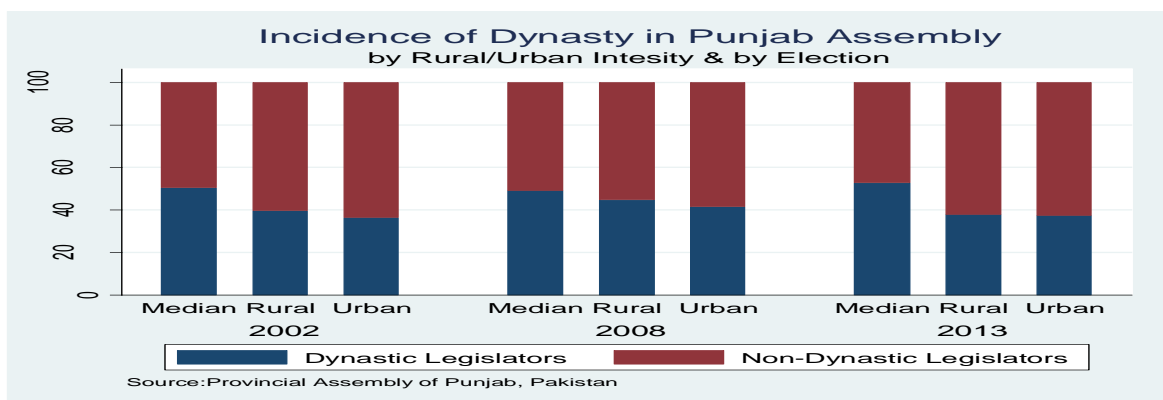


Fig (a)

Fig (b)



Fig(c)

Figure 3.4 shows the incidence of the dynasty in the three general elections held in 2002, 2008 and 2013 for the three regions²⁵ of Punjab. Incidence of dynasties is a little bit higher in central and south Punjab than north Punjab. Almost 40 to 50 % of the elected MPAs in three general elections of Punjab were dynastic. Urban²⁶ areas have a very small difference from the rural and median districts in terms of dynasty incidence. The figure depicts that the incidence of the dynasty in Punjab is almost similar across different regions. Dynastic politics both in urban and rural politics is the only defining feature. A similar conclusion is drawn if we segregate districts on the base of their urban intensity. A large variation in party representation yet very small difference in dynastic presence in all districts are seen.

Since Punjab is dominated by dynasties across its rural and urban areas simultaneously, what differentiates these families is the source of their power. Feudal dynasties are considered to be more retrogressive as compared to the dynastic families from business class. Figure 3.4 depicts the division of elected legislators of Punjab in three general elections of 2002, 2008 and 2013 by their profession. South Punjab is dominated by the feudal politicians in all three elections. While business based politicians are in majority in North Punjab. Although PMLN in Punjab was a purely urban-based party yet it has heavily depended upon feudal and rural dynasties to gain power. Similarly, the majority of MPAs still have a feudal base in rural and Median districts in all three elections. However, the number of legislators from the business class is higher in the highly urbanized district.

²⁵ Note: North Punjab includes Attock, Jehlum, Rawalpindi, Chakwal and Jehlum. Central Punjab includes Lahore, Sheikhpura, Kasur, Gujrat, Gujranwala, Sialkot, Jhang, Faisalabad, Toba Tek Singh, Sahiwal, Okara, Khushab and Sargodha. South Punjab consists of Mianwali, Bhakhar, Multan, Khanewal, Vehari, Muzaffargarh, Dera Ghazi Khan, Rajanpur, Layyah, Bahawalpur, Bahawalnagar, and Rahim Yar Khan

²⁶ districts here include Faisalabad, Gujranwala, Lahore, and Rawalpindi. Rajanpur, Chakwal, Dera Ghazi Khan, Layyah, and Muzaffar Garh are includes in Rural districts and rest are categorized as Median districts

We can also observe a gradual rise in the agri-cum-business class from 2008 to 2013 elections and a gradual decline in agriculturalists or feudal based politicians specifically in urban politics. Although urban politics is dominated by business-class yet the feudal base of politicians has not been wiped out completely from highly urbanized districts of Punjab till today. What are the consequences of these dynastic families for political and economic progress is an important dimension to investigate.

Figure 3.5: MPAs in Punjab by Profession & Region

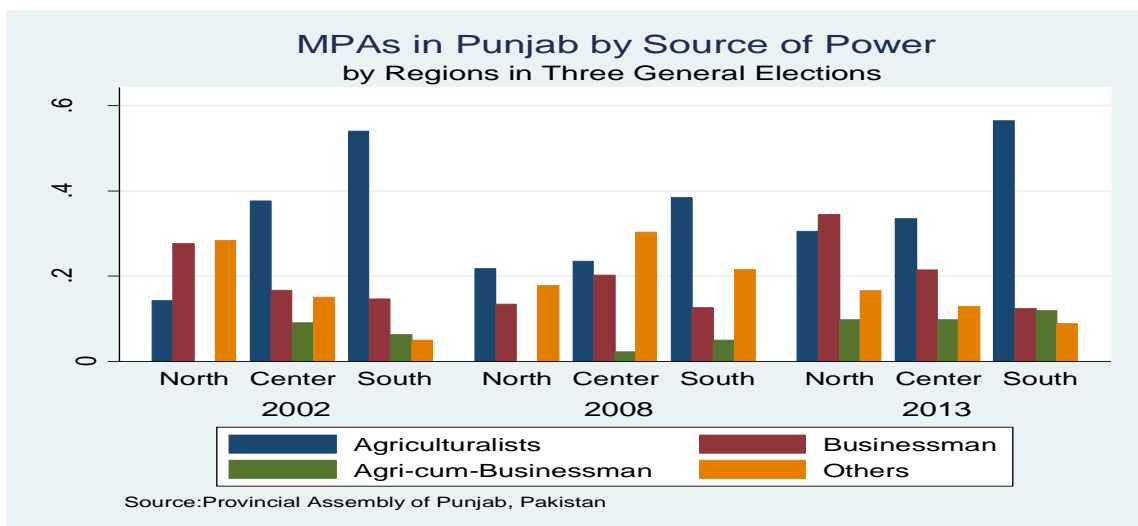
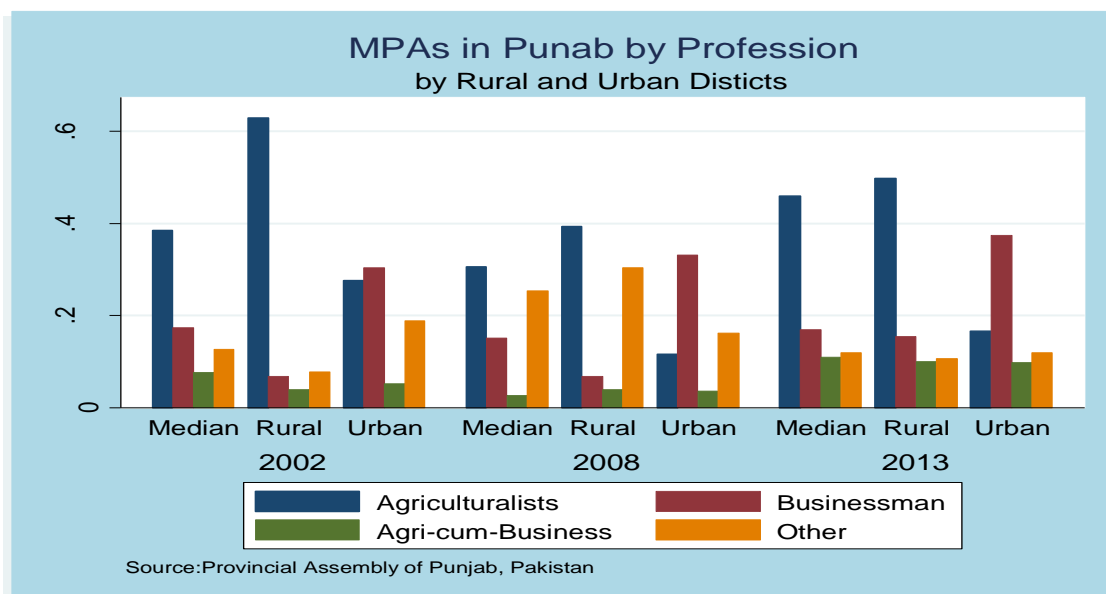


Figure 3.6: MPAs in Punjab by Profession & by Rural/Urban Intensity



Zahid (2013) has proposed that feudal politicians based in rural areas will have the least priority for the socio-economic progress of their electorates due to minimal competition faced by them for electoral wins. In contrast in less feudal and more urbanized centers, socio-economic indicators will be better due to greater pressure on the electoral representatives.

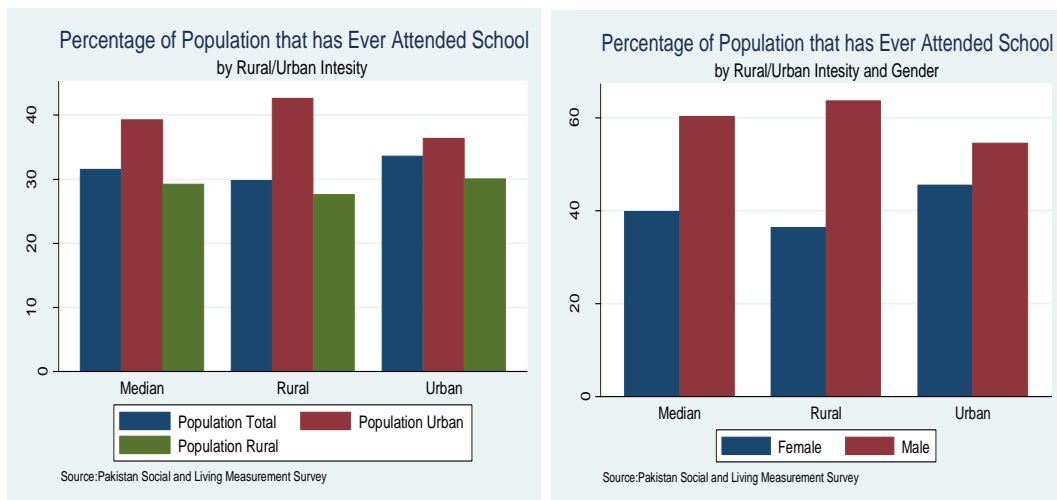
Urban centers spend significantly more resources on development irrespective of their political orientation. Moreover, protests and citizen pressure is also feared in the urban center if certain amenities are not provided or a certain level of progress is not made. On the other hand, we don't observe any significant protest from the rural community over the underperformance of their representatives. We have used a few socio-economic indicators from the Pakistan Social and Living Standards Measurement Survey conducted in 2004, 2006, 2008, 2010, 2012 and 2014 to conclude this hypothesis. Since our electoral data covers three general elections from 2002 to 2013, the PSLM surveys from 2004 to 2014 can be used to make conclusions about the economic indicators for the same electoral regimes. However, it should be kept in mind that many factors other than dynasty may have affected these indicators. The analysis here only intends to create a link if any between the socioeconomic disparity and dynastic structure in the province.

3.3.1 Literacy

Literacy is used as a proxy for the level of human development and social progress of districts. For education, we have taken four indicators i.e. the percentage of the population that has ever attended school, literacy rate of the population aged 10 years and older, adult literacy of population 15 years and older and literacy rank of the districts. The graphs below show the percentage of the population that has ever

attended school. We can see that in urban centers not only the male-female disparity is lower but also there is less rural/urban difference within the urban cities and vice versa in rural districts. The gender bias in attending school ever is higher in South Punjab as compared to North and Central Punjab as is depicted in the graph below. Appendix H, I, and J show average values of literacy rates 10 years and older, literacy rates 15 years and older and percentage of the population that has ever attended school calculated from PSLM surveys (2004-2014).

Figure 3.7: Percentage of Population That Has Ever Attended School



Top five ranked districts in terms of literacy are Rawalpindi, Lahore, Jehlum, Chakwal, and Gujrat while the bottom-ranked districts are Rajanpur, Muzaffargarh, Dera Ghazi Khan, Bahawalnagar, and Bahawalpur. Highly urbanized districts of Lahore, Rawalpindi, Gujranwala, and Faisalabad have literacy ranks of 3, 2, 12 and 10. While highly ruralized districts of Rajanpur, Muzaffargarh, Dera Ghazi Khan are placed at the bottom of literacy rank.

Overall literacy rate in Punjab in the study years is 57% with 72% in urban areas and 52% in rural areas. Highest literacy rate is 79.7 % (Male=88%,

Female=71.5%)in Rawalpindi and lowest in Rajanpur at 34%(Male=46.5% , Female=21.8%).

