

# **Essays on Institutional Change: The Role of Privileged Groups**

*By*

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## *Preface*

Since the last few decades, the prescriptions for the problem of under-development changed substantially from the mere accumulation of capital and technological progress to the fundamental causes that actually shape both accumulation and technological progress, *i.e.* institutions. Institutions in general are humanly devised constraints that shape human interactions. They include both formal rules (e.g. constitutions, laws, and international regimes) and informal rules (e.g. norms, taboos, and conventions). The literature on the institutional perspective of economic development has arrived at two general consensuses. First, institutions that support the protection of property rights, exercise the rule of law, and enforce contracts efficiently are regarded as growth-enhancing. In contrast, the failure to do these functions proficiently is equivalent to failure in terms of achieving economic success. This conclusion is based on the premise that institutional framework constitutes the incentives structure in a society. Thus, the societies that encourage the accumulation of capital, the adoption of new technologies, and the investment in innovations through their incentives structures prosper; while those that fail to do so face the problem of severe under-development.

Second, the emphasis on institutions, in turn, has resulted in an active academic debate on the evolution of institutions. Several perspectives have been discussed in the literature with regard to the evolution of institutions. For instance, efficiency, ideologies and beliefs, historical accidents, and social conflict have been widely discussed in the literature. Although there is lack of agreement on what shape institutions; however, we have unanimity regarding the process of the emergence and change of institutions. Alternatively, in most of the notable literature, institutions are regarded as collective

choices that emerge, persist, and change endogenously, *i.e.* they emerge or change in light of the social interactions of individuals or groups.

This dissertation is related to the evolution of institutions. Our focus is on the social conflict view of institutions; in particular, we make an endeavor to study and discuss how the interaction of various privileged groups results in the prevailing institutional framework in a society. Second, our focus is on the formal institutions with special reference to developing countries. For our analysis, we divide the privileged groups into two types, *i.e.* private interest groups and public interest groups. Private interest groups are involved in production while public interest groups are associated with protection or regulation.

Given this framework, chapter 1 analyzes the manner in which the rent-seeking behavior of the state actors results in the inefficiency of institutional framework. In general, there are two types of rents that can be seized by the state actors: first are the rents that are generated in their interaction with citizens, *i.e.* corruption or rent-seeking; second are the windfall rents, *i.e.* natural resources wealth or foreign aid etc. Chapter 1, specifically, shows how these cumulative types of rents affect the uncoordinated rent-seeking behaviors of rulers and their agents; and what does it imply for institutional reforms? We show that in order to expropriate or sustain their rents, the rulers as well as their agents prevent institutional reforms as they are two of the privileged groups in initiating and enforcing such reforms. Thus, for societies, to come out of the bad institutions trap, substantial incentives need to be provided to these privileged groups so that to make corruption and rent-seeking less advantageous relative to those incentives.

Chapter 2 extends the argument established in chapter 1 by taking into account a particular state actor, *i.e.* the military. An argument is made in favour of the Social Conflict View of Institutions

by providing evidence from Zia's *Islamization* policy in Pakistan. Furthermore, in order to draw some general proposition from the historical narrative, we provide a model of two-stage rent-seeking activities. The detailed descriptive analysis of Zia's *Islamization* policy shows that Zia's *Islamization* amendments were motivated by his search for legitimacy, and his rent-seeking interests. Zia's collaboration with another privileged group, *i.e.* the religious circles in Pakistan, provided him domestic legitimacy as *Islamization* was a popular demand in Pakistan since the establishment of Pakistan. Second, this collaboration was also helpful in attaining international legitimacy as the religious groups were the main instruments in organizing *Jihad* in Afghanistan which was supported by the majority of the world countries. The *Islamization* Program and the associated Afghan *Jihad*, in turn, resulted in a handsome amount of rents which were mainly expropriated by the military and the religious groups. After the detailed description, this historical narrative is modeled in two-stage rent-seeking activities which show that the rent-seeking contest among the various groups results in institutional change as an equilibrium outcome. The results of the model clearly indicate that the Pakistan's *Islamization* policy is associated with the parameter shifts in the model. In words, the collaboration between the two privileged groups during Zia's regime resulted in institutional change in favour of those groups which, in turn, provides a strong case for the distributive considerations in institutional change.

Finally, extractive political institutions shape extractive economic institutions. For instance, extractive political institutions rest the concentration of power in the hands of a privileged group; and that power, in turn, is used to regulate economic competition and create rents through the establishment of extractive economic institutions. In such a limited access order, the protection of property rights and the access to justice is limited to the privileged group or to a dominant coalition in the words of North et al. (2009). The last

chapter is related to the persistence of extractive political institutions. In particular, we concentrate on what are the instruments that a dictatorship as a set of extractive political institutions needs to deploy in order to persist with the regime. We discuss and empirically test the hypothesis that states that dictators rely more on military for political support instead of relying on the wide cross-section of the society. In order to get the military's support, dictators, therefore, spend more on military relative to their spending on the provision of public services. Our results, based on the cross-section of the countries, confirm this hypothesis.

***Karim Khan***

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## **Chapter 1**

# **Endogenous Institutional Change with Endogenous Interest Groups**

### **Abstract**

Since the recent advances in the institutional perspective of economic development, the interests in explaining cross-country variations in institutional frameworks have been increasing enormously. This study is the continuation of this ongoing debate and explores the rent-seeking fundamentals of institutions. An endeavor is made to explain the manner in which the rent-seeking behavior of the state actors results in the inefficiency of institutional framework. The main focus is on the rents provided by the availability of natural resources wealth, foreign aid or corruption potential. By providing a framework where rulers, agents of the state, and the citizens act endogenously, we show that the rents from these resources can be a significant constraint to institutional reforms. In order to come out of the bad institutions trap, the society needs to offer a substantial amount of incentives to the privileged groups or groups with the higher bargaining power. The two privileged groups which are focused on in the study are the rulers and their agents because in most of societies these two have the highest bargaining power in the negotiations over the rules and institutions.

**JEL Classification:** P48, P16, P14, O43, D73

**Key Words:** Institutional reforms, natural resources wealth, foreign aid, corruption potential, rulers, agents of the state

## **1.1. Introduction**

Institutional framework has been one of the widely discussed topics in the explanation of cross-countries development gaps. Two points are common in most of the available literature related to institutions and economic success. First, institutions are collective choices and endogenous; and thereby, emerge, persist or change from the social interactions of individuals or groups. Second, the generally agreed conclusion is that the societies that encourage the protection of property rights, exercise the rule of law and enforce contracts efficiently prosper while the societies where expropriation policies prevail face a severe problem of underdevelopment (North, 1981, 1990; Hall and Jones, 1999; Easterly, 2001; Acemoglu, et al., 2001, 2005; Acemoglu and Johnson, 2005; Knack and Keefer, 1995; Mauro, 1995; Dollar and Kraay, 2003; and Rodrik et al., 2004)<sup>1</sup>. Theoretically, most of these studies regard institutions as social infrastructure that provides an economic environment within which economic actors solve their allocation problems. As a consequence, institutions have a direct bearing on the incentives structure of the society. Therefore, factors accumulation and technological progress are only the proximate causes of development while institutions are the fundamental ones.

Although it is unanimously argued that economic institutions such as private property, the rule of law, and contract enforcement are of primary importance in the realization of economic development; there has, however, been lack of sufficient agreement on what determine the institutional framework in a society. There are a variety of opinions regarding the evolution of institutions. For instance, four different approaches have been prominent in the

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<sup>1</sup> Most of these studies assert that in order to understand long-run economic performance, it is inevitable to address the interaction between institutions, politics and markets. Institutions form the rules of the game within which both politics and markets operate and ultimately determine economic outcomes.

literature. They are the Efficiency View of Institutions, the Incidental View of Institutions, the Ideological View of Institutions, and the Social Conflict View of Institutions. The first approach is based on the cost and benefit analysis of institutions from social perspective. According to this approach, institutions appear and persist when their social benefits exceed their social costs. The second approach takes institutional change as a byproduct of some other activity, or an unintended consequence of other social interaction or historical accidents. The ideological view takes ideology and beliefs as the basis of institutional evolution. The final approach to the selection of institutions takes institutional change as a consequence of the conflict over the sets of institutions.<sup>2</sup>

This paper, combining the social conflict view of institutions and the theory of rent-seeking, examines the situation where the rent-seeking behavior of state actors may be a significant constraint to institutional reforms. Based on these two theories, we present an argument that institutional framework in any society is driven by its distributive implications. Second, it is an equilibrium outcome, whether it is efficient or less efficient. The winners of the prevailing institutional framework are those, who had the greatest bargaining power during its formation. In order to change the existing inefficient institutional framework, the winner of existing institutional framework should be induced to change their strategy to the new equilibrium. This may be achieved by providing them with the incentives in the new equilibrium.

The study has three contributions. First, it studies endogenous institutional change taking agents of the state as a separate

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<sup>2</sup> The detailed introduction of these approaches is given in Acemoglu (2003) and Acemoglu et al. (2005). Both of these studies present an argument in favor of the Social Conflict view of Institutions by giving some historical data on European Colonization and the comparison of North Korea and South Korea.

endogenous group besides politicians and citizens.<sup>3</sup> Given their *de facto* power, agencies of the state can prevent institutional reforms if the reforms in question endanger or reduce their rents. Second, it presents an argument that the choices of good economic institutions might not only be constrained by the non-democratic rulers (dictators) but, in lacking democracies, the group of selected politicians can also be a constraint, provided that the politicians have solved their within-group problems of free riding and collective action. Third, windfall income to the society either from natural resources or from foreign aid affects the behavior of state actors. In the same way, the corruption potential or other forms of rents associated with the state intervention shapes the behavior of rulers and their agents. In this study, we want to show how these cumulative types of rents affect the uncoordinated rent-seeking behaviors of rulers and their agents, and what does it imply for institutional reforms? The rest of the paper is organized in four sections. Section 2 surveys some of the available literature that clarifies the issue discussed in this paper. In order to motivate our hypothesis, we provide some descriptive cross-country evidence in section 3. In particular, this analysis illustrates the growth performances of the selected economies, given their endogenous and exogenous characteristics. Section 4 provides a theoretical model that formalizes the main argument of the paper. Section 5 concludes the paper.

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<sup>3</sup> The introduction of agents as a separate interest group is based on North (1981). North (1981) writes “It is the agents of the principals who enforce contractual agreements and enact penalties and not always, are these agents perfectly constrained by their principals”. The main justification that renders the agents as separate interest groups is that they are self-interested individuals with their own interests and their behavior is guided by those interests.

## **1.2. Review of Literature**

The basic argument in the paper is that institutional change is driven by their distributional advantages and the state actors, in order to sustain or expand their rents, prevent institutional reforms. We survey two strands of the literature: theoretical and applied. On the theoretical side, we focus on studies related to the social conflict view of institutions, rent-seeking, and their possible relevance to the state actors. On the applied side, we survey the literature related to the possible types of rents available to the state actors and their implications for formal institutions.

### ***1.2.1. The Social Conflict View of Institutions, Rent-Seeking and the State Actors***

The basic premise of the social conflict view of institutions is that institutions are social choices and different groups benefit from different subsets of institutions. As a result, there is conflict of interest over these choices, and the conflict is won by the group with higher bargaining or political power. In other words, at any time and in any society, those institutions persist which are favored by the privileged groups. This approach, originated from Marx's theory of class conflict, is extensively discussed in the literature on the evolution of institutions.<sup>4</sup> Once distributive considerations are taken into account; the theories of interest groups and rent-seeking become relevant to the evolution of institutions. This is justified by the fact that institutions then become the ultimate determinants of political and economic rights in any society.