Table 3.3: Literacy Ranks and Political Characteristics of MPAs in Punjab Assembly (2002 to 2014)

| District | Literacy Rank | Adult Literacy Rank | Dynastic Legislators | Agriculturalists | Businessman | Agri-cum-Business |
|----------|---------------|---------------------|----------------------|------------------|-------------|-------------------|
| RWD | 2.00 | 2.17 | 0.45 | 0.07 | 0.33 | 0.02 |
| LHR | 3.00 | 2.67 | 0.27 | 0.11 | 0.50 | 0.03 |
| CHK | 4.50 | 5.00 | 0.29 | 0.13 | 0.25 | 0.04 |
| JEH | 4.50 | 5.33 | 0.21 | 0.17 | 0.25 | 0.00 |
| GUJ | 8.92 | 9.25 | 0.69 | 0.13 | 0.19 | 0.01 |
| FSD | 10.00 | 9.50 | 0.43 | 0.24 | 0.29 | 0.07 |
| TTS | 10.00 | 10.00 | 0.67 | 0.19 | 0.07 | 0.00 |
| SKT | 11.50 | 10.33 | 0.32 | 0.19 | 0.22 | 0.08 |
| ATK | 11.67 | 12.50 | 0.60 | 0.47 | 0.03 | 0.00 |
| GUJR | 12.75 | 12.50 | 0.41 | 0.28 | 0.20 | 0.09 |
| SHK | 13.17 | 12.50 | 0.46 | 0.23 | 0.22 | 0.08 |
| SAR | 15.33 | 16.33 | 0.56 | 0.24 | 0.12 | 0.06 |
| MWL | 17.50 | 18.00 | 0.58 | 0.38 | 0.21 | 0.04 |
| KHU | 18.17 | 20.00 | 0.38 | 0.29 | 0.25 | 0.08 |
| LYA | 20.00 | 21.17 | 0.33 | 0.47 | 0.03 | 0.17 |
| KAS | 22.33 | 22.00 | 0.48 | 0.39 | 0.20 | 0.06 |
| KHN | 22.83 | 22.67 | 0.52 | 0.46 | 0.08 | 0.06 |
| BHK | 23.17 | 25.17 | 0.67 | 0.58 | 0.25 | 0.00 |
| MTN | 25.33 | 24.75 | 0.52 | 0.51 | 0.19 | 0.03 |
| SWL | 25.42 | 24.58 | 0.36 | 0.32 | 0.07 | 0.14 |
| VHR | 26.00 | 26.17 | 0.44 | 0.38 | 0.27 | 0.17 |
| OKA | 27.33 | 27.67 | 0.67 | 0.56 | 0.10 | 0.02 |
| JHG | 27.92 | 28.08 | 0.45 | 0.70 | 0.08 | 0.03 |
| RYK | 28.17 | 32.00 | 0.44 | 0.24 | 0.06 | 0.23 |
| BWP | 31.67 | 29.83 | 0.58 | 0.42 | 0.15 | 0.02 |
| BWN | 32.50 | 27.17 | 0.42 | 0.31 | 0.21 | 0.04 |
| DGK | 33.00 | 34.00 | 0.38 | 0.60 | 0.02 | 0.00 |
| MGR | 33.17 | 34.00 | 0.50 | 0.59 | 0.11 | 0.00 |
| RJP | 35.67 | 35.67 | 0.58 | 0.67 | 0.00 | 0.04 |

Source: Author's own calculations using Pakistan Social and Living Measurement Survey (2004, 2006, 2008, 2010, 2012, 2014) & Provincial Assembly of Punjab,

Note: values in columns 4 to 7 are calculated as proportion of specific category from the total elected MPAs in three legislative assemblies of 2002, 2008 and 2013. Literacy ranks are mean values calculated from Pakistan Social and living Measurement surveys conducted from 2004 to 2014 in alternate years.

The highest urban literacy rate is achieved by Chakwal at 90.5% and the highest rural literacy rate is in Rawalpindi at 75.5%. In contrast, Rajanpur is placed at

the bottom with 66.2% urban and 29.8 % rural literacy rates. Table 3.3 compares the districts in order of the literacy rank they have achieved from 2004 to 2014 in the PSLM survey with their political structure.

The top-ranked district Rawalpindi on literacy scale has 45% dynastic Legislators and DGK has only 38% dynastic legislators in the same period. On the other hand, the highly ruralized district of Chakwal is placed at the third position from top in literacy rank with 29% dynastic legislators. The fourth column in table 3.3 shows that the differences among districts on the dynasty scale are not very pronounced. The distinguishing feature of the districts seems to be the profession of the elected MPAs which represents their source of power. More than 50% of the elected MPAs from the districts of Rajanpur, Muzaffargarh and Dera Ghazi Khan are agriculturalists or they have a feudal base. In contrast, top-ranked districts in literacy have less than 20% of legislators from the feudalist class. A greater percentage of MPAs from top-ranked districts are affiliated with the business for example 50% from Lahore and 33% legislators from Rawalpindi district are businessman.

An important point to mention here is the distinctive character of district Chakwal in comparison to other rural districts. Although this district has only 12% urban population yet it is ranked third in literacy. In 2002 to 2013 elections it had 29% dynastic legislators from total elected members. The districts also have a higher proportion of MPAs from business (25%) than from the agriculture sector (13%). The evidence from Chakwal shows that the source of the power of these dynasties is more an important factor rather than the dynasty itself. Gender disparity is also higher in highly ruralized districts as compared to the urban centers.

Henceforth, the evidence from this data suggests that although urbanization has a positive link with literacy indicators but the kind of politicians is more an

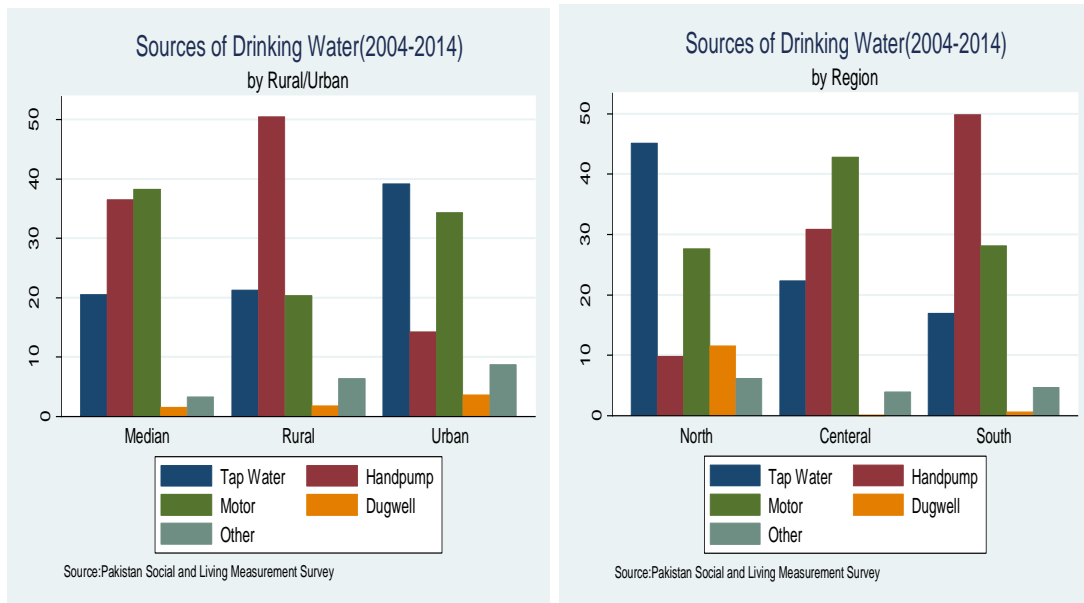
important factor. The discussion so far leads us to believe that the priorities of the ruling elites from the feudal class are not tilted towards providing education access to its population in general and females in specific. It is evident from the data at hand that the low ranked districts are not only more rural but are also more feudal as well. Henceforth, these districts are more prone to retrogressive dynasties. Similarly, the higher a district is urbanized, the higher is literacy ranking and also less feudal influence as well. Dynasties with a feudal mindset are relatively more harmful to economic progress than the non-feudal dynasties.

3.3.2 Sources of Drinking Water

Access to clean drinking water explains a lot about the economic condition of a district. The source of drinking water in Punjab is mainly the groundwater extracted through hand or motor pumps. The six successive Pakistan social and living measurement surveys from 2004 to 2014 show that only 23.19% of the population in Punjab has access to tap water. In urban areas, the ratio is 35% of the population while only 17% population in the rural areas uses tap water for drinking. The rural-urban disparity is also very pronounced in this case. South Punjab and rural districts of Punjab have the least access to tap water and the highest dependence on hand pumps.

These districts are placed at the bottom of tap water rank in descending order. 59% of the population in rural districts relies on groundwater sources hand or motor pumps. While only 29% have access to tap water in the same districts. One reason for the heavy reliance of the population on groundwater, maybe that Punjab has a rich canal system and water reserves.

Figure 3.8: Source of Drinking Water by Region and Rural/Urban Intensity



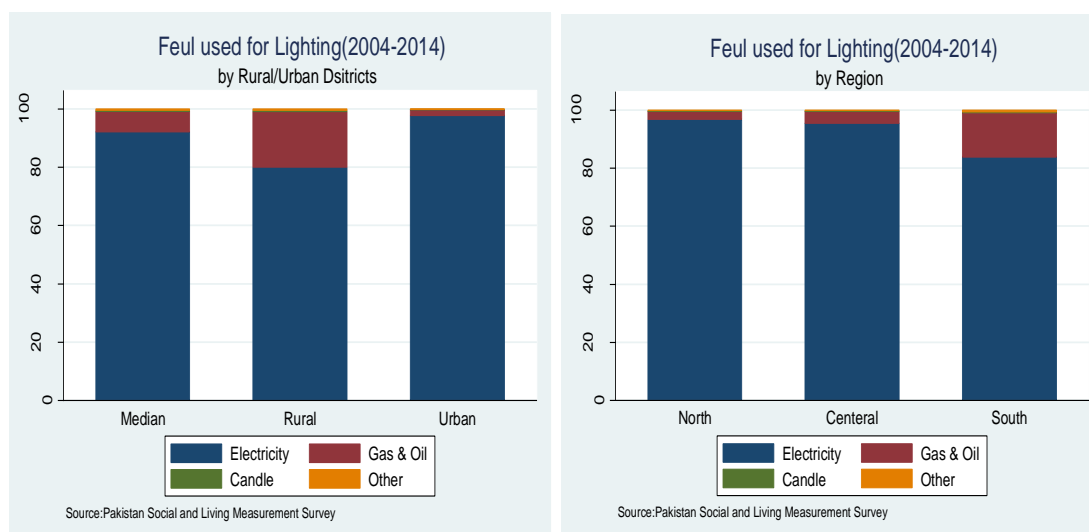
Despite this fact, urban districts have more access to tap water. The rural population also lacks the facility of motors to use groundwater and depend heavily on primitive methods for pulling groundwater. The more a district is rural or located in South Punjab, the more the population is dependent on hand pumps and less on motors. Rural districts with the more feudal type of dynasties again perform worse on this indicator which again signifies the impact of rural and deep-rooted dynasties in hindering the economic wellbeing of their population.

3.3.3 Fuel Used for Lighting and Cooking

WAPDA (Water and power development authority) is a federally administered autonomous body responsible for electrification in Pakistan. The distribution of electricity is done by a private company KESC (Karachi Electric Supply Corporation). Similarly, gas supply and distribution are also handled by autonomous companies like Sui Southern Gas Company (SSGC) and Sui Northern Gas Pipeline Limited (SNGPL). These autonomous bodies responsible for the production and

distribution of electricity and gas are outside the jurisdiction of the elected government. Therefore, we have enough reason to believe that the electrification and gas availability for any area will be independent of the influence of public representatives. Therefore, district wise heterogeneity is not expected in the provision of these facilities. Fuel used for lighting depicts the level of electrification in a district while fuel used for cooking shows the gas availability in that area. Overall more than 90% population uses electricity for lighting. In Urban districts the percentage is 97%, in rural, it is 79% and in median districts, the percentage is 92%. The lowest rate of electrification is in district Rajapur where only 64% population uses electricity for lighting. Layyah and Muzaffargarh have an 80% electrification percentage. Maximum districts specifically the more urban districts have more than 90% percentage of the population using electricity as the main source for lighting.

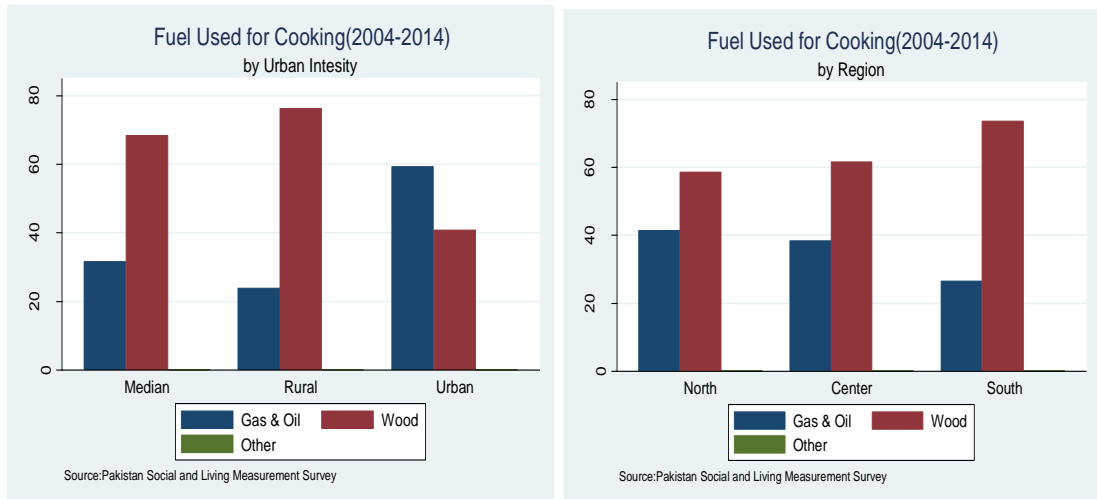
Figure 3.9: Fuel Used for Lighting by Region and Rural/Urban Intensity



The rural-urban disparity within districts is more pronounced in the south and highly ruralized districts with a tribal or feudal base. The urban districts like Lahore, Rawalpindi, Faisalabad, and Gujranwala are well above 95% in rural and urban areas

alike. On the other side in Rajanpur, 98% of the urban population and 58% of the rural population have access to electricity. DGK which is dominated by tribal politics has 96% electrification rate in urban area and 73% in rural area.

Figure 3.10: Fuel Used for Cooking by Region and Rural/Urban Intensity



The facts and figures for the fuel used for cooking depict the same disparity between the rural-urban and between the feudal and non-feudal dominated political dynasties. South Punjab and rural districts use wood and charcoal as the main source for cooking while in urban districts Gas & oil category dominates other sources used for cooking. 80% population in Lahore use Gas as the main source for cooking while the comparable number for Rajanpur is only 2% of the population. In the Bhakhar district, gas is used by only 1.8% population and in Layyah, it is 3% of the total population. More than 90% of the population in rural districts still depends upon wood, charcoal and other sources of fuel for cooking. Some of the differences in access to electricity and gas may be explained by the remoteness of the area; however, the role of politics cannot be ignored in widening these disparities. The districts performing low on these indicators are again the ones dominated by the feudal or tribal (DGK) dynasties.