Rent-seeking meant to describe the resource-wasting activities of individuals and groups in seeking transfers of wealth through the aegis of state; and the groups involved in rent-seeking

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<sup>4</sup> Marx's (1970); North (1981; 1990); Libecap (1989); Knight (1992); Acemoglu (2003); Acemoglu et al. (2005); Ostrom (2005); North et al. (2009); and Acemoglu and Robinson (2012) are the most notable works in the elaboration of the social conflict view of institutions.

are the corresponding interest groups (Tullock, 1967; Krueger, 1974; Posner, 1975).<sup>5</sup> According to the traditional theory, rent-seeking arises generally due to the introduction of state to economic interactions; however, this is not the only setting in which rent-seeking may occur. There is a well-known trade-off between the social losses due to private expropriation (theft, robbery, piracy, war or disorder etc.), and the social losses due to state expropriations (corruption, rent-seeking, malfeasance etc.).<sup>6</sup> So, there is some level of state interference essential for the efficiency of economic activities relative to stateless mechanism or disorder. Furthermore, the traditional theories were intended to explain the rent-seeking behavior of private interest groups, who might lobby or involve in illegal activities for attaining government transfers or other favors.<sup>7</sup> However, recent research has shown that the state intervention in economic interactions also introduce public interest groups to the analysis (North, 1981; Acemoglu and Verdier, 2000; North et al., 2009; Grief and Kingston, 2011; Acemoglu and Robinson, 2012).<sup>8</sup>

So in general, in a rent-seeking society, interest groups may be decomposed into private interest groups, and public interest

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<sup>5</sup> The formation of interest groups and the issues related to their collective action problems are extensively discussed in Olson (1965).

<sup>6</sup> The details of the Institutional Possibility Frontier are given in the Djankov et al. (2003). In the paper titled as “The New Comparative Economics”, the authors give the possible social orderings for a society ranging from ‘Private Orderings’ to ‘Independent Judges’ to ‘Regulatory State’ to ‘State Ownership’. The authors give a detailed description of the social losses associated with each of these institutional structures.

<sup>7</sup> For instance, an entrepreneur wishing to get the monopoly rights of a government regulated industry might pay the campaign contributions to politicians, or might bribe a bureaucrat or judge for this purpose.

<sup>8</sup> For the details of the state and its contribution in economics interaction, see the neoclassical theory of state given in North (1981). Especially, it elaborately illustrates the instances and possibilities where the interests of the state actors may lead to the emergence and persistence of inefficient institutions. Grief and Kingston (2011) argue that the enforcement characteristics and the behaviors of the enforcing agents are part of the evolution of institutions as equilibrium outcome. Similarly, state actors are part of the North’s et al. (2009) ‘dominant coalition’ and Acemoglu and Robinson’s ‘privileged groups’.

groups. The public interest groups are the rulers and their agents (military, bureaucracy and judiciary). The rulers constitute as a separate interest group. For instance, a dictator not only uses the state to maximize his current payoffs; but he also changes the rules to enhance his *de jure* political power with a rent-expropriation view. It may not be necessarily the case that his payoffs consist of the simple expropriation of private resources but may comprise the overall institutional rents, including both legal as well as illegal rents. Similarly in a representative democracy, the rulers use their constitutional power to maximize theirs as well as their supporter's payoffs. Again, it may not be necessarily the case that they simply transfer the rents from the minority either to them or to the groups maintaining their majority; but instead, they try to maximize their current as well as future payoffs constitutionally. Namely, in order to ensure their future rents, they choose the rules that maintain their economic and political power.

Likewise, the agents of the state, *i.e.* bureaucracy, military and judiciary constitute separate interest groups. They attempt to maximize their compensation package through their influence on the political and economic systems. Their compensation package consists of the salary paid by the state, any income (legal or illegal) obtained from outside activities, and the perks of their office. There is a rich literature available that highlights the importance of the behaviors of these groups. For instance, North's (1981) contract theory and predatory theory of the state provides enough rationale for the relevance of the agents' behavior to the emergence of institutional framework in any society. Similarly, Alesina and Tabellini (2007) argue that the rise of the regulatory state has made the bureaucracy a key player in both the decisions, and the execution of a large amount of legislation. In a slightly different version, Greif and Kingston (2011) argue that the enforcement of rules should be taken as an integrated component of the

institutional structure.<sup>9</sup> In other words, the theories of institutional change should embody the enforcement characteristics of institutions. So, unless we take all these groups into the structure of economics and endogenize their behaviors, it would be an incomplete discussion what Landes and Posner (1975) called ‘a romantic view’ that the members of the agencies are the unique guardians of some mystical “public interest”.<sup>10</sup>

Similarly, the private interest groups maximize their payoffs given the set of informal institutions, and a formal institutional framework provided by their interactions with the public interest groups. The basis of these groups may be land, industry, or simply religious/ethnic causes. Olson (1965) provides the mechanism that result in the emergence of interest groups and concludes that the size and the solution of the collective action problem determine the actual effectiveness of the interest groups. Since, in this study, we focus more on the public interest groups, so the remaining of the population will be assumed as a single group for simplicity.

### ***1.2.2. Rents in Societies, Institutions and Economic Development***

Rents to state actors can be of two types: one that is generated in their interactions with private individuals or groups, *i.e.* corruption or rent-seeking; the second source comprise the windfall rents like the natural resources wealth, foreign aid, or some other form of public funds that might exclusively be at the disposal of either the rulers or their agents. This section reviews the literature that is

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<sup>9</sup> Greif and Kingston (2011) argue that the view of institutions-as-equilibria focuses on how interactions among purposeful individuals create structure that gives each of them the motivation to act in a manner perpetuating this structure.

<sup>10</sup> This concern is widely discussed in a paper titled as “The Independent Judiciary in an Interest-Group Perspective by William Landes and Richard Posner in 1975 and a subsequent comment on the paper by Buchanan (1975). Both argue that in the economic approach to politics ‘the judiciary’s role is one of representing the underrepresented groups in the political process.

related to the relevance of these different sources of rents to institutions and economic development.

Regarding corruption, there are controversial claims with regard to its implications for economic outcomes. For instance, Mauro (1995) empirically concludes that corruption negatively affect economic growth, using cross-country data from 1960 to 1985. In contrast, Leff (1964) and Lui (1996) predict that corruption enhances economic success by avoiding bureaucratic delays. To reconcile these conflicting views, the dynamic effects of corruption need to be sought. The corrupt behavior itself needs not to have a net social cost to the society today as it involves transfers from bribe-payers to the bribe-takers. However, its long lasting negative effects come through its effects on institutions. This is because corrupt rulers or agents resist any institutional change that endangers their rents in the form of corruption today or in future.

In the same way, sufficient literature exists on the implications of natural resources wealth, and foreign aid for economic growth (Auty, 1990; Sachs and Warner, 1997, 1999, 2001; Djankov et al. 2008; Knack, 2001; Brautigam and Knack, 2004; Kronenberg, 2004; Dalgaard and Olsson, 2008; Khan, 2012). Again, in case of natural resources wealth, the assertions are not congruent. To some it enhances investment and productivity; while to other, it is a curse, *i.e.* it results in rent-seeking and thereby, hampers long run development. There are many case studies across the globe that confirms the hypothesis of the natural resources curse. For instance, the four Asian Tigers including Singapore, South Korea, Taiwan, and Hong Kong are deficient in natural resources, but are economic miracles; while in contrast, resources rich countries like Mexico, Nigeria, Venezuela are struggling in terms of their economic performances. However, there is little progress on ‘how it affects economic growth’? Given the importance of institutions for economic success, in this study, we

explore the argument that the availability of natural resources rents weakens formal institutions which, in turn, transforms into underdevelopment.

Foreign aid has the same intrinsic characteristics that natural resource rents have. Most of the studies have found negative impact of aid on institutions and economic growth. For instance, Knack (2001) shows that aid flows are significantly correlated with the worsening of political risks for external investors, implying deterioration of economic institutions. Djankov et al. (2008) observe that both foreign aid and oil revenues change the quality of institutions, particularly both aid and natural resources rents have a significant inverse effect on democratic institutions. Brautigam and Knack (2004) reported that the end of US aid to the South Korea and Taiwan resulted in their reforms in 1960s. Thus, the rentable resources have destructive effects on the behavior of state actors. In particular, they encourage rent-seeking activities relative to productive activities.<sup>11</sup>

The model that we present below is expected to highlight on how the availability of rents in the form of natural resources wealth, foreign aid, or corruption potentials restrict the motivations to improve institutional framework. It also elaborates on how incentives scheme could change institutions if properly offered and implemented. But before going to the model, we would like to see the descriptive cross-country analysis of natural resources rents, foreign aid, corruption, and their probable implications for institutional quality.

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<sup>11</sup> For instance, Murphy, Shleifer, and Vishny (1993) argue that in situations where rent seeking provides more lucrative opportunities than productive work does, the allocation of talent would be worse: talented and highly educated individual will be more likely to engage in rent seeking than in productive work, with the adverse consequences for their country's growth rate.

### **1.3. Descriptive Cross-country Evidence**

This section provides some cross-country evidence relevant to the issue in the paper. The variables of focus are those that directly or indirectly affect the compensation package of state actors. The approach is to highlight some countries where state actors have a handsome amount of rentable resources; corruption and malfeasance are common; economic performance is poor; and compare those with other countries which don't have these characteristics, and have achieved economic success. For this purpose, we choose Nigeria and Pakistan and compare them with Singapore and South Korea. The former two are economic failures while the latter two are economic triumphs.

**Singapore**, a small country of population slightly higher than 5 million, is one of the four Asian tigers in terms of growth performance. It has a highly market-based economy which depends heavily on exports, including largely manufacturing goods.<sup>12</sup> Economic growth has remained consistently high—at an average annual rate of 8.25 percent from 1960 to 2000. It has surpassed Canada, Australia, and U.K. in 1994, in terms of per capita GDP. In nominal terms, its total GDP is estimated at \$194.92 billion with per capita GDP of \$43,867 in 2010. Like other Commonwealth states, Singapore inherited the British model of governance. However, its institutional framework is widely known for its efficiency and competence.<sup>13</sup> The state-led economic achievements make Singapore a good case for studying contemporary reforms in governance and institutions. Table 1.1, in the appendix, shows that Singapore has no windfall rents neither in the form of natural

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<sup>12</sup> For instance, the value of its international trade is higher than its GDP, making trade one of the vital components of the economy.

<sup>13</sup> It has been consistently ranked high in terms of business-friendly environment by the World Bank. For instance, in 2012, it is ranked as first in terms of doing business.

resources wealth nor foreign aid. Besides, public sector salaries in Singapore are comparable to those in the private sector. Thus, the positive effects of the larger incentives to state actors combined with lower windfall rents rank Singapore to have one of the efficient institutional frameworks in the world. This fact is evinced by its higher score on the institutional quality index, and its lower score on corruption perception index.<sup>14</sup>

**South Korea**, likewise, is held up as another shining example of a market driven economy, ranking 14<sup>th</sup> in the world in terms of nominal GDP. In the 1960s, Korea followed the policy of export-oriented industrialization and import substitution, leading the economy to grow at the rate of 7% per annum during the whole decade. In the 1970s, they transformed to heavy and chemical industrialization, followed by the policy of increased liberalization in the 1990s. As a result of these policies, it has been one of the fastest growing economies. For instance, from 1962 to 1990, its per capita income increased from \$87 to \$5199; and its total GDP expanded from \$2.3 billion to \$220.7 billion. Export-led industrialization has been the main factor behind the economic miracle of South Korea.<sup>15</sup> Second, the state actively intervened in the market, and took sufficient measures for macroeconomic stabilization.<sup>16</sup> Thus, the active involvement of the institutional structure transformed South Korea from poverty stricken, inward looking, and economically backward economy in the 1960 into a globally competitive economy. Looking at table 1.1, South Korea

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<sup>14</sup> See table 1.1 for the details of data and table 1.2 for the definition of variables.

<sup>15</sup> In particular, the growth of large scale enterprises ensured the economies of scale and the technology transfer.

<sup>16</sup> For instance, it was often viewed as mercantilist economy as in the early periods of its industrialization. It erected tariff barriers and imposed a prohibition on manufacturing imports, hoping that the protection would give the domestic firms a chance to improve productivity through learning by doing and technology transfer.

has been a country with limited natural resources rents; and it has never been a significant receiver of foreign aid. The limited amount of rents combined with higher incentives to state actors are the most probable reasons for limited rent-seeking in South Korea.

**Nigeria** is the most populous country in Africa and the 8<sup>th</sup> most populous in the world.<sup>17</sup> It is characterized by larger ethnic and religious divisions. Additionally, it has been under colonization, and has been endowed with enormous natural resources. For instance, since the beginning, the economy of Nigeria has been oil-based, providing 95% of foreign exchange earnings, and contributing 80% to the budgetary revenue. After independence on October 1, 1960, Nigeria was expected to have potential for higher development due to its larger human and natural resources. But unfortunately, after five decades, the performance is dismal as far as social and economic indicators are concerned. According to the estimates of the World Bank, the per capita GDP of Nigeria is recorded as \$1222 in 2010. Its growth performance is truncated during various decades. For instance, in the 1960s, GDP grew at the rate of 3.1% per annum, followed by the growth rate of 6.2% per annum in the 1970s which was caused by the higher oil prices in the world market. In the 1980s, the growth rate was negative due to oil price slump and debt repayment; however, in the 1990s, the economy again reverted to the positive growth rate and grew at the rate of 4% per annum.

Two factors are probably shaping Nigeria's poor economic outcomes. First, Nigeria's rulers have been unable to diversify its economy away from its overdependence on highly capital-intensive sector, *i.e.* oil sector. Second, in most of the history of Nigeria, the government style has been remained as autocratic, leading to authoritarian operating rules. Table 1.1 illustrates that its score on

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<sup>17</sup> For instance, its population is 152.217 million.

institutional index is 2.8 while its score on corruption perception index is 8.3, both indicating poor institutional framework. Moreover, the rents from natural resources are higher due to the larger oil reserves which are 35% of GDP; and these rents are further augmented by almost half a billion dollars of aid per annum. State actors in Nigeria are one of the most corrupts in the world, which has resulted in the squandering of massive amounts of oil revenues and foreign aid.<sup>18</sup> Lower public sector salaries combined with lower beliefs on meritocracy, and higher windfall rents in the form of higher natural resources wealth and higher foreign aid are the most probable reasons for higher corruption and poor institutional framework in Nigeria.

Finally, **Pakistan**, like Nigeria, has originated its institutional structure from the British. Pakistan, though average growing country at the rate of almost 4% per annum since its independence, is marked by higher levels of poverty and income inequality.<sup>19</sup> Pakistan though has experienced both democracy and dictatorship but the operating institutional framework in both forms of government has been authoritarian. Due to weak representative institutions, the state actors like the military and civil bureaucracy have been playing a dominant role in policy making and implementation. It has, on the one side, encouraged corruption and expropriation; and on the other side, capitalist developments have actually taken place under their patronage and close control.<sup>20</sup> For

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<sup>18</sup> For instance, the 1996 study of corruption by the Transparency International ranked Nigeria as the most corrupt nation among 54 nations listed in the study.

<sup>19</sup> For instance, according to United Nation's Human Development Index (HDI), 60.3% of Pakistan's population lives on less than \$2 a day and some 22.6% are living under \$1 a day. Also, the distribution of wealth is highly uneven, with 10% of the population earning 27.6% of the total income.

<sup>20</sup> According to the rankings of the Transparency International in 1996, Pakistan was the 3<sup>rd</sup> most corrupt country in the world. Similarly, business opportunities have been restricted to selected people who have established good relationships with these two interest groups.

instance, on the index of institutional quality, Pakistan has been in the lower brackets. Besides, Pakistan is one of the most aid receiving countries in the world, getting almost 1 billion dollar per annum. In addition to Official Development Assistance (ODA), other grants in the forms of Afghan War, and War on Terror etc. have created a handsome amount of rents to state actors. The availability of these rents and the lower salaries in public sector relative to private sector are the most probable justifications for poor institutional framework, and higher prevalence of corruption in Pakistan.

#### **1.4. The Model**

Consider a two period economy, populated by a continuum  $1 + \delta_p + \delta_a$  of economic actors, each with discount factor  $\beta > 0$ . The population of common people is normalized to be 1, and also, it is assumed that they are the majority of the society.  $\delta_p$  is the fraction of politicians who are also rulers. So, rulers and politicians are synonymously used in this study. Finally,  $\delta_a$  is the fraction of the agents of rulers. In this study, agents like bureaucrats, military, or judiciary etc. are used as a separate privileged group. It is the agents of the state who enforce contractual agreements, and regulate law and order in a society. But not always, are these agents perfectly constrained by their rulers (North, 1981; Acemoglu and Verdier, 2000; Alesina and Tabellini, 2007). The individuals are identical within the same group; however, there is heterogeneity across groups. This assumption is sufficient to ensure that the groups act like a player. The society is decomposed in such a way that the politicians are the rulers; the agents are the functionaries of the government; and the citizens are the subjects.

As stated earlier, this is a two period economy, *i.e.* today and tomorrow. The individuals are risk neutral and their preferences are summarized by the following period felicity function:

$$u_{i,t} = C_{i,t} + \gamma_i l_{i,t} \quad i = p, a, c \quad t = 0, 1 \quad 1.$$

$C_{i,t}$  is the consumption of player  $i$  in period  $t$ .  $l_i$  and  $\gamma_i$  are the leisure and the marginal utility of leisure for individual  $i$  respectively. The subscripts  $p$ ,  $a$ , and  $c$  denote the politicians, the agents, and the common people respectively. Each individual is endowed with 1 unit of time, which he exhausts in work and leisure. There is a single final good  $y$ , which is produced according to the following technology:

$$Y_t = R_t L_{y,t}^\alpha \quad 2.$$

$R_t$  is the degree of institutional framework in period  $t$ , while  $L_{y,t}$  is the amount of labor used in the production, which is supplied by the common people or citizens.  $\alpha$  is the share of labor in production sector and as a tradition; it is assumed that  $\alpha > 0$ . The industry is jointly owned by the rulers and some citizens. The share of rulers is  $\kappa < 0.5$ , in order to be closed to reality.<sup>21</sup> Labor is paid at the rate of competitive wage rate and the net profits are distributed according to the respective shares. Accordingly, the wage rate is given as:

$$w_t = R_t \alpha L_{y,t}^{\alpha-1} \quad 3.$$

Since, there is single good, so it is also assumed to be the numeraire; so, all the incomes are measured in terms of this good.

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<sup>21</sup> In this study, our focus is on the countries which are natural resources rich, or which depend on foreign aid. In addition, our focus is on countries where political and economic institutions are so absolutist that they create enough corruption potential in the society. If we characterize the countries of the world by these characteristics, then the elite section of the society or North et al.'s 'Dominant Coalition' is the minority of society.

The life time value of a player from consumption is measured in terms of his current income or consumption, and his expected next period income or consumption discounted at a positive discount rate  $\beta$ . The institutional framework is introduced through Cobb-Douglas technology and its production function is given as:

$$R_t = \bar{R}A_t^\rho \quad 4.$$

Equation 4 indicates the effective level of formal institutional order as a function of the effort by the agents of the state, denoted by  $A$ .<sup>22</sup> This can be justified by the fact that once the rules are codified or written; they are implemented by the agencies like bureaucracy, military, and the judiciary. Thus, the actual formal institutional framework must reflect the optimality behavior of these agents. To make things easy, we assume to measure effort in terms of the time devoted to the improvement in or the maintenance of institutional framework. There is some status-quo level of institutional framework  $R_0$ . This assumption is made in order to put restriction that  $A$  cannot be zero in any period. The purpose of this assumption is that the state of complete anarchy is avoided deliberately. Assume that  $A_0$  is the level of effort associated with this minimum level of the institutional framework,  $R_0$ . Similarly  $\bar{R}$  is the ideal level of institutional framework. We can assume, without loss of generality, that  $\bar{R}$  are the rules which are written in the constitutions; and they are optimal.<sup>23</sup> So if at any time, the rules are less than  $\bar{R}$ , we say that the rules are not efficiently implemented by the agents of the society. Also, we further assume that at the ideal level of institutional framework,  $\bar{R}$ ,

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<sup>22</sup> According to Grief and Kingston (2011), institutions as equilibria encompass the enforcement characteristics of formal rules. Thus, the actual prevailing institutional framework reflects the optimality behavior of the enforcers.

<sup>23</sup> At this level of institutional framework, the behavior of agents is like that of the Weberian bureaucracy. In other words, the agents are the unique guardians of some mystical-public interest.

there is no expropriation of the state resources or assets by either the rulers or their agents.

The agents are paid at the competitive wage rate from the government budget for the level of effort put forward in maintaining the institutional framework. Additionally, the maintenance of the institutional framework is financed through lump sum taxation,  $T$ , on citizens. The rulers exhibit their preferences for a particular set of institutions through their willingness to initiate reforms or maintain with the status quo. Similarly, the agents display their preferences through their provision of the effort level to the maintenance of institutional framework. Finally, the citizens' preferences for institutional framework are represented by their reaction in terms of labor supply to the production sector. The reforms introduced today produce benefits tomorrow. This assumption is made to take into account the fact that institutions have long lasting effects on development.

### ***1.4.1. Descriptions of the Players***

In this section, we describe the objective functions of the players, and characterize their optimal behavior, given their control variables.

#### ***1.4.1.1. The Rulers or Politicians***

The life time value function of ruler is given as:

$$V_p = \frac{S_0}{2} + P_0 + W_p + \beta \left[ \frac{S_1(R_1)}{2} + P_1(R_1) \right] + l_p \quad 5.$$

$$S'(R) < 0 \text{ and } P'(R) > 0$$

$V_p$  is the life time value function of the ruling elite which is the sum of current period payoffs and the discounted value of the

next period payoffs.  $S$ ,  $P$ , and  $l_p$  denote the expropriation of rents from either foreign aid or natural resources, share in profits, and leisure respectively. Expropriation decreases with institutional improvements and profit share increases with it. Further,  $W_p$  is the share of the rulers accruing from the institutional framework sector, *i.e.* the difference between the government revenue and the amount paid to the agents, including both the wage or any other rewards for their efforts. We make some further assumptions. First, each period, there is some fixed amount of rents,  $Z$ , either from foreign aid or from natural resources, coming to the country. Some of these resources are expropriated which are jointly shared by the rulers and agents in equal amount. The remaining part is equally divided among citizens. Second, reforms, once undertaken, cannot be reversed because it is costly. These costs may include either adjustment costs or the costs associated with the strikes or lobbying of the groups who are the winners in the prevailing institutional arrangements. As stated earlier, the expropriation and profit share tomorrow are the function of reforms introduce today. There is trade-off for rulers in improvements in the institutional framework, *i.e.* good institutions tomorrow implies lower expropriation but higher profits; while bad institutions implies higher expropriation but lower profits.