The conclusion made from this section is that the incidence of the dynasty is similar in rural-urban districts of Punjab. However, the nature of the dynasty based upon their source of power is different. Feudal and landowning dynasties are more retrogressive than the dynasties based in urban areas. The economic indicators are deteriorating in the districts which are not only more rural but also are more feudal. This may lead us to believe that urban-based dynasties from the business profession perform well. However, we should be careful in making this conclusion because the evidence from Punjab speaks otherwise. The highly influential and powerful urban dynasty of Punjab is the Sharifs from Lahore. Every member of this dynasty specifically the one who was active in politics is facing or has been convicted for corruption charges in public funds.

Therefore, it is more appropriate to say that the urban dynasts perform well or comparatively well in urban areas just under the pressure of vibrant urban electorates. We have used urbanization and the proportion of feudal legislators as control variables in our model specification to avoid the bias which may result from these influences.

3.4 DATA AND METHODOLOGY

Punjab is the country's most populous province. A unicameral legislature system of the elected representatives is adopted by the provincial assembly of Punjab. The vertical hierarchy of the administrative divisions places provinces, divisions and then districts from top to low levels of administration. A voter from respective constituencies directly elects the members for provincial assembly (MPAs) while the indirect nomination is made for women and minorities reserved seats. Article 107 of the constitution specifies five-year tenure for the MPAs unless the assembly is

dissolved earlier by the Governor on the advice by the Chief Minister or the approval by the President. Participation in the legislative process of different provincial departments is the primary responsibility of the MPAs. The financial matters management through the provincial consolidated fund is the secondary responsibility of these representatives. They are also responsible to keep intact with the policies, practices, and performance of the provincial government and provincial departments and to raise public interest issues in the provincial assembly as well as being the public representatives.

District development expenditures allocated at the provincial level and the performance of districts in different sectors like health, education, and infrastructure are the principle scope of this study. We are interested in the development funds allocated to districts through annual development plans of the provincial government and the resulting outcomes in the same districts. The district development expenditures are largely financed through provincial funds and are allocated at the province level but their prioritization for different sectors is done by the concerned MPAs of the particular district. District development projects are mainly discretionary and result from a bargaining process between the district and provincial governments. These MPAs can propose and negotiate different development projects of their constituencies with provincial governments.

Accountability of the MPAs can be maintained through electoral incentives and potential punishment by the electorates at the polls to the corrupt or underperforming representatives. However, the dominance of the dynastic power awards incumbency advantage to family contenders which allow the dynasts to stay in power despite mismanagement of the resources or underperformance. We have used electoral data for three provincial elections held in 2002, 2018 and 2013 obtained

from the Election Commission of Pakistan. The data on dynasties is taken from the biographies of MPAs given at the official website of the Provincial Assembly of Punjab. This data includes information on the characteristics of all candidates elected to the Provincial Assembly such as gender, schooling, age, dynastic status, the number of relatives they have in previous assemblies, their relation to the dynastic member, number of terms they have served, positions held in the current or previous assemblies and previous occupation. Our data covers 29 districts of Punjab from 2002 to 2017. Measures of public good provision include information on development funds for education, health, water supply, and sanitation and roads and bridges. Measures of economic performance include the number of patients treated at government hospitals, number of beds in government hospitals, school enrollment and length of provincial and farm to market roads. This data has been collected from the annual development plans published annually by the finance division of the government of Punjab and from the Punjab development statistics published by the Punjab Bureau of Statistics. Since we have district-level data and each district consists of several constituencies, we had to aggregate information about MPAs at the district level. Henceforth, all the individual-level characteristics of the MPAs like gender, age, education, dynastic background, profession, positions held, terms in the office, etc. have been taken as an average of the total elected candidates in a district. For example, if a district has three male MPAs out of total four then its average is calculated by dividing 3 with 4 and multiplying the result with 100 to convert it into a percentage. The preceding example will show that 75% of the elected members from that district are male. Similarly, dynastic members have also been measured as a percentage of the total elected members from a particular district. The dynastic variable used by this study captures the intensity of dynastic families within a district.

The presence of multiple dynasties within a district creates an environment of competition among dynastic politicians and may induce better governance. To enhance their re-election chances, the dynastic contenders are tempted to improve the provision of public goods and services specifically in an environment where performance-based accountability is emphasized among the electorates in surrounding districts. This is in line with Winter's (2011) conceptualization of "ruling oligarchs," where such families rule collectively, coexist, and share power with the purported goal of preserving power. The healthy competitive spirit among such families thus should have a positive effect on governance. Therefore, our dynasty variable captures the level of competition among the dynastic contenders among districts.

Next we relax and change the definition of the dynasty variable to capture the strength of the dynastic family per se. In our previous specification any candidate having even a single relative in past or current assemblies is coded as a dynastic member. However, the political capital and the barraging power a member may possess that have ten to fifteen relatives in politics may significantly differ from the one having only one relative in politics. Henceforth, the actual behavior, performance and incentives of the dynastic contenders may differ depending upon the base and strength of the political family to which a member belongs. The number of relatives a representative has in current or previous assemblies shows the strength of that particular dynastic family. Therefore, we have also used dynastic relatives' number in our second specification. We run the dynasty and dynastic relatives' variables in two separate regression models in the results section primarily because both variables are highly correlated to each other (Pearson's r correlation coefficient = 0.7486), thus essentially capturing the same phenomenon: dynastic presence.

Urbanization intensity is an important variable in the context of Punjab. As we have shown in section 3.3 above that Punjab has experienced rapid urbanization in previous decades. With the rise of urbanization people from the business, the sector has also entered into politics. Since citizen demands are high in urban centers, the behavior of representatives from urban areas is expected to differ from the typical retrogressive mindset of the feudal landlords. As we have shown above that the more a district is ruralized, the more it is dominated by the dynasties from landowning class with the lowest socioeconomic indicators. Therefore, we have used two additional controls in our study to minimize the bias due to rural/urban disparity and the dominance of feudal politicians. Urbanization has been added as a categorical variable with value "1" for highly ruralized districts, "2" for median districts and "3" for highly urbanized districts. Moreover, feudal MPAs proportion from total elected MPAs for a district is used to control the impact of feudal mindset dynastic contenders.

The experience of the MPAs measured by the terms in the office is also used as a control variable. Affiliation of the MPAs with the ruling party may also affect distributive benefits and policy outcomes of the district. We have used affiliation by coding "1" if the district has at least 50% or above MPAs allied with the ruling party in the province and "0" otherwise. We have also used different district-level characteristics like population density, number of schools, number of government hospitals to control the district level heterogeneity. In most of our estimations, we have used per capita measures of budget based on estimates of the local population.

3.4.1 Empirical Model for Testing Distributive Benefits

We use the development budget for education, health, roads, and water supply sectors to test the hypothesis that the dynastic legislators with accumulated bargaining

power can bring more distributive benefits to their districts. The biographical data about the member's provincial assembly of Punjab (for elections held in 2002, 2008 and 2013) and the annual district-level socio-economic information from 2002 to 2017 has been used for analysis. We estimate the following model given in eq (3.1):

$$Y_{it}^{DEV} = \beta_1 Dynasty_{it} + \alpha_i + X_{it} + \epsilon_{it} \quad (3.1)$$

where Y_{it}^{DEV} is the fiscal allocation for development in district i at time t . $Dynasty$ is an indicator for the proportion of dynastic MPAs in a district i at time t , X_{it} is a set of pre-determined district characteristics such as population density, proportion of affiliated MPAs with the ruling party, urbanization, proportion of feudal MPAs, terms in office, number of schools (in Education model), number of government hospitals (in Health model). The parameter of interest β_1 captures the difference in budget allocations with and without dynastic MPAs. We include a set of pre-determined district characteristics as controls to gain precision for robustness purposes. Next, to capture the strength of a particular dynastic family we have estimates above equation by replacing dynasty variable with the number of dynastic relatives in current or previous assemblies. The variable again measured as a percentage for a district. Specifically the equation (3.2) we estimate is:

$$Y_{it}^{DEV} = \beta_1 Relatives_{it} + \alpha_i + X_{it} + \epsilon_{it} \quad (3.2)$$

Here $Relatives_{it}$ shows the percentage of dynastic relatives of MPAs from a district.

3.4.2 Empirical Model for Testing Policy Outcomes

Next to test the second hypothesis that the districts with a higher percentage of dynastic legislators perform worse on economic indicators we specify equations 3.3, 3.4 and 3.5 given below:

$$Enrollment_{it} = \beta_1 Dynasty_{it} + \alpha_i + X_{it} + \epsilon_{it} \quad (3.3)$$

$$Number\ of\ Beds\ in\ GH_{it} = \beta_1 Dynasty_{it} + \alpha_i + X_{it} + \epsilon_{it} \quad (3.4)$$

$$\text{Patients Treated in GH}_{it} = \beta_1 \text{Dynasty}_{it} + \alpha_i + X_{it} + \varepsilon_{it} \quad (3.5)$$

Here Enrollment_{it} is the number of enrolled students in government schools at the district level. $\text{Number of Beds in GH}_{it}$ and $\text{Patients Treated in GH}_{it}$ are used for testing the impact of dynasties on health infrastructure and outcomes. Equations 3.3, 3.4 and 3.5 are used to test social sector performance indicators. Next, we estimate equations 3.6 and 3.7 for the roads sector.

$$\text{Provincial Paved Road Legth}_{it} = \beta_1 \text{Dynasty}_{it} + \alpha_i + X_{it} + \varepsilon_{it} \quad (3.6)$$

$$\text{Farm to Market Road Legth}_{it} = \beta_1 \text{Dynasty}_{it} + \alpha_i + X_{it} + \varepsilon_{it} \quad (3.7)$$

Provincial roads length and farms to market roads length are used as the dependent variable in equations 3.6 and 3.7. Farms to market roads are specifically made to link rural areas to markets and give them better access to urban markets. We hypothesize and expect feudal politicians to perform well in this sector because this primarily is their influencing area. Asako et al. (2015) have suggested that the resourceful dynastic legislators will perform worse than the poor dynastic legislators. Since the data on economic assets of the MPAs in Pakistan is not accessible, we have used the politicians from the agriculture sector or landowning class as a proxy for the richness of the legislators. Punjab dynasties are dominated by the feudal politicians who draw their power from the large tracts of land. Moreover, section 3.3 above has shown that the feudal politicians are least performing legislators in Punjab, the variable measured as a percentage of feudal politicians from total elected MPAs is used as a proxy of the richness of these candidates. The dynasty variable in our specification, therefore, specifically captures the impact of being a dynast irrespective of their financial position. An important mention here is that the majority of the dynastic families in Punjab belonging to either feudal or business sectors are rich. Therefore, it is not necessary to distinguish them in terms of resourcefulness.

The models specified are suspected to have reverse causality and endogeneity issues. For example, a poor district may elect a dynast legislator simply because the electorates expect powerful dynasts to bring more resources for improving their economic conditions. Secondly, a district lagging in economic progress may also receive more funds from the provincial government because of its greater financial needs. In this case, we may overestimate the effect of the dynasty. Therefore, reverse causality can affect our findings because the dependent variable is determining the presence of dynastic legislators (Asako et al., 2015). Higher grants lead to a higher chance of reelection of dynastic MPA who brings back the money to the district. Moreover, suppose that the unobservable ability of politicians also helps them to secure more money for their districts. If such a trait is possessed by the dynastic MPAs, we may get biased results because we are unable to include such unobservable traits in regression. Moreover, we have used political affiliation of the MPAs with the ruling party as a control variable that may be another source of endogeneity. Khemani (2003) in her study of India stated that seat proportion controlled by national ruling party and affiliation indicators may create endogeneity 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 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.

An important mention in the case of our data is that the development budget for different schemes is usually allocated for many years. The development projects by and large take time to complete. This fact makes allocation made in a year

dependent upon the allocations earmarked in the previous years. Moreover, due to the incremental budgeting process in Pakistan where the old budget is just appropriated for making a new budget, the inclusion of the lagged dependent variable becomes unavoidable. Henceforth, we encounter the problem of lagged dependent variable which can make fixed effects and OLS coefficients biased. Since the development budget which is our dependent variable is present on both sides of the equation; the orthogonality condition between the disturbance term and regressors is not satisfied. Hence we get biased estimates due to this simultaneity bias. Hausman (1978) can check for the presence of simultaneity and proposes the use of instrumental variable methods. Instrumental variable methods like 2SLS and 3SLS are preferred over OLS in such cases. However, the choice and availability of valid instruments create a challenge for researchers and reduce the chances of using 2SLS and 3SLS.

Moreover, the unavailability of district-level indicators to be used as instruments limits our ability to use standard IV and TSLS techniques. Generalized 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. To give more efficient estimates than the TSLS or IV in the presence of heteroscedasticity is yet another benefit of using the GMM technique. Heteroscedasticity is also expected in our panel consisting of 29 districts of Punjab. hence, we use the dynamic panel GMM method, based on the work of Arellano and Bond (1991) as our ultimate approach to overcome the endogeneity problem.

Simultaneity bias, reverse causality and omitted variables all three issues can be solved through the Dynamic Panel Method (GMM). Dynamic panel data models include lag dependent variables as covariates along with the unobserved effects, fixed or random, and exogenous regressors. GMM-first difference and GMM-system are two variants of dynamic panel GMM estimator. Dynamic panel data literature has more widely used 1st difference GMM developed by Arellano and Bond (1991). This estimator takes the first difference of the equation to remove the individual-specific effects for each period. Then explanatory variables of the 1st difference equation are instrumented using their value in lagged level. System GMM proposed by Blundell and Bond (1998) is an improvement of 1st difference GMM. Blundell and Bond (1998) proved that system GMM is more efficient than the 1st difference GMM by using Monte Carlo simulations. The 1st difference and level equations for each period are combined in system GMM. The delayed values for at least one period are used to instrument the variables in the 1st difference equation. Similarly, 1st differences are used to instrument variables in the level equation. The GMM is then used to simultaneously estimate the resulting equation system.