Fors and Olsson (2007) define an excellent measure for expropriation, which is used in this study. According to that definition, the amount of expropriation at any period  $t$  that can be made, given the level of reforms,  $R_t$ , is given as:

$$S_t = \left(\frac{\bar{R} - R_t}{\bar{R}}\right)Z \tag{6}$$

Similarly, in the production sector, the profits are distributed according to the respective shares after the payment of wages. The rulers' share,  $P_t$ , at any period  $t$  can be written as:

$$P_t = \kappa\pi_t = \kappa(R_t L_{y,t}^\alpha - R_t \alpha L_{y,t}^\alpha) = \kappa R_t [1 - \alpha] L_{y,t}^\alpha \quad 7.$$

Using the definitions, given by the equations 4, 5, 6, and 7, we get the lifetime value function of rulers or politicians in terms of the effort of agents and labor supply supplied to the institutional and production sectors respectively.

$$V_p = \left(\frac{\bar{R} - R_0}{2\bar{R}}\right)Z + \kappa R_0 (1 - \alpha) L_{y,0}^\alpha + T - \rho \bar{R} A^\rho + \beta \left(\frac{\bar{R} - \bar{R} A^\rho}{2\bar{R}} Z + \kappa \bar{R} A^\rho (1 - \alpha) L_{y,1}^\alpha\right) + l_p \quad 8.$$

#### ***1.4.1.2. Agents of the State***

As defined above, agents are the functionaries of the government that comprise organized agencies like bureaucracy, military and the judiciary. In most of the earlier literature, their role is either taken exogenous to other groups in society or taken in a limited form of principal-agent framework. In this study, we endogenizes their behavior by taking agents of the state as one of the interest groups in the economy. Consequently, their cooperation or effort on institutional reforms depends on the implications of these reforms on their compensation package, including both legal income as well as illegal rents. In other words, they choose their effort levels to maximize their payoffs. It is assumed initially that if there is any expropriation, it is jointly shared by the rulers and their agents. Second, agents have also the potential to be involved in the decentralized corruption.<sup>24</sup> Defining the preferences of agents of the state over corruption implies that corruption matter for the evolution of institutions.

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<sup>24</sup> Easterly (2001) defines the decentralized corruption as the type of corruption characterized by many bribe-takers with their uncoordinated bribe-taking activities. So, by the virtue of its definition, decentralized corruption is directly related to the agents of the state.

Let  $X$  be the fixed corruption potential per period in the economy.<sup>25</sup> We have assumed only decentralized corruption, so corruption is taken out of the incomes of citizens or

$$0 \leq X \leq \alpha R_t L_{y,t}^\alpha + (1-\kappa)(1-\alpha)R_t L_{y,t}^\alpha + \frac{R_t Z}{\bar{R}} - T.$$

To simplify things, we assume that corruption income enters the value function of the agents in the similar way as the expropriation of the foreign aid or natural resources rents does. Then, it is obvious that the income from corruption declines with the improvements in the institutional framework. Using the definitions given above, the lifetime value function of the agents is given as:

$$V_a = \text{Max}_A \left( \frac{(\bar{R} - R_0)Z}{2\bar{R}} + \frac{(\bar{R} - R_0)X}{\bar{R}} + \rho \bar{R} A^\rho + \frac{\beta(\bar{R} - \bar{R} A^\rho)Z}{2\bar{R}} + \frac{\beta(\bar{R} - \bar{R} A^\rho)X}{\bar{R}} + \rho(1-A) \right) \quad 9.$$

The first order condition of agents implies that the optimal level of effort or cooperation offered to institutional reforms by the agents is given as:

$$A^* = \left[ \bar{R} \left( \rho - \frac{\beta Z}{2\bar{R}} - \frac{\beta X}{\bar{R}} \right) \right]^{\frac{1}{1-\rho}} \quad 10.$$

$A^*$  is the level of effort that the agent would assert in the maintenance of institutional framework. The structure in this study shows that institutional framework in any society is characterized by the optimality behavior of agents. So, the status-quo,  $A^* = A_0$  is equilibrium outcome. For any formal institutional change, the

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<sup>25</sup> The corruption potential is defined majorly by the existing set of informal and formal institutions. For instance, the informal institutions like culture, religion or ideology determine the moral sentiments of corruption like shame, informal punishments etc. Second, the formal institutions affect corruption potential by defining the role of agents in economic interactions and the accountability procedures of the agents.

change in  $A^*$  is needed. Thus, in order to induce more effort from agents of the state, incentives are needed to be provided to them.

**Lemma 1.1:** *The effort of agent is an increasing function of its share in institutional framework sector,  $\rho$ , and a decreasing function of  $Z$  and  $X$ .*

**Proof:** The proof is understandable by taking the first derivate of the optimal level of effort of the agent with respect to the corresponding parameters.

This result is very useful for the institutional explanation of cross-country development gaps. The result implies that the societies with more windfall gains like natural resources rents, foreign aid or with more corruption potential are expected to persist with the bad set of institutions. For such societies, a larger set of incentives needed to be offered to the rulers and to the agents in order to change the existing set of bad institutions. For instance, the incentives should be such that the expropriation and corruption are less advantageous relative to the legal incomes such as salary to the agents or the profits shares to the rulers. On the other hand, in societies where the history has provided them with the less corruption potential or expropriation level, good institution would emerge.

#### **1.4.1.3. Citizens**

The citizens are endowed with 1 unit of time, which they exhaust in labor to production sector and leisure. Their maximization problem is given as:

$$V_c = \underset{L_{y,t}}{\text{Max}} (\alpha R_t L_{y,t}^\alpha + (1-\kappa)(1-\alpha)R_t L_{y,t}^\alpha + \frac{R_t Z}{R} - T - \frac{(\bar{R} - R_t)X}{\bar{R}} + \alpha(1 - L_{y,t})) \text{ for } t=0,1 \quad 11.$$

According to the optimization of the citizens, the equilibrium supply of labor to the production sector is given as:

$$L_{y,t}^* = [(\alpha + (1-\kappa)(1-\alpha))R_t]^{-\frac{1}{1-\alpha}} = (QR_t)^{-\frac{1}{1-\alpha}} \quad 12.$$

**Lemma 1.2:** *The labor supply is increasing in institutional reforms  $R_t$ . Moreover for  $\kappa \leq 1$ , the supply of labor changes positively with the change in  $\kappa$  if the indirect institutional implications of a change in  $\kappa$  are larger than the direct effects of the same change that is*

$$\frac{dL_{y,t}}{d\kappa} \geq 0 \quad \text{iff} \quad Q \frac{dR_t}{d\theta^*} \frac{d\theta^*}{d\kappa} \geq (1-\alpha)R_t.$$

*Alternatively, the indirect effect of  $\kappa$  on labor supply must dominate the direct effect of  $\kappa$  on labor supply for labor supply to respond positively to changes in  $\kappa$ .*

**Proof:** The Proof of the first line is obvious from the expression of the equilibrium supply of labor. The proof of second claim is given in the appendix.

The first result follows from the fact that improvements in institutional framework imply higher wage rate and higher profit shares. In other words, improvements in institutions implies higher price of leisure which cause an increase in the supply of labor. The second result implies that for  $\kappa \leq 1$ , the indirect effect of  $\kappa$  on labor supply must dominate the direct effect of  $\kappa$  on labor supply for labor supply to respond positively to changes in  $\kappa$ . When  $\kappa$  increases, there are two effects on the supply of labor. One is the direct effect which decreases the labor supply because an increase in  $\kappa$  implies that the share of citizens in profits decreases. The other effect is indirect, *i.e.* through its effect on institutions. This effect is positive because for  $\kappa \leq 1$ ,

$$\frac{d\theta}{d\kappa} \geq 0$$

that is institutions improve with the increase in  $\kappa$ , where  $\theta$  is the rate of incentives that the rulers offer to the agents to bring about institutional change. The net effect is the sum of these two effects, which is only positive if the above inequality is satisfied.

### ***1.4.2. Institutional Change and the Associated Incentives***

According to North (1990), institutional change comes about when changes in relative prices create incentives for individuals or groups to renegotiate contracts or restructure rules. There are three relevant interest groups with two of them having the *de jure* political power to bring about institutional change.<sup>26</sup> Accordingly, we need to clarify their associated incentives with the institutional change. As stated earlier, the maintenance of institutional framework and the associated institutional change is financed by lump sum taxation on citizens. Now in this simple economy, the rulers will initiate reforms if and only if their life-time payoffs from the new institutional framework are, at least, as much as it would be if they maintained with the status quo. In our framework, this implies the following condition which we can name as the participation constraint of the rulers;

$$V_p^1 - V_p^0 = -\theta R_1 - \rho(R_1 - R_0) - \frac{\beta(R_1 - R_0)Z}{2\bar{R}} + \beta\kappa(1-\alpha)Q^{\frac{\alpha}{1-\alpha}} \left[ R_1^{\frac{1}{1-\alpha}} - R_0^{\frac{1}{1-\alpha}} \right] \geq 0 \quad C1.$$

The details of the derivation of C.1 are given in the appendix. The first two terms is the loss in income associated with the transfers

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<sup>26</sup> The *de jure* political power is the power which is allocated by the political institutions in a society. For instance, it includes the power of rulers and their agents, given to them by the constitution. See, also, for the details of different components of political power and their definitions Acemoglu and Robinson (2006).

from the rulers to the agents with the corresponding institutional change. The third term is the change in the receipts from expropriation while the last term is their corresponding change in profits. According to the setting, all the first three terms are expected to be negative while the last term should be positive. To put it in more concrete words, there is a trade-off in initiating institutional reforms, *i.e.* good institutions imply higher share in profits from the production sector, lower expropriation receipts, and a loss in terms of transfer from the rulers to the agents. On the other hand, the persistence of bad institutions or the status quo implies higher expropriation of rents, lower share in profits, and no additional transfer to the agents. Thus any type of institutional change will be initiated if the net benefits to the rulers are positive.

In the same way like rulers, at the status-quo level,  $R_0, A_0=A^*$  is the optimal level of the effort of agents. Now in order to improve institutional framework, more effort from agents of the state is needed.<sup>27</sup> In order to induce agents to supply more effort, there must be some incentives associated with any effort level,  $A>A_0=A^*$ . Here we assume that for any institutional improvement, the agents is provided with some constant rate,  $\theta$ , of benefits that is

$$INC_a = \theta R_1 \tag{13}$$

Incorporating this increment in the optimal behavior of the agents, we would drive the best response function of the agents.<sup>28</sup> This is given by the following function:

$$A^{**} = \left[ \bar{R}(\rho + \theta - \frac{\beta Z}{2\bar{R}} - \frac{\beta X}{\bar{R}}) \right]^{\frac{1}{1-\rho}} \tag{14}$$

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<sup>27</sup> Acemoglu and Verdier (2000) suggest when agents are difficult to monitor, they should receive higher wages. So in order to reduce corruption and improve the efficiency of agents, the incentives for corruption must be diminished that can be made possible with higher wages.

<sup>28</sup> The details of the derivation are given in the appendix.

The only difference between  $A^*$  and  $A^{**}$  is the inclusion of  $\theta$  inside the bracket, *i.e.* with the offer of increment,  $A^*$  increases to  $A^{**}$ . Thus  $\theta > 0$  implies higher level of optimal efforts by the agents in comparison with the status quo.

### ***1.4.3. Equilibrium***

This is sequential game with perfect information; so it can be solved by backward induction. The ruler serve as Stackelberg leader in the game that is he observes the optimal effort of agents of the state and the optimal supply of labor at all levels of incentives and the corresponding institutional framework respectively; and then play his strategy.

#### ***1.4.3.1. Strategies Sets***

The strategy of rulers is to either initiate reforms or maintain with the status quo; and if the reforms are to be initiated, then how much incentives are to be offered to the agents? To write it more formally, the actions of rulers are given by the function:

$$\sigma_p : [0,1] \times [A_0,1] \rightarrow \{0, (1, \theta \in \mathfrak{R}^+)\}$$

0 refers to status-quo and 1 refers to initiating institutional reforms. Similarly, the functional form of the actions of agents is given as:

$$\sigma_a : \left[0, \frac{(\bar{R} - R_0)Z}{2\bar{R}}\right] \times \left[0, \frac{(\bar{R} - R_0)X}{\bar{R}}\right] \times \theta \rightarrow [A_0,1].$$

Finally, the function of the citizens' actions is the following:

$$\sigma_c : [R_0, \bar{R}] \rightarrow \left[ (QR_0)^{\frac{1}{1-\alpha}}, (Q\bar{R})^{\frac{1}{1-\alpha}} \right].$$

Given, these sets of strategies, we define sub-game perfect equilibrium for this game.

**Definition 1:** *The sub-game perfect equilibrium is defined as “the strategy profile:*

$$\sigma^* = (\sigma_p^*, \sigma_a^*, \sigma_c^*)$$

*such that the strategies of the rulers, agents and the citizens are best responses to each other”.*

There are various strategy profiles which can be in equilibrium depending on the values of parameters. Nevertheless, for any specification of parameters, the equilibrium is unique.

#### **1.4.3.2. Subgame Perfect Equilibrium**

Given any optimal values of  $A$  and  $L_y$ , such that the inequality C.1 in not satisfied, there is unique sub-game perfect equilibrium in which the players play

$$\sigma_p^* = 0, \quad \sigma_a^* = A_0 \quad \text{and} \quad \sigma_c^* = (QR_0)^{\frac{1}{1-\alpha}},$$

In the same way, for any optimal values of  $A$  and  $L_y$  such the inequality C.1 is satisfied, there is unique equilibrium for any specification of the parameters. In this equilibrium players play

$$\sigma_p^* = 1, \theta, \quad \sigma_a^* = \left[ \bar{R}(\rho + \theta - \frac{\beta Z}{2\bar{R}} - \frac{\beta X}{\bar{R}}) \right]^{\frac{1}{1-\rho}} \quad \text{and} \quad \sigma_c^* = (QR_1)^{\frac{1}{1-\alpha}}.$$

The rate of incentives to the agents,  $\theta$ , is determined by the maximization problem of the rulers that is given by the following implicit equation.

$$\frac{\partial V_p^1}{\partial \theta^*} = \frac{\rho}{1-\rho} \bar{R} A^{2\rho-1} \left[ -(\rho + \theta + \frac{1-\rho}{\bar{R}\rho} A^{1-\rho} + \frac{\beta Z}{2\bar{R}}) + \beta \kappa (\bar{R} A^\rho Q)^{\frac{\alpha}{1-\alpha}} \right] = 0 \quad 15.$$

Given, the assumed functional forms, it is complex to derive the optimal level of  $\theta^*$  in reduce form; however, assuming that the conditions of Implicit Function Theorem (IFT) are satisfied, we can characterize the comparative statics with respect to the parameters of the model. To do comparative statics, we assume  $\alpha=2/3$ . In most of the empirical literature on growth, the labor share in production is estimated as  $\alpha=2/3$ .<sup>29</sup> Also, we assume that the shares of rulers' and agents in the institutional framework sector are equal, *i.e.*  $\rho=1/2$ . These assumptions are made to make things clear for understanding. The resulting comparative statics with respect to the optimal rate of incentives that rulers would offer to the agents are summarized in the following lemma.

**Lemma 1.3:** *For the optimal level of  $\theta$  with respect to the ruler, it is true that*

$$\frac{d\theta^*}{dZ} \leq 0 \text{ if } \frac{\partial}{\partial Z} \left( \frac{\partial V_p^1}{\partial \theta^*} \right) \leq 0 \quad \text{and} \quad \frac{d\theta^*}{d\kappa} \geq 0 \text{ if } \kappa \leq 1$$

**Proof:** Given in the appendix.

The change in the available rentable resources,  $Z$ , has four effects for the outcomes of rulers. One is the direct effect and the other three are indirect. For instance, when  $Z$  increases, the direct effect comes on expropriation which also increases. The indirect effect is through its effect on institutions. The increase in  $Z$  implies the worsening of institutions which, in turn, implies lower payments to agents, lower profits, and higher expropriation in future. So lemma 4.3 implies that  $\theta^*$  will decrease with the increase in  $Z$  if the loss in profits is smaller than the benefits from higher expropriation and lower payment to agents. This result is very important in the sense

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<sup>29</sup> See, for instance, Krueger and Lindahl (2001) for a detailed discussion of the most plausible world level of the labor share.

that the improvements in institutions would be prompted only if the importance of profits was higher to the rulers relative to that of the expropriation. The second result is straightforward; as an increase in  $\kappa$  implies higher share of the rulers in profits from production sector, which induces the rulers to initiate institutional reforms and offer a positive rate of incentives to the agents. Now, we summarize the results of the equilibrium in the following proposition:

**Proposition 1:** *There is a unique sub-game perfect equilibrium in the game described above*

$$(\sigma^* = (\sigma_p^*, \sigma_a^*, \sigma_c^*)).$$

*It is such that if the inequality C.1 is not satisfied, then institutional framework is  $R_0$  and  $A=A_0=A^*$  and*

$$L_{y,1} = (QR_0)^{\frac{1}{1-\alpha}}.$$

*If the inequality C.1 is satisfied, then  $A=A^{**}$ , and*

$$R_1 = \bar{R}(A^{**})^\rho \text{ and } L_{y,1} = (QR_1)^{\frac{1}{1-\alpha}}.$$

It is highlighted how in economies with multiple interest groups, and having rentable resources, the incentives for institutional reforms diminish with the increase in rentable resources. Second, by taking the enforcement of institutions as endogenous and the agents of the state as a separate interest group, it is shown how the actual effectiveness of the formal institutional framework will be shaped. In other sense, it is illustrated that the prevailing institutional framework in any society reflects the optimality behavior of the various interest groups in that society. In

order to bring about change, the privileged groups need to be incentivized to change their strategy to the new equilibrium.

### 1.4.3.3. Efficiency

What is the efficient output in this economy? The answer to this question is simple. We need to find the values of  $A$  that maximizes the total output in the production sector. The output in the reduced form is given as:

$$Y = (\bar{R}A^\rho)^{\frac{1}{1-\alpha}} Q^{\frac{\alpha}{1-\alpha}}$$

The value of  $A$  that, for a given values of the parameters, maximizes the total output is 1. When  $A=1$ , the institutional framework in the economy is at the best level, *i.e.*  $\bar{R}$ . By assumption, this implies no corruption, and no expropriation of natural resources or foreign aid. Using these facts in the expression for  $A^{**}$  implies

$$\theta^{**} = \frac{1}{\bar{R}} - \rho \quad 16.$$

This is the level of  $\theta$  that will induce the agents to offer its total supply of endowment to the institutional framework.  $\theta^{**}$  is decreasing with  $\rho$ . The intuition is that  $\rho$  is the share of agents in the institutional sector, and higher  $\rho$  implies higher rewards for the effort in the maintenance of institutions which serves as an alternative to  $\theta$ . Similarly,  $\theta^{**}$  is also decreasing with  $\bar{R}$ . This is because relative expropriation increases at all levels of  $R_i$  with the increase in the ideal institutional framework,  $\bar{R}$ . Thus, the agents' opportunity cost of improvement in institutions decreases. As a result, little incentives are needed to induce agents for higher effort.

However, efficiency can only be achieved if the incentives of both the rulers and the agents are coincided with the ideal form of institutional framework. In other words, efficiency requires:

$$\theta = \theta^{**} = \frac{1}{\bar{R}} - \rho \quad \text{and} \quad R_1 = \bar{R},$$

and C.1 is satisfied at the efficient level of institutions, *i.e.*

$$(\rho R_0 - 1) - \frac{\beta(\bar{R} - R_0)Z}{2\bar{R}} + \beta\kappa(1 - \alpha)Q^{\frac{\alpha}{1-\alpha}} \left[ \frac{1}{\bar{R}^{1-\alpha}} - R_0^{1-\alpha} \right] \geq 0 \quad C2.$$

This is equivalent to stating that the payoffs of the ruler at the efficient level are at least as much as it would be if the system continued with the status-quo. The purpose of this discussion is to highlight the fact that in societies where the agencies are strong, the constraints to efficiency may not only be associated with the rulers; but also, these self-interested agents might hinder institutional reforms. In this simple model, if C.1 (C.2) is not satisfied, the rulers would prefer to continue with the status-quo; *i.e.* they would never prefer the efficient level of institutional framework as there are no associated incentives. Similarly, for  $\theta < \theta^{**}$ , the agents would never offer the efficient level of effort. In general, when it is in the interest of those with sufficient bargaining strength to alter the formal rules will there be major changes in the formal institutional framework (North, 1981).

## 1.5. Conclusion

This study is motivated by the previous literature that has emphasized the importance of institutions in the growth and development process. Especially, we have focused on the costs of incorporating state actors and their interests into the formal sanctioning process. Additional motivation is given by the literature on the curses of natural resources, foreign aid or other types of rents that are associated with state intervention. Today there are many countries in the world characterized by lacking democracies along with powerful agencies. In order to protect their

rents, the selected rulers-cum-politicians prevent institutional reforms. In the same way, agencies, whether they are civil or military, are constraints to institutional reforms. There are various degrees of the power that they have. In some countries they are serving the interests of the rulers and, in return, are offered with perks and privileges. Yet in other countries, they are jointly involved in the expropriation of rents provided by the availability of natural resources wealth or foreign aid. Their involvement in decentralized corruption is widely evidenced in many instances. This paper is an attempt to formalize these issues and provide a framework which can explain how can the availability of rents offered by the natural resources wealth, foreign aid or corruption potential lead the rulers and their agents to persist with the bad set of institutions.

It is shown that the greater the amounts of these rents, the lesser are the incentives that the rulers and agents have for institutional reforms. This can be a possible explanation for the persistence of underdevelopment in natural resources rich economies like Nigeria, Venezuela, Mexico etc. and the most aid receiver countries like Mozambique, Congo Democratic Republic, Tanzania, Philippines, and Pakistan. The same is true for the most corrupt countries like Bangladesh, Somalia, Haiti, Angola and some Central Asian Republics etc. To improve economic institutions in these countries a larger set of incentives is to be given to both the rulers and agents so that to make expropriation and corruption less advantageous relative to those incentives.

Although the model discusses the endogenous behaviors of different interest groups in a clear way, we believe that several other aspects might be fruitfully analyzed within the given framework. For instance, we have focused only on the impact of institutions on labor supply or profits. It can be extended to see the dynamic effects of institutions on capital accumulation, including

both physical as well as human. In addition, an econometric analysis is clearly needed in order to understand the exact channels of causation.