This method is effective in controlling specific effects and the potential endogeneity of the explanatory variables. The GMM estimator is effective because it satisfies the validity of the two hypotheses of the exogeneity of the instruments and the non-correlation of the residues. Arellano and Bond proposed a test to check the autocorrelation of the residues. A first-order autocorrelation is introduced due to the construction of the difference equation, therefore, the second order is used to verify the autocorrelation of the residuals. Sargan test is used to verify the valid instrument condition of delayed variables. Recently Hansen test has replaced the Sargan test because it gives robust results when errors are heteroscedastic. Both Sargan and

Hansen tests take no correlation between the disturbances and the over-identified instruments as the null hypothesis. The GMM in system has advantage over other estimators for the reason stated below: (i) the unobservable specific effects are controlled by the use of this technique; (ii) the estimator is implemented by taking the first difference of the data set which removes the unobservable specific district effects and (iii) the potential endogeneity issue of the regressors and the lagged value of dependent variable is also resolved by using delayed values as instruments. Hansen-J test is applied for over-identifying restrictions as follow up test and the (Arellano & Bond, 1991) test, AR(2), for no autocorrelation in the second-differenced errors.

3.5 RESULTS AND DISCUSSION

Table 3.4 reports the summary statistics of the district-level data used for the estimation of the specified equations. Table 3.5 reports the results of the first two equations specified above estimated through the system GMM two-step procedure. Column (1) in table 3.5 shows the impact of dynasty percentage on the funds transferred by the provincial government in the roads and bridges sector. The results show that the districts receive higher transfers when the percentage of dynastic MPAs is higher than that of the non-dynastic legislators.

The difference is statistically significant at the 10 percent level. Column (2) in Table 3.5 shows the impact of the number of dynastic relatives of the MPAs on the roads sector transfers for development from the provincial government. The coefficient is significant at 1% level. The stronger the family of the dynastic MPA, the higher the per capita transfers expected by the government to that district. Column(3) and (4) in table 3.5 show the impact of dynasty and strength of dynasty on transfers in the water supply sector. Both dynasties and dynastic relatives hurt allocations for this

sector. Columns 5-8 in Table 3.5 are estimated for the social sector budget. Dynastic legislators have a significantly positive impact on the funds' allocation for development in both sectors of education and health. The results support the hypothesis that the dynastic presence in a district is expected to draw more resources for those districts.

Table 3.4: Summary Statistics for District Level Data

| Variable | Mean | Std. Dev. | Min | Max |
|---|----------|-----------|----------|----------|
| Roads & Bridges Budget | 0.229794 | 0.259377 | 4.43E-09 | 2.131165 |
| Water Supply & Sanitation Budget | 0.10689 | 0.331869 | 2.21E-07 | 4.72844 |
| Education Budget | 0.099551 | 0.099975 | 1.25E-06 | 0.563582 |
| Health Budget | 0.075149 | 0.120427 | 7.29E-07 | 1.182245 |
| Dynasty Percentage of MPAs | 47.21154 | 18.71613 | 0 | 92.30769 |
| Dynastic Relatives of MPAs in Office | 103.7262 | 64.35208 | 0 | 271.4286 |
| Affiliated MPAs with the Incumbents | 0.683765 | 0.226927 | 0 | 1 |
| Terms in Office | 1.679634 | 0.492796 | 1 | 3 |
| MPAs from Feudal Class | 0.379383 | 0.232137 | 0 | 1 |
| Urbanization | 1.965517 | 0.556618 | 1 | 3 |
| Government School Enrollment(in thousands) | 375669.7 | 167009 | 97821 | 951273 |
| Patients Treated in Govt. Hospitals | 1698.48 | 1490.637 | 42 | 19758 |
| Beds in Govt. Hospitals | 1129.476 | 1906.667 | 120 | 12035 |
| Provincial Roads Length(in Kilometers) | 424.3485 | 231.0515 | 12.47 | 1284.42 |
| Length of Farm to Market Roads(in Kilometers) | 583.2548 | 479.2375 | 20.09 | 2273.1 |
| Number of Govt. Schools | 1910.071 | 667.7953 | 848 | 4050 |
| Number of Govt. Hospitals | 8.759818 | 6.450377 | 2 | 45 |
| Population Density(per square kilometers) | 63.77675 | 83.57833 | 9.803465 | 544.2438 |
| Observations | 464 | | | |

Note: Development Budget is measured in million rupees per-capita and log of the per-capita development budget is used in the analysis

Hence the dynastic legislator with incumbency and bargaining advantage is more powerful to divert public resources towards their constituencies. Table 3.6 reports the results for the test of our second hypothesis in the roads sector.

Table 3.5: Impact of Dynasty on Development Spending (Distributive Benefits)

| VARIABLES | Roads | | Water supply | | Education | | Health | |
|----------------------------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
| <i>Dynasty</i> | 0.0331* | | -0.0716*** | | 0.0298** | | 0.213*** | |
| | (0.0191) | | (0.0193) | | (0.0133) | | (0.0472) | |
| <i>No. of Dynastic Relatives</i> | | 0.0131*** | | -0.0589*** | | 0.00335 | | 0.0638** |
| | | (0.00394) | | (0.0153) | | (0.00845) | | (0.0298) |
| <i>Affiliated MPAs</i> | 6.657*** | 6.895*** | 5.456*** | 3.782 | 1.483* | 2.110*** | -11.08* | -14.45** |
| | (1.115) | (1.410) | (1.737) | (2.584) | (0.800) | (0.674) | (6.204) | (6.991) |
| <i>Previous Terms in Office</i> | -3.265*** | -3.624*** | 0.505 | 2.652** | 0.959** | 0.919** | 0.214 | 0.0119 |
| | (0.566) | (0.621) | (0.807) | (1.037) | (0.363) | (0.346) | (2.091) | (3.459) |
| <i>Feudal MPAs</i> | -3.423* | -4.836** | -5.788*** | -0.717 | -2.440*** | -3.184** | 7.784** | 3.941 |
| | (1.807) | (2.050) | (1.541) | (2.112) | (0.744) | (1.316) | (2.990) | (5.423) |
| <i>Urbanization</i> | -10.55*** | -8.363** | -20.21** | -15.84** | 4.934 | 6.515 | -10.26*** | -5.212 |
| | (2.882) | (3.143) | (8.357) | (7.321) | (6.875) | (5.863) | (3.453) | (5.871) |
| <i>Population Density</i> | 0.141*** | 0.140*** | 0.0372** | 0.0290** | 0.0379*** | 0.0388*** | 0.163*** | 0.172*** |
| | (0.0332) | (0.0345) | (0.0140) | (0.0116) | (0.00609) | (0.00673) | (0.0175) | (0.0195) |
| <i>No. of Govt. Schools</i> | | | | | 0.00317*** | 0.00313*** | | |
| | | | | | (0.000533) | (0.000549) | | |
| <i>No. of Govt. Hospitals</i> | | | | | | | 0.574*** | 0.733*** |
| | | | | | | | (0.188) | (0.179) |
| <i>Lagged Dependent</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Constant</i> | 11.67** | 8.721 | 36.91** | 27.27* | -22.18 | -24.41** | -3.118 | -7.544 |
| | (5.605) | (5.997) | (16.04) | (14.71) | (14.09) | (11.68) | (9.186) | (12.80) |
| <i>F-Value</i> | 933.32*** | 1284.09*** | 589.90*** | 994.42*** | 1926.29*** | 1664.57*** | 295.28*** | 714.56*** |
| <i>AR(1)/Prob.</i> | -1.88/0.06 | -1.87/0.062 | -3.29/0.001 | -3.21/0.001 | -3.74/0.000 | -3.74/0.000 | -2.06/0.039 | -2.35/0.019 |
| <i>AR(2)/Prob.</i> | -0.43/0.668 | -0.55/0.579 | 1.09/0.277 | 0.67/0.504 | -0.29/0.77 | -0.3/0.767 | -0.61/0.541 | 0.48/0.628 |
| <i>Hansen/Prob.</i> | 26.50/0.231 | 26.57/0.228 | 27.71/0.1885 | 27.50/0.193 | 27.21/0.164 | 27.84/0.145 | 23.85/0.30 | 24.27/0.28 |
| <i>Observations</i> | 435 | 435 | 435 | 435 | 435 | 435 | 435 | 435 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

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. District-level data of 29 districts from Punjab for the period 2002 to 2017 has been used for these estimations. Log of per capita budget in roads, water supply, education, and health sector is taken as the dependent variable. Two equations are estimated for each category of the dependent variable by using the dynasty and the number of dynastic relatives as the main explanatory variable separately. Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are year dummies and GMM type instruments are difference of lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1

Table 3.6: Impact of Dynasties on Road Length

| VARIABLES | Length of Provincial Roads | | Farm to Market Road Length | |
|---|----------------------------|------------------------|----------------------------|-----------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 |
| <i>Dynasty</i> | -43.06*** (9.551) | | -17.73* (9.944) | |
| <i>No. of Dynastic Relatives</i> | | -6.487** (2.365) | | -6.810** (2.693) |
| <i>Affiliated MPAs</i> | -882.2 (634.4) | -169.3 (336.4) | 1,249 (877.1) | 1,336 (825.1) |
| <i>Previous Terms in Office</i> | -147.6 (283.3) | -216.5* (125.9) | -2,355*** (351.3) | -2,100*** (228.6) |
| <i>Feudal MPAs</i> | 1,904** (926.4) | 1,736*** (601.4) | 5,117*** (627.8) | 5,403*** (613.7) |
| <i>Urbanization</i> | -529.1** (198.9) | -745.0** (274.1) | -15,011 (102,832) | 2,516 (88,192) |
| <i>Population Density</i> | 7.052*** (0.635) | 6.234*** (0.698) | 11.03*** (1.884) | 11.11*** (1.860) |
| <i>Logged Roads Budget</i> | -8.416*** (1.345) | -7.615*** (0.922) | 48.70*** (3.487) | 49.92*** (3.824) |
| <i>Lagged Roads Length Provincial</i> | 0.0133* (0.00660) | 0.0448*** (0.00658) | | |
| <i>Lagged Farm to Market Roads Length</i> | | | 0.0473*** (0.0102) | 0.0431*** (0.0110) |
| <i>Constant</i> | 3,181*** (651.5) | 1,960*** (602.0) | 32,233 (200,989) | -3,147 (172,449) |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes |
| <i>F-Value</i> | 97.57*** | 140.28*** | 82.73*** | 95.69*** |
| <i>AR(1)/Prob.</i> | -1.67/0.095 | -1.96/0.049 | -0.66/0.511 | -0.79/0.432 |
| <i>AR(2)/Prob.</i> | 0.02/0.986 | -0.05/0.957 | -2.50/0.013 | -2.27/0.023 |
| <i>Hansen/Prob.</i> | 23.39/0.221 | 24.58/0.175 | 26.73/0.18 | 26.70/0.181 |
| <i>Observations</i> | 406 | 406 | 435 | 435 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 |

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. District-level data of 29 districts from Punjab for the period 2002 to 2017 has been used for these estimations. Length of provincial and farm to market roads are taken as dependent variables. Two equations are estimated for each category of the dependent variable by using the dynasty and the number of dynastic relatives as the main explanatory variable separately. Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are year dummies and GMM type instruments are difference of lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1

Column (1) in Table 3.6 shows the impact of the dynastic legislator on the length of the roads in the province at the district level. The coefficient of the dynasty in model 1 reported in table 3.6 is significant at a 1% level of significance. Similarly, farm to market road length is also affected inversely by the number of dynastic relatives. The reducing impact of dynastic legislators is significantly different from in comparison to non-dynastic legislators. The number of dynastic relatives is also affecting roads length negatively. The dynastic candidate in our data has at least one and maximum in some cases more than fifteen dynastic relatives. On average they have three to four relatives who have served in previous or current assembly. The coefficient on dynasty variable is therefore, three to four times higher than the dynastic relative variable.