## Appendix 1.

A. Let

$$Q = (\alpha + (1 - \kappa)(1 - \alpha)) \quad A1$$

Then the labor supply is

$$L_{y,t} = (QR_t)^{\frac{1}{1-\alpha}}$$

B. The ruler's payoff from status-quo is given as:

$$V_p^0 = \left( \frac{\bar{R} - R_0}{2\bar{R}} \right) Z + \kappa R_0 (1 - \alpha) (QR_0)^{\frac{\alpha}{1-\alpha}} + T - \rho R_0 + \beta \left[ \left( \frac{\bar{R} - R_0}{2\bar{R}} \right) Z + \kappa R_0 (1 - \alpha) (QR_0)^{\frac{\alpha}{1-\alpha}} \right] \quad A2.$$

While his payoffs, given the new set of institutions is given as

$$V_p^1 = \left( \frac{\bar{R} - R_0}{2\bar{R}} \right) Z + \kappa R_0 (1 - \alpha) (QR_0)^{\frac{\alpha}{1-\alpha}} + T - (\rho + \theta) R_1 + \beta \left[ \left( \frac{\bar{R} - R_1}{2\bar{R}} \right) Z + \kappa R_1 (1 - \alpha) (QR_1)^{\frac{\alpha}{1-\alpha}} \right] \quad A3.$$

The individual rationality constraint,  $V_p^1 - V_p^0 \geq 0$  implies that

$$-\theta R_1 - \rho(R_1 - R_0) - \frac{\beta(R_1 - R_0)Z}{2\bar{R}} + \beta\kappa(1 - \alpha)Q^{\frac{\alpha}{1-\alpha}} \left[ R_1^{\frac{1}{1-\alpha}} - R_0^{\frac{1}{1-\alpha}} \right] \geq 0 \quad C1.$$

C. With the new set of incentives, the agent's maximization problem becomes

$$V_a = \text{Max}_A \left( \frac{(\bar{R} - R_0)Z}{2\bar{R}} + \frac{(\bar{R} - R_0)X}{\bar{R}} + (\rho + \theta)\bar{R}A^\rho + \frac{\beta(\bar{R} - \bar{R}A^\rho)Z}{2\bar{R}} + \frac{\beta(\bar{R} - \bar{R}A^\rho)X}{\bar{R}} + \rho(1 - A) \right) \quad A4.$$

As a result, the new level of effort after incentives is  $A^{**}$  and is given as

$$A^{**} = \left[ \bar{R} \left( \rho + \theta - \frac{\beta Z}{2\bar{R}} - \frac{\beta X}{\bar{R}} \right) \right]^{\frac{1}{1-\rho}} \quad A5.$$

**D. Proof of Lemma 1.3:** The first order condition of the ruler after he decides to bring about institutional reforms is given by the equation:

$$\frac{\partial V_p^1}{\partial \theta^*} = \frac{\rho}{1-\rho} \bar{R} A^{2\rho-1} \left[ -(\rho + \theta + \frac{1-\rho}{\bar{R}\rho} A^{1-\rho} + \frac{\beta Z}{2\bar{R}}) + \beta \kappa (\bar{R} A^\rho Q)^{\frac{\alpha}{1-\alpha}} \right] = 0 \quad A6.$$

Given the assumptions on the parameters values, equation *A6* implies that

$$\frac{d\theta^*}{dZ} = - \frac{\frac{\partial}{\partial Z} \left( \frac{\partial V_p^1}{\partial \theta^*} \right)}{\frac{\partial}{\partial \theta^*} \left( \frac{\partial V_p^1}{\partial \theta^*} \right)} = - \frac{-\beta^2 \kappa (Q\bar{R})^2 A^{\frac{1}{2}}}{\left[ 2\bar{R} \beta \kappa (Q\bar{R})^2 A^{\frac{1}{2}} - 2 \right]} \quad A7.$$

Since  $\theta^*$  is the maximizer, so the denominator is negative by the definition of a maximum. The numerator is negative which completes the proof of the first part of the lemma, i.e.

$$\frac{d\theta^*}{dZ} \leq 0 \text{ if } \frac{\partial}{\partial Z} \left( \frac{\partial V_p^1}{\partial \theta^*} \right) \leq 0$$

This implies that the marginal effect of  $\theta^*$  is decreasing with the increase in  $Z$ . Increase in  $\theta^*$  implies improved institutional framework, which in turn, implies higher profits, higher payments to agents and lower expropriation of available rents. Similarly increase in  $Z$  implies lower institutional framework, which in turn, implies higher expropriation, lower profits and lower payment to agents. Equation *A7* implies this joint effect must be negative for  $\theta^*$  to respond negatively to changes in  $Z$ .

Similarly, to see the effect of a change in  $\kappa$  on  $\theta^*$ , we again using the implicit function theorem

$$\frac{d\theta^*}{d\kappa} = -\frac{\frac{\partial}{\partial \kappa} \left( \frac{\partial V_e^1}{\partial \theta^*} \right)}{\frac{\partial}{\partial \theta^*} \left( \frac{\partial V_e^1}{\partial \theta^*} \right)} = -\frac{\beta \bar{R}^2 Q A (Q - 2\kappa(1-\alpha))}{\left[ 2\bar{R} \beta \kappa (Q\bar{R})^2 A^{\frac{1}{2}} - 2 \right]} = -\frac{\beta \bar{R}^2 Q A (1-\kappa)}{\left[ 2\bar{R} \beta \kappa (Q\bar{R})^2 A^{\frac{1}{2}} - 2 \right]} \quad A8.$$

Again by the definition of a maximum, the denominator is negative while the numerator is obviously positive for  $\kappa \leq 1$  which is the case by assumption. This completes the proof of the second part of the lemma.

### E. Proof of Lemma 1.2:

$$L_{y,t}^* = [(\alpha + (1-\kappa)(1-\alpha))R_t]^{1-\alpha} = (QR_t)^{1-\alpha} \quad 12.$$

Taking the first order of derivative of the optimal level of labor supply with respect to  $\kappa$ , we get the result

$$\frac{dL_{y,t}}{d\kappa} = \frac{1}{1-\alpha} (QR_t)^{\frac{\alpha}{1-\alpha}} \left[ -(1-\alpha)R_t + Q \left( \frac{dR_t}{d\theta^*} \right) \left( \frac{d\theta^*}{d\kappa} \right) \right] \quad A9.$$

The first term inside the bracket is negative for any  $\alpha < 1$ . The second term is positive because  $\frac{dR_t}{d\theta^*} \geq 0$  is implied by  $\frac{dA^{**}}{d\theta^*} \geq 0$  and  $\frac{d\theta^*}{d\kappa} \geq 0$  is implied by A8 for  $\kappa \leq 1$ . Thus

$$\frac{dL_{y,t}}{d\kappa} \geq 0 \quad \text{iff} \quad Q \frac{dR_t}{d\theta^*} \frac{d\theta^*}{d\kappa} \geq (1-\alpha)R_t.$$

F.

**Table 1.1: Comparison of Two Asian Tigers and Two Developing Countries**

Country	GDP per capita	RSP	Inst	AID (US Million \$)	CPI	NR
Korea, South	20756.69	0.500	6.620	91.265	5.012	0.012
Singapore	43866.92	0.802	8.856	14.374	0.819	0
Nigeria	1222.48	0.028	2.773	547.860	8.268	33.844
Pakistan	1006.95	0.083	3.655	899.189	7.730	3.581

**Source:** World Development Indicators, World Bank; World Bank Governance Indicators; and Rauch and Evans (2000).

**Note:** Each entry is the average of the available data as otherwise indicated in Table 1.2.

**Table 1.2: Description of the Variables**

variable	Description
GDP Per Capita	It is Gross Domestic Product (GDP) per capita in current US \$ in 2010, taken from the World Development Indicators.
Inst.	This variable is a measure of institutional quality. It is based on the World Bank's Governance Matters VII (Kaufman, Kraay and Mastruzzi, 2009) and is the average of their three measures that is the average of the Government Effectiveness, the Rule of Law and Regulatory Quality. The basic purpose is to capture the effects of bureaucracy, judiciary and army etc. The original indices takes values from -2.5(poor quality) to 2.5(highest quality). However, here I changed the index for simplicity, which now in this study takes the values from 0(extremely poor institutions) to 10 (perfect institutions).
CPI	This measure is based on the Corruption Perception Index of the Transparency International and again the value of the original index has been changed for simplicity. In this study, the index takes the values from 0(no corruption) to 10(highest corrupt).
NR	This is a measure of natural resources rents, which are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents, taken from World Development Indicator (WDI).
AID	Foreign aid is denoted by aid, represents Official Development Assistance (ODA) and other official aid received in current US dollars, taken from the WDI, World Bank.
RSP	RSP is a measure of the salaries in the public sector relative to private sector and is taken from Rauch and Evans (2000), which is the ration of the salaries in the public sector and those in the private sector.

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## Chapter 2

# Distributive Consideration in Institutional Change: The case of Zia's Islamization Policy in Pakistan

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### Abstract

Institutional Change is an interactive process that results from the social interactions of economic actors. Several perspectives like ideology, efficiency, or distribution etc. are relevant in studying institutional change. In this paper, the distributive consideration is analyzed and an argument is made in favor of this approach by providing evidence from Pakistan's *Islamization* policy. Our analysis shows that Zia's *Islamization* program was motivated by his search for legitimacy, and his rent-seeking interests. Domestic legitimacy was achieved through the introduction of Islamic clauses in the constitution as it was a popular demand in a state which was already established through a religious rhetoric. The *Islamization* program also helped in attaining international legitimacy as the religious circles informally initiated *Jihad* against Soviet Union in Afghanistan. The *Islamization* policy and *Jihad*, in turn, resulted in windfall gains in the form of US economic and military assistance that led to a voracious rent-seeking in the Pakistani society. After the detailed descriptive analysis, we model this situation in two-stage rent-seeking activities. We show how the rent-seeking contest among various interest groups results in institutional change as an equilibrium outcome. Our results indicate that Pakistan's *Islamization* program is associated with the parameter shifts in our model.

**JEL Classification:** O53, P16, E02, O43, N45

**Key Words:** Institutional Change, Distributive Consideration, Zia's *Islamization* Program, Interest Groups, US Military and Economic Assistance

## **2.1. Introduction**

The traditional Neoclassical Economics model deals only with choices-through-markets and takes laws and institutions exogenous to this process. The state and the affiliated institutions are regarded as Omni-competent and costless instruments for promoting efficiency. In recent years, however, there is a considerable increase in research on issues related to the state and its institutions. The research in this area has focused mainly on two points. First, there is an increased emphasis on the importance of institutions in the underlying growth and development process. Second, in order to justify the institutional explanations of cross-countries development gaps, there has been an ongoing and provocative academic debate on the ‘evolution of institutions’ (Moore, 1966; Demsetz, 1967; North and Thomas, 1973; North, 1981, 1990, 2005; Libecap, 1989; Sokoloff and Engerman, 2000; Djankov et. al., 2003; Knight, 1992; Acemoglu, 2003; Acemoglu et al., 2005; Ostrom, 2005; Tan, 2005; Bates, 2008; Kingston and Caballero, 2009). This paper is related to the evolution of institutions. With regard to the evolution of institutions, four different approaches have been extensively discussed in the literature: the Efficiency View of Institutions, the Incidental View of Institutions, the Ideological View of Institutions, and the Social Conflict View of Institutions. The first approach, based on the cost and benefit analysis of institutions from social perspective, asserts that institutions appear and persist when their social benefits exceed their social costs. The second approach takes institutional change as a byproduct of some other social interaction or historical accidents. The ideological view takes ideology and beliefs as the basis of institutional evolution. The final approach to the selection of institutions takes institutional change as a consequence of the conflict over the sets of institutions.

In this paper, an argument is made in favor of the social conflict view of institutions, with special reference to formal institutions. Alternatively, we argue that the distributional advantages are of primary importance in the selection, persistence and change of institutions. *Zia's Islamization programme* is provided as an evidence to show that the interests of the privileged groups are important factors in institutional change besides other relevant factors. It illustrates how informal institutions like ideology or culture shape formal institutions in that the interest groups able to demonstrate that their objectives are congruent with the popular ideology are more likely to achieve legislative success. By extending on this argument, we make an endeavor to illustrate that the interest groups make an extensive use of the prevalent ideology for the sole purpose of their rent-seeking. Accordingly, they devise or change the constitutional rules if it is essential for ensuring their rents. Second, *Zia's Islamization programme* provides us with an interesting case for searching historical and institutional reasons for insurgency in societies. The rest of the paper is organized in four sections. Section 2 surveys some of the available literature that clarifies the Social Conflict View of Institutions. Based on this approach, we make the descriptive analysis of *Zia's Islamization* measures in section 3. We make an argument that *Zia's* search for legitimacy combined with his rent-seeking interests led him to collaborate with religious groups and thus, institutionalize Islam in Pakistan. Finally, in order to draw some general proposition from the historical analysis of *Zia's* constitutional amendments, we model this situation in section 4. In particular, we show that the interaction among the interest groups involved in rent-seeking results in the equilibrium institutional change. Section 5 concludes the paper.