Table 3.7: Impact of Dynasties on Outcomes in Social Sector

| Variables | Government School Enrollment Rate | | Government Hospital Beds | | Patients Treated in Govt. Hosp. | |
|----------------------------------|-----------------------------------|---------------------------|--------------------------|----------------------|---------------------------------|----------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Dynasty | -4,998** (1,906) | | -6.613* (3.496) | | -187.1*** (31.33) | |
| No. of Dynastic Relatives | | -921.0 (761.8) | | -1.048 (2.212) | | -7.706*** (0.589) |
| Affiliated MPAs | -184,636** (75,417) | -42,143 (95,393) | 613.5*** (87.54) | 563.9*** (64.42) | 2,942* (1,623) | 518.6 (492.8) |
| Previous Terms in Office | -42,208 (44,167) | -52,941 (72,197) | 21.92 (44.10) | 52.95 (86.08) | -1,131 (727.4) | -441.6 (342.0) |
| Feudal MPAs | 392,584*** (137,251) | 325,869* (167,573) | -534.2*** (184.8) | -506.8 (298.2) | -4,821* (2,578) | -3,304*** (745.7) |
| Urbanization | -2.936e+06 (2.321e+06) | -2.893e+06 (2.315e+06) | 3,583*** (358.3) | 3,635*** (353.5) | -552.8 (6,634) | -8,973 (7,046) |
| Population Density | 3,524*** (471.4) | 3,375*** (481.0) | 3.643*** (0.176) | 3.959*** (0.215) | 20.17*** (2.179) | -13.16*** (1.904) |
| No. of Govt. Schools | 47.23*** (8.889) | 39.66*** (10.31) | | | | |
| No. of Govt. Hospitals | | | 179.3*** (2.872) | 180.3*** (2.496) | 104.2*** (11.74) | 67.30*** (6.515) |
| Logged Education Budget | 7,591*** (683.1) | 7,164*** (675.0) | | | | |
| Logged Health Budget | | | -16.68*** (1.596) | -17.31*** (1.905) | -54.05*** (7.876) | 28.60*** (7.326) |
| Constant | 6.179e+06 (4.466e+06) | 5.849e+06 (4.471e+06) | -7,453*** (806.8) | -7,892*** (784.4) | 10,236 (13,848) | 21,749 (14,401) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Lagged Dependent | Yes | Yes | Yes | Yes | Yes | Yes |
| F-Value | 1051.37*** | 191.91*** | 6307.62*** | 8596.77*** | 4428.85*** | 1384.24*** |
| AR(1)/Prob. | -1.97/0.049 | -1.78/0.075 | -2.19/0.028 | -2.30/0.022 | -1.10/0.272 | -1.17/0.242 |
| AR(2)/Prob. | 0.95/0.344 | 0.16/0.872 | -0.52/0.605 | -0.46/0.646 | 0.52/0.602 | -1.07/0.285 |
| Hansen/Prob. | 25.81/0.172 | 24.0/0.242 | 22.67/0.305 | 24.01/0.24 | 27.45/0.123 | 28.08/0.107 |
| Observations | 435 | 435 | 435 | 435 | 435 | 435 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 |

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. District-level data of 29 districts from Punjab for the period 2002 to 2017 has been used for these estimations. School enrollment in the government sector, the number of government hospital beds and patients treated in government hospitals are taken as dependent variables. Two equations are estimated for each category of the dependent variable by using the dynasty and the number of dynastic relatives as the main explanatory variable separately. Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are year dummies and GMM type instruments are difference of lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1.

Berganca et al. (2015) claimed that dynastic legislators spend significantly more in the infrastructure sectors with no improvement in outcomes. They have proposed two interpretations for this finding. The first interpretation is that the political capital possessed by the dynastic legislators makes them divert more resources to their constituencies and remain politically competitive at the same time. The claim is also supported by the results of Brollo et al. (2013) who found that increase in budgets was associated with higher chance of re-election and extracting rents from corruption. The second possible explanation is the adverse selection issue that means the dynastic politicians are selected from a worse pool of candidates. As a result, they are incapacitated to perform well.

An important mention here is the sign of feudal MPAs in this regression. Roads' length is significantly and positively affected by the percentage increase in the number of legislators from the landowning class. This finding leads us to the conclusion that the legislators with the feudal mindset perform well in the infrastructure sector. The reason behind this finding is the visibility and target-ability of this sector for the electorate. Since the whole edifice of dynasty stands on the patron-client ties, the MPAs from feudal class use this sector to target their clients and get electoral gains in return.

Table 3.7 reports result for the economic outcomes in the social sector. We check that how the presence of dynastic presence in the district affects the enrollment rates in schools. Column (1) in table 3.7 show that dynastic presence in a district significantly reduces the enrollment rates in government schools in their districts. Thus despite spending and bringing more development projects to the districts, the enrolment rate in schools is not increasing. Next, we examine the impact of dynastic legislators on the number of beds in government hospitals and the number of patients

treated in government hospitals. We find that both the number of beds in government hospitals and the number of patients treated in government hospitals has declined significantly by the presence of dynastic legislators in a district. Hence, dynastic legislators are not using public funds to increase the number of beds in government hospitals nor patients treated at government hospitals are increased in their districts.

For checking the robustness of the models estimated in table 3.6 and table 3.7, we have estimated the equations of economic outcomes by taking the first difference of the dependent variables to measure the impact of dynasties on yearly change in these indicators. Moreover, we have estimated equations in table 3.7 by taking per capita enrollment, the number of beds per capita, and the number of patients treated per capita as dependent variables. Results from these estimations are given in appendix K. Our baseline findings remained robust to these alternative measurements of the dependent variables.

The public prefers private schools and hospitals over government institutes due to their poor performance. The pattern of increased spending with null effects on public services is consistent with previous work by Caselli and Michaels (2013) and Monteiro and Ferraz (2010). Similarly, the study findings are also consistent with the theoretical predictions and empirical findings by Asako et al. (2015). In sum, the negative coefficient on the economic indicators both in social and infrastructure sectors suggests that the dynastic legislators efficiently spend public funds.

This inefficiency results in poor policy outcomes even though they deliver higher distributive benefits for their home districts. The significant and positive coefficient on the Feudal variable explains this phenomenon to some extent. Dynastic legislators rely on conditional exchange with their clients and spend resources only on a small fraction of the population and in sectors with targeted benefits. Even though

the feudal dynasty is the most retrogressive in terms of performance, road sector performance is positive if the legislator is feudal. The reason is that the roads are the most visible and geographically targeted area. Hence, the inefficiency and misuse of the public money result in poor performance of the districts dominated by the dynastic legislators.

Theories of pork barrel, strategic redistribution, and credit claiming postulates that the politicians in developing economies seek to deliver the public goods which are highly visible, politically popular and locally targeted. These types of public goods include basic social infrastructures like schools, health clinics, and sanitation-related provisions. Williams (2017) has proposed that poor delivery in these goods is primarily because the governments in the developing economies are notorious for leaving the development projects incomplete which results in no value for the electorates. He has proposed three explanations for the non-completion of development projects. First, is the corruption executed for the sake of private gain or to finance political activities? The money is stolen by someone therefore the projects go unfinished (Samuels, 2002; B. Olken, 2007; Pande, 2007). This hypothesis seems to be most relevant in our context as we have enough evidence (will explain shortly) of corruption in development projects in Pakistan. The second explanation is clientelism where projects are left unfinished deliberately to enhance their reelection value for the electorates (Robinson & Torvik, 2005). Third, non-completion could be the result of dynamically inconsistent collective choice processes over project distribution, in which political actors' inability to sustain inter-temporal bargains among each other leads to erratic project implementation. The first two explanations can be supported with evidence from Pakistan.

The inefficiency of development spending in Pakistan can be explained through two important channels. Number one is the fact that there is a discrepancy between the actual allocations and budgetary allocations for the development projects in Pakistan. It is a common practice in Pakistan to adjust the current budget by withdrawing money from development projects. For example in fiscal 2017-2018 the budget estimates of development expenditures in Punjab were 550 billion rupees while the actual revised estimates for the same year were 532.5 billion rupees. Similarly, in the fiscal year, 2018-2019 the allocated amount for development was 635 billion rupees while actual spending made was 576.8 billion rupees which are 10% below the budgeted amount. Partially, the low rate of return on development spending may be explained by this discrepancy.

The second and the most important leakage is corruption specifically in the context of Pakistan. Pakistani Politicians, irrespective of their party platforms, dynastic or geographical base, are notorious for the misuse of public money at large. Corruption charges on public office holders have become the daily talk in Pakistan. National Accountability Bureau (NAB) published a document about 179 mega corruption²⁷ cases in October 2019. Ironically the majority of politicians making to

²⁷ I) Inquiry of 14 million rupees scam against Shah Nawaz Marri, Minister Sports, Balochistan Assembly, Quetta.

Investigation Against Nawab Aslam Khan Raisanni Ex-Chief Minister Balochistan and Others for misuse of authority

ii) Inquiry against Firdous Ashiq Awan Ex MNA for Misuse of authority, and embezzlement in movable property

iii) Inquiry against Raja Pervez Ashraf, Ex-Prime Minister, for Misuse of authority in the release of funds for the dual road from Sohawa to Chakwal & Mandra to Gujar Khan

iv) Investigation against Ch. Shujaat Hussain, Ex Federal Minister, Ch. Pervaiz Ellahi, Gujrat for Misuse of authority, Assets beyond means, 2.428 Billion Investigation under progress

v) The investigation against Mian Muhammad Nawaz Sharif, PM and Shahbaz Sharif, CM and others for Misuse of authority in the construction of Road from Raiwind to Sharif Family House and thus misappropriated Rs. 125.664 Million

vi) The investigation against Mian Nawaz Sharif ExPM and others for Illegal appointments in FIA – Misuse of authority

vii) Investigation Against Aftab Ahmed Khan Sherpao, Ex-Chief Minister KP / Ex Federal Interior Minister / Sitting viii) MNA for Accumulation of Assets Beyond Known Sources of Income

that list belong to the powerful dynastic families from all over Pakistan. To start with the Sharif's who are the most powerful urban-based dynasty in Punjab, almost every member of this family has been charged for corruption. Three-time Ex-Prime Minister Nawaz Sharif, his younger brother and Ex-Chief Minister Punjab, Shahbaz Sharif, his son Hamza Shahbaz, Nawaz Sharif's daughter Maryum Nawaz, her husband Captain Safder all are facing or have been convicted for the misuse of official positions, embezzlement in public funds and for keeping resources beyond their means. The National Accountability Bureau in February (2019) had filed a reference against Shahbaz Sharif and his Son Hamza Shahbaz alleging that the former chief minister of Punjab misused his authority by using public funds for the construction of a bridge to facilitate the Ramzan mills, owned by his sons. Shahbaz Sharif was also accused of influencing authorities to award contracts for a government-run housing program for low-income citizens to a company with which he had political affiliations. Sharif is the younger brother of former Prime Minister Nawaz Sharif, who was removed from office by the Supreme Court in 2017 over corruption allegations. The court in July sentenced the former leader and his daughter to 10-year and seven-year terms in prison, respectively, over the purchase of luxury apartments in London in the 1990s. Another prominent leader of PMLN and Ex-Prime minister Shahid Khaqan Abbasi is facing charges of corruption in liquefied natural gas (LNG terminals) built-in 2016 and 2017. In December 2019, Ahsan Iqbal, a top leader from PMLN was arrested for alleged corruption in Narowal sports city complex which is a federally funded development scheme. Ex-president of Pakistan, Asif Ali Zardari and the opposition leader Khurshid Shah from PPP are also under investigation of the National

ix) Inquiry against Ihsan Shah Ex-Minister Authorities of Industries & Commerce for Misuse of Authority

Accountability Bureau for corruption charges (Dawn News and Express Tribune (various Issues)).

The evidence is enough to support our hypothesis that being dynastic gives power to the politicians for diverting more resources to their constituencies. However, the money is misappropriated for personal gains and to target specific localities and people as the Ramazan Sugar mills case depicts. The conduct of the Sharif brothers and their family also points towards the patron-client nature of redistributive politics. They have been alleged of using their authority to divert resources towards specific benefit groups and people. Asako et al. (2015) claimed that the dynasties use public funds inefficiently because they spend them on specific factions of people. Henceforth, the evidence from Punjab supports their claim.

3.6 CONCLUDING REMARKS

Democracies all over the world are dominated by dynasties. Existing literature postulates that dynastic politicians based on their familial lines inherit substantial electoral and bargaining power. We have tested the impact of dynasties on the distributive benefits and policy outcomes empirically. We have used district-level data from the Punjab province of Pakistan for the period 2002 to 2017 for this study. Development budget allocated through Annual development plans (ADP) on education, health, roads & bridges, and water supply & sanitation is used to test the impact of dynastic legislators on the distributive benefits in the development sector. School enrollment, number of patients treated in government hospitals, number of beds in government hospital and length of provincial and farm to market roads in districts are used for the economic conditions of a district in the presence of dynastic legislators. Since the development budget is determined on a discretionary basis and

no definite formula is adopted for deciding district wise horizontal shares, therefore, it is subject to massive political influence. Moreover, the incidence of dynasties in Punjab is nearly 50% of the total representatives, which provides an intriguing scenario to test the distributive and economic consequences of this familial type of politics. The empirical findings of the study show that the dynastic legislators as compared to the non-dynastic legislators fetch larger distributive benefits to their districts. Nonetheless, the presence of dynastic legislators harms the economic performance of their districts despite bringing greater public resources. We propose three country-level factors to explain this surprising discrepancy between allocations and outcomes. The discrepancy in the allocated and actual realized development expenditures, widespread corruption by the dynastic politicians and patron-client ties overwhelming the distributive politics in Pakistan cause the low performance of development spending. The findings of the study imply that democratic policy-making without giving due consideration to the type of elected representatives will not bring desired results. Moreover, dynastic legislators' dominance in the legislative assemblies of Pakistan may result in less optimal economic policies for the public of Pakistan at large. These Implications may be applied equally to the other democracies overwhelmed by family politics.

We suggest the need to implement institutional reforms in this context to break the circle of this perpetuating power structure. Two notable efforts have been made in Pakistan history so far to disentangle the power of dynasties in Pakistan. First, the electoral body disqualification ordinance (EBDO) imposed by Field Marshal Ayub Khan in 1959. Ayub Khan introduced this ordinance to break the vicious circle of power held by powerful politicians and dynasties. He particularly targeted politicians from East Pakistan with the help of this ordinance. However, he ended up establishing

a dynasty of his own (Gohar Ayub and his son). Second, the imposition of the bachelor degree requirement for the contenders running for the national and provincial assemblies introduced by Ex-President of Pakistan, General Pervez Musharraf, to untie this familial political setup in 2002. This effort also went in vain because the majority of politicians succeeded in introducing their young family members into politics as a result. Policy reform free from personal interests is necessary to address the negative consequences created by these dynastic politicians.

It is necessary to tie the entry of new aspirants from a dynastic family with some performance indicators of the old family members. District development indicators may be used to assess the performance of the elected MPAs. Moreover, some term limits may also be imposed on candidates to run for elections in their subsequent terms.

Candidates are required to submit an affidavit in the name of Form-B while applying for nomination as a candidate in the Pakistan assemblies' general elections²⁸. Clause (N) of this affidavit asks candidates about their performance as elected members from a particular constituency in their previous terms. Effective use of this clause may make a significant change regarding the accountability of elected MPAs. We suggest that the statements made in this clause by the candidates should be counter checked and imposed as a requirement to be selected as a candidate. This exercise may lead to enhance the sense of accountability in all the elected MPAs dynastic or non-dynastic alike.

The analysis can be extended further in many dimensions for future research. Firstly, it will be important to further distinguish the political dynasties by the source of dynastic relation to the dynastic member for example blood or marriage, or the

²⁸ A sample affidavit is attached as annexure d at the end

dynast was a founder or a decedent in that family or the dynasty was formed before 1947(in the colonial period) or developed after 1947. The analysis can be extended to other provinces of Pakistan because dynasties prevail all over Pakistan uniformly although with different geographical, cultural and institutional dynamics and level of development.

CONCLUSION

Provision of the public goods and services is a key function of governments all over the world. 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 the politicians. An extensive theoretical literature on the distributive politics has argued that electoral incentives of the incumbents play an important role in distorting the fair distribution of these resources. Absence of strict economic formulas and institutional rules in resource distribution structure magnifies the issue to a greater degree. The first essay of this dissertation is an attempt to investigate the potential manipulation in the 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 which distributes development schemes across districts. Availability of the district level budget data was the biggest challenge for conducting this study. Annual development plans has been used as a proxy measure for the development budget distribution by the provincial government across districts.

Using system GMM estimation technique, we have found significant resource diversion towards co-partisans at the district level. The funds are diverted more heavily to allied districts. The incumbents also use development funds to cater higher competition at the ballot by larger spending in the infrastructure sectors. However, they spend higher in education sector in the districts with higher voter turnout (showing higher mobilization of the voters). Overall conclusion is that the incumbents tend to focus on infrastructure sector more heavily than the social sector to meet their electoral incentives. We suggest 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 in future. 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 budgetary amendment complement or substitute campaigning. How campaigning financing laws affect not only electoral performance but also public funds allocation. Further research may also test the impact of this manipulation on re-election prospects of the incumbents. By calculating re-election probabilities, it would be possible to more directly test whether increases in transfers are larger to districts where the incumbent's re-election prospects are poor. Further research could also focus on other economic policy instruments and on other provinces.

Our second essay has focused on the electoral budget cycle where the incumbents may manipulate the pattern of fiscal and monetary indicators. This empirical study has utilized observations on the provincial development budget for 29 electoral districts of the Punjab province of Pakistan to test for the existence of manipulative electoral budget cycles. System GMM technique has been employed to control for the potential endogeneity of the explanatory variables. The basic conclusions that can be drawn from this analysis are favorable to the electoral budget cycle hypothesis. Development expenditures in the study period were reducing in post-electoral period and increasing gradually after that. The cycles are not only systematic but also go beyond the election year. Spending is systematically reduced in post-election years and then increased gradually. The cycle of positive spending is confined to the election year in water supply and sanitation sector, one and two years before elections in the education sector and three years before the elections in the roads and bridges sector. Health sector, however, seems to be less attractive for

enhancing re-election prospects in our case. Thus, elections have a differential impact on the components of provincial government development expenditure. Moreover, we have found a negative impact of the major ruling party (Pakistan Muslim League Nawaz) on the development spending in our data. Future research in this area can attempt to find out the institutional and structural causes for this strong electoral cycle in Pakistan. To formulate better policies for effective resource distribution which are not distorted by the political motives, it is essential to find out the causes which pave way for the occurrence of the political budget cycle.

In our third essay, we have tested the impact of dynasties on the distributive benefits and policy outcomes empirically. We have used district level data from the Punjab province of Pakistan for the period 2002 to 2017 for this study. Development budget allocated through Annual development plans (ADP) is used to test the impact of dynastic legislators on the distributive benefits in the development sector. School enrollment, number of patients treated in government hospitals, number of beds in government hospital and length of provincial and farm to market roads in districts are used for assessing the economic conditions of a district in the presence of dynastic legislators. Since development budget is determined on a discretionary basis and no definite formula is adopted for deciding district wise horizontal shares, therefore, it is subject to massive political influence. Moreover, incidence of dynasties in Punjab is nearly 50% of the total representatives, which provides an intriguing scenario to test the distributive and economic consequences of this familial type of politics. The empirical findings of the study show that the dynastic legislators as compared to the non-dynastic legislators fetch larger distributive benefits to their districts. Nonetheless, the presence of dynastic legislators has negative impact on the economic performance of their districts despite bringing greater public resources. We propose

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²⁹ A sample affidavit is attached as annexure L at the end

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Appendix A

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

| Variables | Roads & Bridges | | Water Supply | | Education | | Health | |
|---|------------------------|------------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| <i>Affiliation (Majority Above 50%)</i> | 1.188*** (0.438) | | 2.214*** (0.537) | | 1.519 (0.984) | | 0.714* (0.367) | |
| <i>Affiliation (Majority b/w 50-75%)</i> | | 1.159** (0.500) | | 1.528*** (0.367) | | 1.946* (1.086) | | 0.569 (0.447) |
| <i>Affiliation (Majority b/w 75-100%)</i> | | 1.213** (0.489) | | 1.425*** (0.492) | | 1.863* (1.105) | | 0.900* (0.492) |
| Potential Rivals | 0.00264 (0.0639) | 0.00309 (0.0641) | -0.179 (0.117) | -0.110 (0.0711) | 0.127 (0.157) | 0.115 (0.168) | -0.0806 (0.0999) | -0.0833 (0.100) |
| Voter Turnout | 0.00008* (4.42e-05) | 0.00008* (4.42e-05) | -0.00002 (2.39e-05) | 0.000026 (1.88e-05) | 0.00057*** (8.27e-05) | 0.00065*** (9.02e-05) | 0.00014*** (3.12e-05) | 0.00015*** (3.25e-05) |
| Lagged Dependent | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Year Dummies</i> | 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)

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

| Variables | Roads & Bridges Budget | | Water Supply Budget | | Education Budget | | Health Budget | |
|---|------------------------|----------------------|----------------------|-----------------------|----------------------|------------------------|---------------------|--------------------|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| <i>Affiliation (Majority Above 50%)</i> | 1.437 (0.879) | | 2.306*** (0.805) | | 1.458** (0.605) | | 3.351* (1.662) | |
| <i>Affiliation (Majority b/w 50-75%)</i> | | 1.311 (1.458) | | 1.165 (0.963) | | 0.846* (0.479) | | 0.740 (4.550) |
| <i>Affiliation (Majority b/w 75-100%)</i> | | -0.603 (1.673) | | 3.049*** (0.863) | | 1.519*** (0.484) | | 13.84 (13.21) |
| Potential Rivals | -0.361 (0.335) | -0.443 (0.466) | -0.262 (0.300) | -0.237 (0.230) | 0.107 (0.998) | 0.321 (0.453) | -1.592 (1.294) | -4.380 (5.620) |
| Voter Turnout | 0.00697 (0.00427) | 0.00309 (0.00423) | 0.00489 (0.00634) | -0.00126 (0.00486) | 0.00737 (0.00722) | -0.000948 (0.00709) | 0.0153 (0.00947) | 0.0205 (0.0252) |
| Lagged Dependent | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Year Dummies</i> | 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)

| Variables | Roads & Bridges Budget | | Water Supply Budget | | Education Budget | | Health Budget | |
|---|------------------------|-------------|---------------------|-------------|------------------|-------------|---------------|------------|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 1 |
| <i>Affiliation (Majority Above 50%)</i> | 1.210* | | 1.983*** | | 1.788 | | -0.451 | |
| | (0.620) | | (0.539) | | (1.474) | | (0.586) | |
| <i>Affiliation (Majority b/w 50-75%)</i> | | 1.305* | | 2.280*** | | 0.0196 | | 0.306 |
| | | (0.675) | | (0.546) | | (1.059) | | (0.726) |
| <i>Affiliation (Majority b/w 75-100%)</i> | | 0.798 | | 1.466 | | -1.474 | | -1.534 |
| | | (0.906) | | (1.455) | | (1.435) | | (1.528) |
| <i>Potential Rivals</i> | -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) |
| <i>Voter Turnout</i> | 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) |
| <i>Lagged Dependent</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| <i>Observations</i> | 563 | 563 | 556 | 556 | 557 | 557 | 561 | 561 |
| <i>Number of id</i> | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| <i>Sargan/p</i> | 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 |
| <i>AR(2)/p</i> | 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 |
| <i>AR(1)/p</i> | -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

Appendix E

| Robustness Test: Revised Definition of Potential Rival (Table 1.6 Regenerated) | | | | | |
|---|-------------------------|-----------------------|--------------------------|------------------------|-------------------------|
| VARIABLES | Combined Budget | Health | Education | Water Supply | Roads & Bridges |
| <i>Affiliation (Majority Above 50%)</i> | 0.380*** (0.131) | -0.752* (0.376) | 0.326* (0.161) | 0.247 (0.246) | 0.789*** (0.132) |
| <i>Number of Contestants</i> | 0.0308*** (0.00743) | -0.0941 (0.0880) | -0.0103* (0.00521) | 0.00113 (0.0107) | 0.0383*** (0.0126) |
| <i>Voter Turnout</i> | -0.000503 (0.000504) | 0.00585* (0.00300) | 0.000931** (0.000381) | 0.000106 (0.000700) | -0.000733 (0.000453) |
| <i>Lagged Dependent</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Observations</i> | 174 | 172 | 174 | 174 | 173 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 | 29 |
| <i>Sargan/Prob.</i> | 12.26/0.58 | 6.722/0.35 | 9.155/0.76 | 17.50/0.18 | 16.28/0.23 |
| <i>AR(2)/p</i> | -0.111/0.91 | 0.507/0.61 | -0.0215/0.98 | 0.391/0.69 | -1.275/0.20 |
| <i>AR(1)/p</i> | -1.894/0.06 | -1.717/0.1 | -3.221/0.00 | -2.627/0.008 | -3.415/0.00 |

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 F

| Robustness Test: Revised Definition of Potential Rival (Table 1.7 Regenerated) | | | | | |
|---|-----------------------|------------------------|------------------------|-----------------------|-------------------------|
| Variables | Combined Budget | Health | Education | Water Supply | Roads & Bridges |
| <i>Affiliation (Majority b/w 50-75%)</i> | 0.597*** (0.136) | -0.465 (0.322) | -0.162* (0.0909) | 0.856** (0.339) | 0.769*** (0.179) |
| <i>Affiliation (Majority b/w 75-100%)</i> | 0.473*** (0.137) | -0.364 (0.420) | 0.141 (0.118) | 1.215*** (0.296) | 0.891*** (0.174) |
| <i>Number of Contestants</i> | -0.00521 (0.0178) | -0.0807*** (0.0285) | -0.00340 (0.00430) | 0.0641* (0.0375) | 0.0194 (0.0201) |
| <i>Voter Turnout</i> | 0.000532 (0.00119) | 0.00221 (0.00162) | 4.94e-05 (0.000424) | -0.00365 (0.00264) | -0.00123* (0.000622) |
| <i>Lagged Dependent</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Controls</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Year Dummies</i> | Yes | Yes | Yes | Yes | Yes |
| <i>Observations</i> | 174 | 172 | 174 | 174 | 173 |
| <i>Number of id</i> | 29 | 29 | 29 | 29 | 29 |
| <i>Sargan/Prob.</i> | 8.305/0.59 | 12.15/0.27 | 15.06/0.72 | 11.24/0.34 | 10.80/0.37 |
| <i>AR(1)/p</i> | -2.192/0.029 | -3.419/0.00 | -3.105/0.00 | -2.538/0.011 | -3.425/0.00 |
| <i>AR(2)/p</i> | -0.444/0.66 | 0.667/0.51 | 0.451/0.65 | 0.512/0.61 | -1.279/0.20 |

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 G

| Half Sample Estimation from 2002-2017 (After Inclusion of Politician Level Characteristics) | | | | | | | | |
|---|------------|------------|--------------|------------|------------|-----------|------------|-----------|
| VARIABLES | Roads | | Water Supply | | Education | | Health | |
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| <i>Affiliation (Majority Above 50%)</i> | 1.658 | | 1.680 | | -3.204 | | -0.721 | |
| | (3.100) | | (1.904) | | (4.930) | | (2.389) | |
| <i>Affiliation (Majority b/w 50-75%)</i> | | 0.744 | | -0.777 | | 1.794 | | 4.772 |
| | | (3.632) | | (2.922) | | (4.981) | | (4.394) |
| <i>Affiliation (Majority b/w 75-100%)</i> | | 6.030 | | 6.169 | | -0.0206 | | -5.452 |
| | | (6.544) | | (5.561) | | (3.110) | | (9.623) |
| <i>Potential Rivals</i> | 0.0854 | 0.294 | -0.128* | -0.0745 | -0.0307 | 0.133 | -0.120 | -0.274 |
| | (0.0921) | (0.281) | (0.0720) | (0.150) | (0.163) | (0.199) | (0.201) | (0.205) |
| <i>Voter Turnout</i> | 2.736 | 3.566 | -0.960 | 1.405 | -2.870 | 9.123 | -7.954 | -17.16 |
| | (4.196) | (4.650) | (4.816) | (6.826) | (10.22) | (10.73) | (34.67) | (35.72) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Lagged Dependent | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 435 | 435 | 435 | 435 | 435 | 435 | 435 | 435 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| AR1/prob. | -1.93/0.05 | -1.55/0.12 | -2.96/0.00 | -2.34/0.02 | -0.96/0.33 | -3.62/0.0 | -1.80/0.07 | -0.69/0.5 |
| hansen | 1.62/1 | 0.75/1 | 7.860.9 | 4.29/0.9 | 8.21/0.9 | 10.9/0.7 | 5.25/0.9 | 2.04/1 |
| AR2/Prob. | 0.980/0.32 | 0.31/0.76 | 0.039/0.97 | 0.11/0.91 | 0.58/0.56 | 0.99/0.32 | 0.64/0.56 | 1.73/0.08 |

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) and politician characteristics (dynasty, average education of the MPAs, terms in office to capture experience and proportion of MPAs from landowning class). 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 H