## **2.2. The Social Conflict View of Institutions**

Many institutional economists agree that institutions emerge as a solution to a specific coordination problem.<sup>1</sup> There are associated gains that are accrued from the interactions of the coordinating agents. The Social Conflict View of Institutions entails that the distribution of these additional gains predominates in explaining the institutional change. According to this approach, institutions are social choices that structure social life so as to produce the gains from cooperation. However, to produce these collective benefits, rules can be structured in more than one way. These different subsets of institutions, in turn, are associated with varying incentives for different groups in a society. Consequently, there is conflict of interest over these choices and those are selected favored by the group with greater bargaining power. In addition to their selection, their persistence and their enforcing characteristics are also the consequence of strategic interactions. Thus, in this sense, institutions are equilibrium outcomes (Knight, 1992; Greif and Kingston, 2011).<sup>2</sup> Given this presumption, the institutional structure should embody the goals of the interacting parties and hence, should be a fundamental determinant of the distribution of economic and political rights in a community.<sup>3</sup>

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<sup>1</sup> See, for instance, North (1990), Knight (1992), Acemoglu and Robinson (2012).

<sup>2</sup> According to Grief and Kingston (2011), a situation is transformed into an institution when this situation motivates each individual of follow regularity of behavior and to act in a manner contributing to the perpetuation of that situation.

<sup>3</sup> Acemoglu and Robinson (2012) argue that extractive political institutions rest the political power in the hands of a privileged group. Similarly, the extractive economic institutions provide limited protection to the property rights and provide limited access to justice. In contrast, inclusive political institutions and economic institutions distribute the political power and the protection of property rights broadly to the wide cross-section of the society.

The origin of the social conflict view can be found in Marx (1970)<sup>4</sup>; however, recent development of the idea is extensively discussed in the onward literature (Dobb, 1948; Brenner, 1982; Olson, 1965; North, 1981, 1990, 2005; Mitchell and Munger, 1991; Kinght, 1992; Libecap, 1989; Voigt, 1999; Acemoglu, 2003; Ostrom, 2005; Huntington, 2006; Greif and Kingston, 2011; North et al., 2009; Acemoglu and Robinson, 2012). Most of this literature asserts that the prevailing subset of institutions reflect the interests of the privileged groups. The change, in turn, is brought out by the change in the relative bargaining power of the different groups. For instance, according to Dobb (1948) and Brenner (1982) feudalism as a set of institutions was designed to extract rents from the peasants at the expense of social welfare. Also, it was an equilibrium outcome in the sense that the peasants could not do better than subsiding on the land and shelter provided by their lords. The Black Death (1348-1350) combined with the Peasants' Revolt of 1381 changed the relative bargaining power in Medieval Europe and thus, resulted in the end of feudalism.<sup>5</sup> Black Death was like Acemoglu and Robinson's (2012) 'critical juncture' which, subsequently, resulted in a substantial change in the relative bargaining powers of different groups in the Medieval Europe.

North (1981) quotes that economic and political institutions are not always chosen for the benefit of the whole society. The principals and their agents will choose the institutions that

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<sup>4</sup> According to the Marx theory of class conflict, different economic classes are characterized by different interests and capacities. This conflict of interests would be manifested in social revolution that would replace the existing institutions with a new set of institutions. The new set would be functionally superior to the existing ones. Although, Marx was clear about the occurrence of social change; however, his theory could not elaborate on the process of the change itself.

<sup>5</sup> For instance, the Black Death caused a reduction in the overall supply of labour that, for the first time, Feudal lords had to compete for labour. Second, some Manors had the entire ruling class wiped out. Third, the fear of catching the plague drove people to be mobile for the first time. All of these resulted in the increased bargaining power of peasants relative to lords.

maximize their own rents. Consequently, these institutions may not coincide with those that maximize the welfare of the whole society. Regarding the process of change, North (1990) concludes that institutional change is brought by changes in the relative prices that create incentives for individuals and groups to renegotiate contracts or restructure rules. The renegotiation of contracts or restructuring the rules creates additional rents for the privileged groups, arising mainly from the asymmetries in the bargaining power. Similarly, to Knight (1992), it is the distributional consequences that leads the evolution of social institutions to an equilibrium outcome. The groups with more bargaining power not only have the ability to change the rules; but also, they change those in their favor. In a recent survey of literature by Greif and Kingston (2011), the authors argue that formal rules are selected through a centralized process of bargaining and political conflict between individuals and organizations who attempt to change the rules for their own benefit.

In a related line of research, Libecap (1989) introduced distributional conflict into his explanations of efforts by economic actors in contracting for rights over property. According to his theory, the actors with more efforts win the rights. This theory implies that the existing institutions create interest groups with vested interests in preserving the status quo which, in turn, may result in the persistence of inefficient institutions. Acemoglu (2003) and Ostrom (2005) attribute the persistence of inefficient institutions to the commitment problem. Namely, the winners of the institutional change don't commit to compensate the losers of the same change. Even if the winners commit; still, the commitment is not credible due to the privileged position of the

winners in terms of their greater political power.<sup>6</sup> Thus, institutions are shaped by the distributional concerns; and there are substantial inefficiencies in the structuring of institutions, associated mainly with the differences in the goals and in the bargaining powers of the interacting parties (Bates, 2008; Alston, 1996; Tsebelis, 1990). Efficiency, mainly, results in those cases where institutions providing efficiency are coincident to those ensuring the distributional advantages of the privileged groups. We are extending this argument by providing an historical analysis of Zia's constitutional amendments.

### **2.3. Zia's Islamization Policy**

Pakistan is an interesting case for studying autocracies and dictatorships. It has, though, experienced both democracy and dictatorship but the institutional framework in both forms of the government has been authoritarian. The military has overthrown the civilian government three times. On each occasion, the basis of the coup was an infringement of the institutional or rental interests of the military, and supported by those interest groups, whose interests had also been compromised (Rizvi, 1984; Aziz, 2008; Bhave and Kingston, 2010). Thus, throughout its history, the military dominate the politics, civil society and economy in Pakistan, having clear implications for economic and institutional development. For instance, table 2.3 in the appendix, indicating Pakistan's economic and military indicators by regime type, shows that although the military rulers dominate in terms of growth performance but the growth performance is never persistent onwards the military regimes. The growth during the military regimes is mainly driven by the increased US aid, associated with

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<sup>6</sup> Acemoglu (2003) and Acemoglu and Robinson (2012) argue that the privileged groups in the status-quo have greater political power and economic institutions mainly emanates from political institutions characterized by the distribution of political power. Thus, the possessors' of political power cannot commit not to use this power for current or future predation.

the military rulers. This is equivalent to the Stalin's industrial growth in the Soviet Union during his rule (1941-1953) which never persisted (Acemoglu and Robinson, 2012).<sup>7</sup>

Similarly, table 2.3 further illustrates that the military has been eating a big fraction of the federal government budget throughout the history of Pakistan. For instance, from the beginning to the time of Zia, the military expenditure amounted around 50% of the central government expenditure.<sup>8</sup> This incentivizes the military to remain active in politics in order to ensure its higher share in government spending. However, its involvement into politics and in particular, its persistent disruption of the civilian politics resulted in the persistence of extractive political and economic institutions which have been a perpetual hindrance to persistent economic success.<sup>9</sup> In this study, we focus on a specific regime, *i.e.* Zia's era, to show that the collaboration between the two privileged groups resulted in institutional change in favour of these groups. In this section, firstly, we provide the background of and the motives for the constitutional amendments. Subsequently, we enrich our analysis by thoroughly examining the sources of rents and the groups that were involved in seizing those rents.

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<sup>7</sup> Acemoglu and Robinson (2012) highlighted that growth under extractive institutions is never persistent. This is because such a growth is not driven by the incentives structure; rather it is a growth driven mainly by coercion. In contrast, growth under inclusive institutions is persistent because the major motives for such a growth are incentives structure and the Schumpeterian creative destruction.

<sup>8</sup> The higher allocation to the military has adverse consequences for development expenditure. For instance, as table 2.3 indicates, throughout its history, Pakistan has never been able to allocate more than 2.34% of GDP for education.

<sup>9</sup> For instance, the Transparency International has always been ranking Pakistan high on their corruption index (the second highest worldwide in 1996). Similarly, the World Bank's institutional indices on the effectiveness of governance, regulatory quality, and the rule of law place Pakistan in the lowest category (Ahmad, 2001).

### ***2.3.1. Background of Interest Groups in Pakistani Society***

With a view to their influence in shaping formal institutions, the privileged groups can be classified in terms of their political power. Acemoglu and Robinson (2006) distinguish between two sources of political power, *i.e.* *de jure* power and *de facto* power. *De facto* power is the ability of a group what it can do to other groups and the society at large by using force or other resources. In contrast, the *de facto* power is the political power which is allocated by the political institutions. Given this definition and the different sources from which political power emanates, the privileged groups in any society can be divided into two broad groups, *i.e.* private interest groups and public interest groups. In such a classification, the private interest groups possess the *de facto* power while the public interest groups have the *de jure* power. However, the dominance of a particular group is subject to different societies, *i.e.* different societies may have different dominant groups at the same time. Similarly, the dominance may evolve over time in a particular society.<sup>10</sup> A corollary to this point is that a society may have more than one dominant group at a particular time. Nevertheless, in most of the cases, the distribution of this power is associated with the tilt in institutions in favor of the most powerful group.

The private interest groups can be further categorized by the source of their *de facto* power. For instance landed aristocracy or industrialists as interest groups have the *de facto* power in the form of their resources. They may manipulate political decisions or

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<sup>10</sup> For instance, according to Acemoglu and Robinson (2012), at the time of industrial revolution, the British had a dominant interest group in the form of commercial merchant class while their colonies in Africa or India had a dominant group in the form of landed elite. The dominance is clearly in terms of political power. Similarly, with regards to the evolution of power in a particular society, in medieval times, the dominant class was landed aristocracy in England but its dominance diminished with the rising industrial class associated mainly with Atlantic trade and industrial revolution.

institutional rules in their favor by campaign contributions or lobbying etc. Interest groups shaped by ethno-linguistic fragmentation or religious denomination may change the rules of the game by using their *de facto* power, associated with the number of people following the corresponding group. In the same way, public interest groups like the ruling class, judiciary, bureaucracy, and the military have the *de jure* power to influence rules and regulations in their favor. Now given this framework, in this subsection, we endeavor to classify the interest groups in Pakistan and see their evolution over time.<sup>11</sup> The hypothetical classification, summarized in figure 2.1, includes the landed elite, industrialists and the religious groups in the private interest groups. Similarly, the public interest groups comprise the military, bureaucracy and the judiciary.