Literacy Rates 10 Years and Older as percent of Total Population from 2004 to 2014

| Sr | | | Urban | Urban | Urban | Rural | Rural | Rural | | | |
|----|----------|------|-------|--------|-------|-------|--------|-------|------|--------|-------|
| No | District | Rank | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| 1 | RWD | 2.0 | 89.3 | 77.5 | 83.7 | 86.7 | 65.3 | 75.5 | 88.0 | 71.5 | 79.7 |
| 2 | LHR | 3.0 | 83.5 | 76.8 | 80.2 | 67.5 | 55.8 | 61.8 | 80.5 | 73.2 | 77.0 |
| 3 | CHK | 4.5 | 90.5 | 76.5 | 83.3 | 86.3 | 62.3 | 73.8 | 87.2 | 64.3 | 75.2 |
| 4 | JEH | 4.5 | 88.8 | 79.8 | 84.2 | 85.0 | 60.2 | 71.8 | 86.0 | 65.5 | 75.2 |
| 5 | GUJ | 8.9 | 82.5 | 73.9 | 78.1 | 72.9 | 57.1 | 64.6 | 74.9 | 60.5 | 67.3 |
| 6 | FSD | 10.0 | 78.3 | 71.3 | 74.8 | 63.8 | 46.8 | 55.5 | 70.3 | 57.7 | 64.2 |
| 7 | TTS | 10.0 | 81.0 | 71.0 | 75.8 | 70.5 | 54.0 | 62.2 | 73.0 | 57.5 | 65.0 |
| 8 | SKT | 11.5 | 79.8 | 72.6 | 76.0 | 67.3 | 55.0 | 60.5 | 69.9 | 58.5 | 63.6 |
| 9 | ATK | 11.7 | 86.2 | 67.7 | 77.0 | 75.5 | 45.5 | 60.0 | 78.2 | 50.3 | 63.8 |
| 10 | GUJR | 12.8 | 76.6 | 66.9 | 71.7 | 66.3 | 50.9 | 58.4 | 70.5 | 57.2 | 63.7 |
| 11 | SHK | 13.2 | 78.3 | 67.8 | 72.8 | 64.8 | 48.2 | 56.3 | 68.8 | 54.1 | 61.4 |
| 12 | SAR | 15.3 | 82.0 | 66.8 | 74.3 | 68.3 | 39.7 | 53.7 | 72.2 | 47.3 | 59.7 |
| 13 | MWL | 17.5 | 81.5 | 55.2 | 68.5 | 74.7 | 35.8 | 55.3 | 76.3 | 40.2 | 58.2 |
| 14 | KHU | 18.2 | 80.3 | 52.8 | 66.8 | 73.3 | 35.7 | 54.0 | 75.2 | 40.2 | 57.5 |
| 15 | LYA | 20.0 | 83.2 | 65.8 | 74.5 | 66.8 | 37.3 | 52.5 | 69.5 | 42.2 | 56.5 |
| 16 | KAS | 22.3 | 70.3 | 58.5 | 64.3 | 61.0 | 40.0 | 50.7 | 63.8 | 44.7 | 54.3 |
| 17 | KHN | 22.8 | 77.8 | 59.7 | 69.0 | 64.3 | 35.2 | 50.0 | 67.0 | 40.2 | 53.7 |
| 18 | BHK | 23.2 | 78.8 | 58.3 | 69.0 | 66.8 | 31.7 | 50.2 | 69.0 | 36.2 | 53.2 |
| 19 | MTN | 25.3 | 73.5 | 57.8 | 66.0 | 56.7 | 30.3 | 43.8 | 61.7 | 38.9 | 50.6 |
| 20 | SWL | 25.4 | 79.8 | 67.1 | 73.3 | 58.8 | 34.8 | 46.6 | 62.2 | 40.1 | 51.0 |
| 21 | VHR | 26.0 | 76.5 | 62.5 | 69.5 | 59.3 | 33.0 | 46.2 | 62.3 | 38.3 | 50.3 |
| 22 | OKA | 27.3 | 75.5 | 60.7 | 68.3 | 54.7 | 32.8 | 43.7 | 59.3 | 39.2 | 49.3 |
| 23 | JHG | 27.9 | 75.0 | 60.8 | 67.9 | 59.4 | 25.2 | 42.3 | 63.5 | 34.3 | 48.8 |
| 24 | RYK | 28.2 | 73.3 | 60.7 | 67.0 | 49.0 | 23.5 | 36.3 | 54.2 | 31.3 | 43.0 |
| 25 | BWP | 31.7 | 71.2 | 59.0 | 65.2 | 47.0 | 25.0 | 36.0 | 54.2 | 35.0 | 44.5 |
| 26 | BWN | 32.5 | 71.8 | 60.3 | 65.0 | 50.3 | 34.8 | 45.7 | 54.7 | 40.2 | 44.3 |
| 27 | DGK | 33.0 | 79.5 | 61.7 | 70.7 | 54.3 | 22.0 | 38.7 | 58.0 | 27.7 | 43.2 |
| 28 | MGR | 33.2 | 75.3 | 58.3 | 67.0 | 52.8 | 23.5 | 38.5 | 56.5 | 28.7 | 42.8 |
| 29 | RJP | 35.7 | 76.2 | 55.5 | 66.2 | 41.7 | 16.0 | 29.8 | 46.5 | 21.8 | 34.8 |

Appendix I

| Adult Literacy Rates 15 years and Older as percent of Total Population from 2004 to 2014 | | | | | | | | | | |
|---|----------|------------|--------------|-------------|------------|--------------|-------------|------|--------|-------|
| Sr No | District | Urban Male | Urban Female | Urban Total | Rural Male | Rural Female | Rural Total | Male | Female | Total |
| 1 | RWD | 85.0 | 64.5 | 74.3 | 71.7 | 40.0 | 55.0 | 74.5 | 45.3 | 59.3 |
| 2 | LHR | 77.0 | 52.5 | 65.3 | 62.3 | 24.2 | 44.2 | 64.8 | 29.0 | 47.7 |
| 3 | CHK | 71.7 | 55.8 | 63.7 | 51.0 | 28.3 | 39.7 | 55.3 | 34.0 | 44.7 |
| 4 | JEH | 70.7 | 56.0 | 63.3 | 45.5 | 21.7 | 33.5 | 53.0 | 31.8 | 42.2 |
| 5 | GUJ | 90.7 | 74.3 | 82.2 | 84.5 | 57.8 | 70.3 | 85.5 | 60.2 | 72.0 |
| 6 | FSD | 78.0 | 56.2 | 67.2 | 49.0 | 16.2 | 32.8 | 53.2 | 21.5 | 37.8 |
| 7 | TTS | 77.2 | 68.7 | 73.2 | 61.3 | 42.3 | 51.8 | 68.7 | 54.3 | 61.8 |
| 8 | SKT | 80.9 | 70.5 | 75.6 | 70.2 | 51.7 | 60.3 | 72.4 | 55.5 | 63.6 |
| 9 | ATK | 74.3 | 62.5 | 68.6 | 62.7 | 45.5 | 54.1 | 67.6 | 52.3 | 59.9 |
| 10 | GUJR | 87.5 | 76.7 | 82.2 | 82.5 | 55.5 | 67.7 | 83.8 | 61.3 | 71.7 |
| 11 | SHK | 73.7 | 57.1 | 65.3 | 55.4 | 20.3 | 37.8 | 60.3 | 29.8 | 44.8 |
| 12 | SAR | 68.0 | 54.2 | 61.0 | 57.3 | 32.7 | 44.8 | 60.0 | 38.3 | 49.3 |
| 13 | MWL | 75.5 | 53.8 | 64.7 | 61.8 | 30.2 | 45.7 | 64.5 | 34.5 | 49.7 |
| 14 | KHU | 78.2 | 47.3 | 62.7 | 70.0 | 29.7 | 48.8 | 72.3 | 34.2 | 52.3 |
| 15 | LYA | 82.7 | 74.7 | 79.0 | 64.8 | 51.2 | 58.2 | 79.5 | 70.8 | 75.3 |
| 16 | KAS | 81.7 | 60.7 | 71.3 | 62.3 | 28.5 | 45.8 | 65.5 | 33.8 | 50.2 |
| 17 | KHN | 74.2 | 52.7 | 63.5 | 49.0 | 18.0 | 33.7 | 52.7 | 23.2 | 38.2 |
| 18 | BHK | 73.7 | 56.5 | 65.0 | 50.8 | 27.0 | 38.7 | 56.2 | 33.7 | 45.0 |
| 19 | MTN | 79.8 | 48.8 | 64.3 | 70.8 | 29.2 | 49.8 | 72.8 | 33.3 | 53.0 |
| 20 | SWL | 72.6 | 53.9 | 63.4 | 53.8 | 24.4 | 39.3 | 59.7 | 33.9 | 47.1 |
| 21 | VHR | 74.7 | 50.2 | 62.8 | 37.2 | 10.2 | 24.2 | 42.2 | 16.0 | 29.5 |
| 22 | OKA | 71.5 | 56.7 | 64.2 | 47.0 | 19.7 | 33.0 | 52.2 | 27.2 | 39.7 |
| 23 | JHG | 80.5 | 62.7 | 71.0 | 64.7 | 33.0 | 48.8 | 69.0 | 41.5 | 55.0 |
| 24 | RYK | 79.4 | 70.4 | 74.8 | 65.9 | 51.0 | 57.4 | 68.7 | 54.8 | 61.2 |
| 25 | BWP | 77.0 | 64.4 | 70.7 | 61.8 | 43.3 | 52.4 | 66.6 | 49.4 | 57.8 |
| 26 | BWN | 88.7 | 74.8 | 81.8 | 85.2 | 60.3 | 72.2 | 87.2 | 67.5 | 77.0 |
| 27 | DGK | 78.5 | 63.3 | 70.8 | 55.7 | 30.0 | 42.4 | 59.3 | 35.4 | 47.3 |
| 28 | MGR | 80.3 | 66.8 | 73.5 | 67.5 | 48.8 | 57.8 | 70.0 | 52.5 | 61.0 |
| 29 | RJP | 74.7 | 56.8 | 65.8 | 55.5 | 28.0 | 41.8 | 58.7 | 33.0 | 46.2 |

Appendix J

| Population That has Ever Attended School as percent of Total Population from 2004 to 2014 | | | | | | | | | | |
|--|----------|------------|--------------|-------------|------------|--------------|-------------|------|--------|-------|
| Sr No | District | Urban Male | Urban Female | Urban Total | Rural Male | Rural Female | Rural Total | Male | Female | Total |
| 1 | RWD | 89.8 | 77.8 | 84.0 | 87.8 | 65.5 | 76.0 | 88.7 | 71.8 | 80.2 |
| 2 | LHR | 84.3 | 77.7 | 81.2 | 71.5 | 57.7 | 64.7 | 82.2 | 74.0 | 78.3 |
| 3 | CHK | 89.7 | 76.3 | 82.8 | 86.0 | 61.0 | 72.8 | 86.5 | 63.0 | 74.0 |
| 4 | JEH | 88.5 | 78.7 | 83.3 | 85.0 | 62.2 | 73.2 | 85.8 | 66.5 | 75.7 |
| 5 | GUJ | 84.9 | 75.4 | 80.0 | 75.9 | 59.1 | 67.3 | 77.7 | 62.4 | 69.8 |
| 6 | FSD | 81.3 | 73.5 | 77.5 | 68.0 | 49.7 | 58.8 | 74.0 | 60.3 | 67.2 |
| 7 | TTS | 83.7 | 71.5 | 77.5 | 72.3 | 55.7 | 63.8 | 74.7 | 59.0 | 66.5 |
| 8 | SKT | 86.5 | 77.5 | 81.8 | 77.3 | 63.8 | 69.7 | 79.4 | 66.4 | 72.4 |
| 9 | ATK | 86.7 | 68.3 | 77.2 | 77.2 | 48.0 | 62.2 | 79.0 | 52.5 | 65.7 |
| 10 | GUJR | 79.2 | 68.8 | 74.0 | 70.3 | 54.4 | 62.3 | 73.8 | 59.9 | 66.9 |
| 11 | SHK | 79.8 | 69.1 | 74.3 | 67.6 | 50.3 | 59.2 | 71.2 | 55.9 | 63.5 |
| 12 | SAR | 82.5 | 67.3 | 74.8 | 69.3 | 40.3 | 54.8 | 73.2 | 48.2 | 60.5 |
| 13 | MWL | 82.0 | 55.3 | 68.7 | 75.0 | 36.2 | 55.5 | 76.7 | 40.3 | 58.5 |
| 14 | KHU | 81.0 | 53.3 | 67.2 | 74.5 | 36.3 | 55.0 | 76.2 | 40.8 | 58.5 |
| 15 | LYA | 84.2 | 66.3 | 75.3 | 68.0 | 37.0 | 53.0 | 70.8 | 42.0 | 56.8 |
| 16 | KAS | 73.2 | 60.3 | 66.8 | 64.7 | 43.2 | 54.2 | 66.8 | 47.8 | 57.3 |
| 17 | KHN | 80.0 | 60.5 | 70.2 | 67.2 | 36.7 | 52.0 | 69.7 | 41.2 | 55.7 |
| 18 | BHK | 79.3 | 57.5 | 68.8 | 67.3 | 32.0 | 50.5 | 69.2 | 36.2 | 53.5 |
| 19 | MTN | 75.6 | 58.8 | 67.5 | 58.8 | 31.5 | 45.7 | 63.9 | 40.2 | 52.3 |
| 20 | SWL | 81.7 | 68.7 | 75.2 | 62.8 | 36.8 | 49.8 | 66.0 | 42.3 | 53.8 |
| 21 | VHR | 79.0 | 63.2 | 70.8 | 61.3 | 34.5 | 48.0 | 64.3 | 39.5 | 52.0 |
| 22 | OKA | 77.2 | 62.5 | 69.8 | 58.3 | 35.2 | 46.5 | 62.5 | 41.0 | 51.8 |
| 23 | JHG | 77.7 | 62.6 | 70.2 | 63.3 | 28.1 | 45.7 | 67.2 | 36.9 | 52.0 |
| 24 | RYK | 75.3 | 60.5 | 68.2 | 53.5 | 25.5 | 39.5 | 58.0 | 33.0 | 45.5 |
| 25 | BWP | 76.5 | 61.8 | 69.3 | 53.5 | 28.2 | 41.0 | 60.5 | 37.8 | 49.3 |
| 26 | BWN | 78.8 | 62.7 | 70.7 | 60.5 | 36.0 | 48.3 | 64.3 | 41.5 | 53.0 |
| 27 | DGK | 79.5 | 61.2 | 70.5 | 55.2 | 20.5 | 38.5 | 58.7 | 26.5 | 42.8 |
| 28 | MGR | 76.7 | 60.2 | 68.3 | 56.2 | 25.2 | 41.0 | 59.3 | 30.5 | 45.3 |
| 29 | RJP | 76.0 | 55.8 | 66.2 | 42.0 | 16.2 | 29.8 | 46.3 | 22.0 | 34.8 |

Appendix K

Robustness: Estimation at First Difference for Yearly Change and on Per-Capita Indicators in Social Sectors

| VARIABLES | Estimations for Yearly Changes in physical Infrastructure Sector | | Estimations for Yearly Changes in Social Sector indicators | | | Estimations on Per-capita indicators for Social Sectors | | |
|------------------|--|-----------------------------|--|-----------------------------|----------------------------|---|---------------------|----------------------|
| | Provincial Road Length | Farm to Market Road Length | Enrollment | Govt Hospital Beds | Patients Treated | Enrollment | Govt Hospital Beds | Patients Treated |
| Dynasty | -29.824*** (6.978) | -55.368*** (10.415) | -2,349.591*** (565.927) | -85.681*** (9.683) | -218.141*** (46.428) | -2.929*** (0.973) | 0.007*** (0.001) | -0.012** (0.005) |
| Affiliation | -205.814 (349.427) | 853.620 (1,124.793) | -86,095.046 (59,728.540) | -649.302 (874.028) | -2,044.537 (6,380.395) | -107.423** (47.027) | -0.047 (0.083) | 0.456 (0.572) |
| Terms | -205.899 (156.412) | -1,490.166*** (294.743) | -20,086.432 (12,723.527) | 209.432 (359.561) | -1,145.036 (2,525.400) | 14.617 (25.942) | 0.027 (0.049) | -0.371* (0.214) |
| Feudal MPAs | 798.753 (753.847) | 3,912.008*** (1,361.361) | 212,266.799*** (69,043.243) | -27.036 (1,576.316) | -2,027.861 (3,788.860) | 100.477 (71.465) | 0.001 (0.096) | -1.346*** (0.334) |
| Urbanization | -330.460 (469.787) | 18,019.830 (11,005.279) | -849,310.099 (1120997.628) | -2,485.101** (912.101) | -1,281.594 (8,449.184) | -160.730 (155.406) | -0.182 (0.282) | -11.599 (11.099) |
| Constant | 1,122.847 (892.694) | -35,089.700 (21,668.112) | 1299591.484 (2279259.039) | 8,703.942*** (2,556.638) | 10,689.449 (15,930.193) | 524.945 (325.643) | 0.365 (0.563) | 24.437 (21.316) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Lagged Dependent | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 406 | 406 | 406 | 406 | 406 | 435 | 435 | 435 |
| Number of id | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| AR 1/prob. | -1.53/0.12 | -1.16/0.24 | -2.46/0.01 | -2.32/0.02 | -2.64/0.0 | -2.25/0.025 | -2.41/0/02 | -1.12/0.26 |
| Hansen/prob. | 27.11/0.1 | 27.49/0.09 | 26.89/0.08 | 16.11/0.6 | 24.64/0.13 | 27.98/0.11 | 22.92/0.9 | 28.21/0.1 |
| AR 2/prob. | -0.67/0.5 | -1.42/0.15 | 1.86/0.06 | 0.14/0.88 | -0.21/0/83 | 0.52/0.6 | -0.57/0.57 | -1.55/0/12 |

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. District-level data of 29 districts from Punjab for the period 2002 to 2017 has been used for these estimations. Length of provincial and farm to market roads, school enrollment, and patients treated in government hospitals and numbers of government hospital beds at first difference are used as dependent variables in first five columns of the table. In next three columns school enrollment, patients treated in government hospitals and number of government hospital beds is used in per-capita form/ Instruments for difference equations are lag values of the dependent variable. Standard instruments for the level equation are year dummies and GMM type instruments are difference of lags of the dependent variable. *** p<0.01, ** p<0.05, * p<0.1

Appendix L

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FORM-B
[See sections 60, 110 & 137]

STATEMENT OF ASSETS AND LIABILITIES

I, candidate/Member, *National Assembly/ Senate, Provincial Assembly, Punjab/ Sindh/ Khyber Pakhtunkhwa/Balochistan from constituency from the seats reserved for women/ non-Muslims hereby declare that no immovable and movable property, including bonds, shares, certificates, securities, insurance policies and jewellery, other than specified herein below, is held by me, my spouse(s) and dependent children on 30th day of June,

ASSETS

| ASSET 1 | COST OF ASSET 2 | REMARKS 3 |
|--|--------------------|-------------------------------------|
| 1. IMMOVABLE PROPERTY | | |
| Open plots, houses, apartments, commercial buildings, under construction properties, agricultural property, etc. | 2975000 | 1-15-6 186/7R 22-17 186/7R |
| (a) Held within Pakistan* | | |
| (i) _____ | | |
| (ii) <u>Chav-186/7R</u> | | |
| (iii) <u>187/7R</u> | | |
| (b) Held outside Pakistan* | | |
| (i) _____ | | |
| (ii) <u>Nil</u> | | |
| 2. MOVABLE ASSETS | | |
| (a) Business capital within Pakistan | | |
| (i) Name of business | Real Estate | |
| (ii) Capital amount | | |
| (b) Business capital outside Pakistan | | |
| (i) Name of business | Nil | |
| (ii) Capital amount | | |
| (c) Assets brought or remitted from outside Pakistan* | | |
| (i) Bank drafts/Remittances | Nil | |
| (ii) Machinery | | |
| (iii) Other | | |
| (d) Assets brought out of remittances from abroad* | Nil | |

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| ASSET 1 | COST OF ASSET 2 | REMARKS 3 |
|--|--------------------|--------------|
| (e) Investments | | |
| (i) Stock and Shares | | |
| (ii) Debentures | | |
| (iii) National Investment (Unit) Trust | Nil | |
| (iv) ICP Certificates | | |
| (v) National Savings Schemes | | |
| - Defence Savings Certificate | | |
| - Special Savings Certificate | | |
| - Regular Income Certificate | | |
| (vi) Unsecured loans | | |
| (vii) Mortgages | | |
| (viii) Any other | | |
| (f) Motor Vehicles* | | |
| Make Model Reg. No. | | |
| (i) _____ | | |
| (ii) _____ | Nil | |
| (g) Jewellery, etc. | | |
| (i) Weight <u>5-29</u> | 270000 | |
| (ii) Description _____ | | |
| (h) Cash and Bank Accounts* | | |
| (i) Cash in hand | 1200000- | |
| (ii) Cash at Bank | Nil | |
| Account No. Bank & Branch | | |
| Current _____ | | |
| Deposit _____ | | |
| Savings _____ | | |
| Other Deposits _____ | | |
| (i) Furniture, Fittings & articles of personal use— | | |
| (j) Assets transferred to any person— | Nil | |
| (i) Without adequate consideration, or | | |
| (ii) by revocable transfer | | |
| (k) Any other assets | | |

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*Details to be annexed.

LIABILITIES

| LIABILITY | AMOUNT | REMARKS |
|--|--------|---------|
| (i) Mortgages secured on Property or land | Nil | |
| (ii) Unsecured Loans owing | | |
| (iii) Bank Overdraft | Yes | |
| (iv) Bank Loans | | |
| (v) Amounts due under Hire Purchase Agreement | | |
| (vi) House Building Loans | | |
| (vii) Advances from Provident Funds etc. | Nil | |
| (viii) Other debts due* | Nil | |
| (ix) Liabilities in the names of dependent children (in respect of assets standing in their names) | Nil | |
| Total | | |

*Details to be annexed.

VERIFICATION

I, Muhammad I. Iqbal S/o, W/o, D/o Muhammad - Amir
do hereby declare that, to the best of my knowledge and belief, the above statement of the assets and liabilities of myself, my spouse(s) and dependent children is correct and complete as on 30th June 2018 and nothing has been concealed therefrom.

Date: 11-6-2018

Signature of the Candidate/Member

Muhammad Asif Iqbal
Candidate for Class
Returning Officer PP-244
BNA/VIII Fort Abbas

PCPPL-156/PEC-28.04.2018 (23100 Forms)



- (ii) "mainly owned" shall mean holding or controlling a majority interest in a business concern;
- (iii) "taxes" include all taxes levied by Federal Government, Provincial Government or a local government, but shall not include taxes the recovery of which has been stayed or suspended by any order of a court or tribunal;
- (iv) "government dues and utility charges" shall, *inter alia*, include rent, charges of rest houses or lodges owned by the Federal Government, Provincial Governments, local governments or corporations established or controlled by such governments, but shall not include the government dues and utilities charges the recovery of which has been stayed or suspended by any order of a court or tribunal.

F. No case of criminal offences was pending against me, six months prior to filing of my nomination papers.
AND
The following cases of criminal offences were pending against me, six months prior to filing of this nomination:

| Title and number of case | Name of the Court |
|--------------------------|-------------------|
| Nil | |
| Nil | |
| Nil | |

G. My educational qualification is B.A., S.S., Physics, M.A., Post-graduate

H. My present occupation is F.A.V. M.A.S.

I. My passport number is Nil

J. My National tax number, if any, is Nil

K. The income tax paid by me during the last three assessment years/ financial years is given hereunder:—

| Total Income | *Source of income | Tax Year | Total Income Tax paid |
|--------------|-------------------|----------|-----------------------|
| Nil | Nil | | |
| Nil | Nil | | |
| Nil | Nil | | |

Note-II: Attach copies of income tax returns of the years mentioned above.
If more than one income sources, attach detail.

L. Detail in respect of my travel abroad during last three years and cost incurred thereon is as under: (attach complete copy of the passport and detail of expenditure)

| Year | Detail of countries visited | Period of stay | Cost incurred | Remarks |
|------|-----------------------------|----------------|---------------|---------|
| | Nil | | | |
| | Nil | | | |
| | Nil | | | |

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Candidate for Class
Returning Officer PP-244
BNA/VIII Fort Abbas

Rupees 50

M. The agricultural income tax paid by me during the last three years is given below:

| Tax Year | Land Holding | Agricultural Income | Total Agricultural Income Tax Paid |
|----------|--------------|---------------------|------------------------------------|
| 2016 | 24-12-6 | 82000 | Contract |
| 2017 | " | " | " |
| 2018 | " | " | " |

Note III: Attach copies of agricultural tax returns of the last three years mentioned above or the certificate issued by the authority concerned in this behalf.

N. Being elected as Member of National Assembly/Provincial Assembly from Constituency No. 234-B, I made important contributions for the benefit of my constituency the details of which are as follows:

- (i) Canal water
- (ii) Metal Roads
- (iii) Education
- (iv) To build up every Peoples for the Education of poor students who have more Education

O. I have paid a sum of Rs. Nil by way of contribution to the political party which has awarded me party ticket for this election. (Attach detail, if any).

P. I have received a sum of Rs. Nil from the party which has awarded me the party ticket (Attach detail, if any).

Q. I shall make all election expenditures out of the money deposited in the exclusive account opened for the purpose detail of which has been mentioned in the nomination form and I shall not make any transaction towards the election expenses through an account other than the above account.

R. I have not ceased to be a citizen of Pakistan nor have I acquired or applied for the citizenship of a foreign state.

OR

I possess Foreign Passport No. Nil issued by [name of country(s)].

S. I have no objection if information concerning myself in relation to acquisition of citizenship of foreign State or application of such citizenship is provided by any foreign state to the Ministry of Foreign Affairs of the Government of Pakistan or Election Commission of Pakistan.

ATTESTED

Rupees 50

T. The detail in respect of my Nets Assets is given as under:

- a. Net assets as on 30th June of current Financial Year 2017-18 Rs. 1,81,20,000
- b. Net assets as on 30th June of previous Financial Year 2016-17 Rs. 7,00,000
- c. Increase/decrease (a-b) Rs. 50,000

U. I acknowledge that failure to give detail regarding any item in respect of Form A and Form B shall render my nomination to contest election invalid or if any information given therein and hereinabove are found incorrect at any time, my election shall stand void ab initio.

V. I hereby assure that I shall abide by the Code of Conduct issued by the Election Commission.

Signature of candidate: [Signature]

Thumb impression of candidate: [Impression]

National Identity Card No. 511103-11152205-17

Address: Chak No. 1B, T.H.R. P.O. Kuchhalwala Tehsil, Fort Abbas, District, Punjab

Contact No. 0345-35-8700

Dated:

VERIFICATION ON OATH

I, [Signature] s/o, w/o, d/o [Signature] do hereby solemnly declare that, to the best of my knowledge and belief, the above contents of this affidavit are correct and nothing has been concealed therefrom.

Signature of the candidate: [Signature]

Date: 11.06.2018

Place: Fort Abbas

ATTESTED

Muhammad Asif Inaba
Civil Judge (Class)
Returning Officer PP-244
Fort Abbas

Attested by the Oath Commissioner.....

Note: This affidavit is to be provided on stamp paper that will be duly attested by an Oath Commissioner appointed under the Oaths Act, 1873 (X of 1873).