In Pakistan, during most of the dictatorships, the ruler has been a military chief, so his interests are mainly reflected in the interests of military. Mostly, the democratic governments in Pakistan have been dominated by the landed elite and the industrialists. However, the *de facto* power of the religious groups, shaped by the followers and their resources, has made them relevant interest groups throughout the history of Pakistan. They can easily manipulate political decisions by using this power.<sup>12</sup>

The origins of landed class in Pakistan are associated with the British colonization. The British created this class in the Indian sub-continent as a bastion of support for their imperial rule. Until 1958, the landlords were dominating Pakistani politics. If there were any changes in the government, it was merely re-alliances

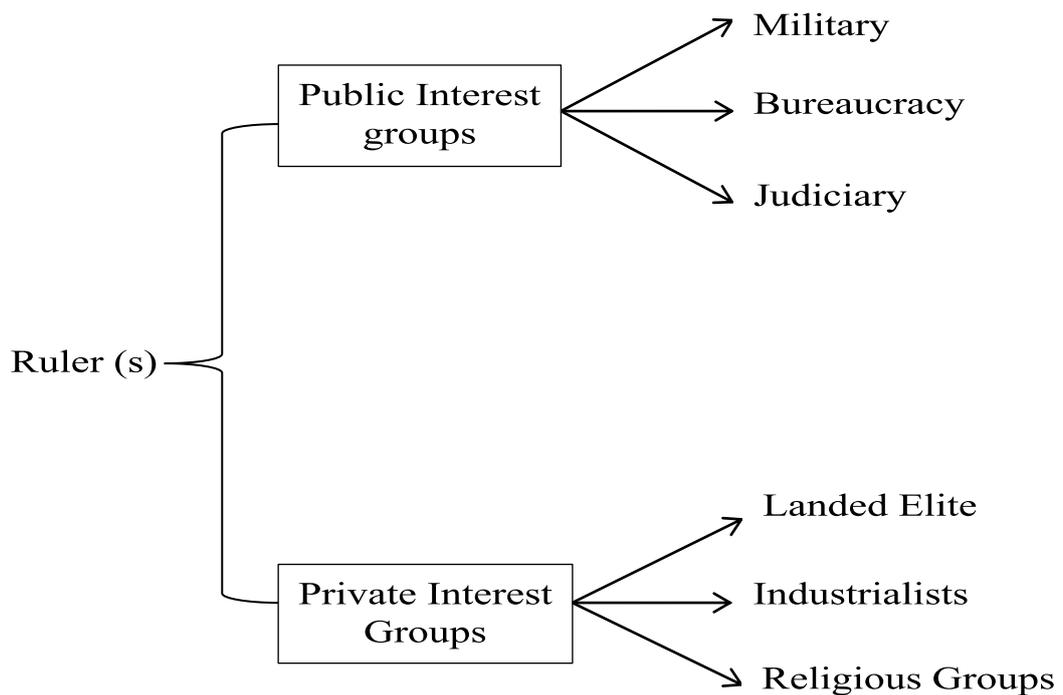
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<sup>11</sup> This classification is just representing how these privileged groups have been dominant in the overall history of Pakistan relative to broad cross-section of the citizens in Pakistan. Of course there may have some overlapping across groups but we take that far-granted.

<sup>12</sup> The religious leaders have a tremendous power in organizing the common populace, so they are largely manipulated by other interest groups.

among the family members of the landlord class. The industrialist class emerged as a byproduct of the policies of import substitution and industrialization in the late 1950s and throughout 1960s. Especially, during the government of Ayub Khan (1958-1969), these policies evolved in a coherent industrial policy.<sup>13</sup> This policy was based on a classical recipe of a society in which a small group of rich industrialists would save more for reinvestment when compared with underpaid workers and poor peasants. Although, the policy achieved higher growth rates of the manufacturing sector, but it also created a schematized interest group in the form of industrialists elites.

**Figure 2.1: A Hypothetical Classification of Interest Groups in Pakistan**



**Source:** Self-Assessment based on History

<sup>13</sup> Industrialists were favored under the instruments of differentiated tariffs, imports rationing and over-valued exchange rate, and so on. Later, substantial amount of credit was allocated to the industries at subsidized rates under auspices the state.

Like landed elite, the bureaucratic structure was also inherited as a colonial legacy. During the colonial times, the creation of a professional bureaucracy was motivated by the need to collect taxes. Thus, given their training and their authoritative behavior, the bureaucracy had emerged into a well-organized interest group in the liberated countries. In Pakistan, at the time of independence, the bureaucracy had strong links with the landlords.<sup>14</sup> The nexus between the landed elite and the bureaucracy controlled the entire politics in the beginning decades of Pakistan. Similarly, judiciary has been involved in the political developments of Pakistan, but their role as a separate interest group has been on the periphery.<sup>15</sup>

The army, also British-trained, was rarely involved in the political decision making at the time of independence. The events of 1947-1958, the formative years of Pakistan, were the beginnings of the institutionalization of the military within the apparatus of the state. In particular, the Kashmir War of 1948 accentuated the strategic instability of the Pakistani state, and contributed to a high level of institutional dependence of the state on military (Bhave and Kingston, 2010). Subsequently, the increased military assistance from US in response to the cold war pacts signed by Pakistan and the incidence of two successive wars with India (1965 and 1971) contributed to raising the power of military. Since then, the military is dominating most of the aspects of the Pakistani society (Aziz, 2008).

However, the composition of these groups and their importance in the economic and political spheres has been subject

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<sup>14</sup> This was established by the classical patron-client structure imposed during colonization. For instance, the colonizers i.e. the British were patrons to bureaucrats and landed-elite who, in turn, were patrons to the common populace.

<sup>15</sup> For instance, during Zia's regime, it was the court which approved the trial and subsequent execution of *Zulfiqar Ali Bhutto*, a civilian ruler before the Zia's regime.

to change from times to times. In the subsequent analysis, we will focus more on groups which were the most relevant in Zia's regime, e.g. the military and the religious groups. Zia's collaboration with religious groups recognized the *ulema* (the Muslim clergy) as an elite group with tremendous power in terms of social organization. The alliance, in turn, raised enormously the cost of collective action among other groups. Consequently, all the remaining interest groups remained on the periphery. Accordingly, we count the remaining of the population in the same group which was less organized with lesser bargaining power relative to these two dominant groups.

### **2.3.2. Zia's Constitutional Amendments**

Pakistan's major *Islamization* amendments, introduced during Zia's regime (July, 1977-August, 1988), were regarded as *Nizam-e-Mustafa*. The detailed chronology of these institutional changes is illustrated in table 2.1. Broadly, these measures included: the establishment of federal *Shariat* Court, increasing the role of the Council of Islamic Ideology, the provisions of *Hudood* ordinance, *ushr* and *zakat* ordinances, the elimination of *riba* (interest-free banking), and the introduction of profit and loss schemes. In *Hudood* Ordinance (1979), crimes that were classified under *Hudood* were the severe crimes like murder, theft, robbery and adultery. The existing punishments for these crimes were replaced with those described in Islamic *Shariah*. For instance, under the Adultery (*Zina*) Ordinance, the woman or the man guilty will be flogged with a hundred stripes, if unmarried; and if they are married, they shall be stoned to death. Similarly, other Islamic punishments like *Qisas* (death punishment) for murder, amputation of hands for theft, and amputation of feet for highway robbery without homicide were institutionalized. Additionally, before 1977,

the use of alcoholic drinks was not a crime at all under the Pakistan Penal Code. It was only, in 1977, for the first time that the drinking and selling of wine by a Muslim was banned in Pakistan. In case of violations, the sentence of imprisonment or a fine of Rs. 5000/-, or both was provided in that law. However, under the subsequent Prohibition Order, these provisions were replaced by the punishment of eight stripes. However, the law does not apply to non-Muslims.

With the regard to Blasphemy, the Pakistan Penal Code (PPC) and the Criminal Procedure Code (CPC) were amended, through successive ordinances in 1980, 1982 and 1986. Accordingly, anything implying disrespect to Muhammad (P.B.U.H.), *Ahle Bait* (family of the prophet), *Sahaba* (companions of the prophet), and *Sha'ar-i-Islam* (Islamic symbols), were recognized as offences. The punishments for the crimes were described in Act III of 1986 which is also called the Criminal Law Act. According to the section 2 of the Act, blaspheming Muhammad (P.B.U.H.) is punishable with death or life imprisonment; disrespecting the Quran is punishable by life imprisonment; and insulting the family or the Companions of the Prophet is punishable by prison up to three years, or a fine, or both.

With a view to Islamize the economy, interest-free counters were opened at all the 7,000 branches of the nationalized commercial banks on January 1, 1980. The *Zakat* and *Ushr* Ordinance were promulgated on June 20, 1980 to empower the government to deduct 2.5% *Zakat* annually from mainly interest-bearing savings accounts. Also, this Ordinance was applicable to shares held in the National Investment Trust (NIT), the Investment Corporation of Pakistan or other companies of which the majority of shares were owned by the Muslims.

**Table 2.1: Chronology and Details of Zia's Institutional Changes**

No.	Name and Date of Institutional Change	Type of Action	Purpose
1.	Taking Coup (July, 1977)	Constitution Suspended	Imposed Martial Law and Civilian Government dethroned.
2.	The Formation of a body by the Council of Islamic Ideology (November, 1977)	The Establishment of an Organization	To formulate recommendations for the <i>Islamization</i> Program.
3.	Empowering Supreme Court to Declare Un-Islamic Laws null and void (January, 1978)	Ordinance	To Islamize the Laws.
4.	New Education Policy (October, 1978)	Ordinance	To enhance the Islamic principles in education based on Islamic Ideology
5.	Enforcement of Islamic Laws regarding rape, adultery, and Prohibition of Wine (December, 1978)	<i>Hudood</i> Ordinance	To transform the punishments for these crimes with those prescribed in Islamic <i>Shariah</i> .
6.	The Establishment of <i>Shariah</i> Benches in Superior Courts (February, 1979)	Ordinance	To deal the cases in courts according to the laws in <i>Shariah</i> .
7.	More Islamic Laws for Murder, Theft and Robbery (December, 1979)	Ordinance	Again, to transform the punishments for these crimes with those prescribed in Islamic <i>Shariah</i> .
8.	<i>Zakat</i> and <i>Usher</i> Ordinance and The Elimination of Usury (June, 1980)	Ordinance	To empower the government to deduct 2.5% <i>Zakat</i> annually from mainly interest-bearing saving accounts and shares schemes.
9.	The Establishment of Federal <i>Shariat</i> Court (May, 1980)	Ordinance	To examine and decide the question whether or not any law or provision of law is repugnant to the injunctions of Islam.
10.	Interest-Free Accounts in Banks (January, 1981)	Ordinance	To allow Pakistan's all nationalized commercial banks to offer Profit/Loss sharing accounts.
11.	Provincial Constitutional Order (March, 1981)	Ordinance	The order provides for the appointment of a federal council ( <i>Majlis-i-Shoora</i> ) consisting of such persons as president may, by order, determine. It was equivalent to Parliament in modern democratic systems.
12.	Blasphemy Laws (1980, 1982, 1986)	Ordinances	To set the disrespect to Muhammad (P.B.U.H), <i>Ahle Bait</i> (family of the prophet), <i>Sahaba</i> (companions of the prophet), and <i>Sha'ar-i-Islam</i> (Islamic symbols) as offences.
13.	Article 58/2-B (November, 1985)	Constitutional Amendment	To give the discretionary power to the president to dismiss the Prime Minister, the elected government or the Parliament.
14.	Validation of the above Ordinances (November, 1985)	Constitutional Act, 1985 (8 <sup>th</sup> Amendment)	All the above changes were passed by <i>Majlis-i-Shoora</i> (Parliament) and Signed by the President.

**Source:** *Gazette of Pakistan, Government of Pakistan*

**Note:** The date in the parenthesis represents the date on which the corresponding institutional change took place.

Besides the *Islamization* amendments, a crucial change to the Constitution of Pakistan was made through the 8<sup>th</sup> Amendment and the Article 58-2(B), which granted the discretionary power to the president to dismiss the elected government of the Prime Minister. Article 58-2(B) also gave the authority to the president to dissolve National Assembly, if in his or her opinion, “a situation has arisen in which the Government of the Federation cannot be carried on in accordance with the provisions of the Constitution and an appeal to the electorate is necessary”. This was a crucial institutional change in terms of transferring the power from parliament to the president.<sup>16</sup> Thus, in this sense, it was equivalent to limiting the Acemoglu and Robinson’s (2012) ‘inclusiveness’.

### ***2.3.3. Zia’s Search for Legitimacy***

Since the beginning of formal social order, societies have experienced a range of authoritarian rulers. For instance, absolute monarchies in the Medieval Europe; the early Muslim identities; communist regimes in Soviet Union, China and North Korea; the present-day monarchies in most of the Arab countries; and the military rulers in the third world countries are the major shapes that authoritarian regimes have taken in various societies and at various times. However, majority of these forms had an associated legitimacy of some degree from the rest of the society. Legitimacy is needed to lay a solid moral foundation for the authority of the state.<sup>17</sup> In old times, legitimacy was mainly associated with

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<sup>16</sup> For instance, it was opposite to signing *Magna Carta* (The Great Charter) that happened in the 13<sup>th</sup> century England. The signing of *Magna Carta* did the opposite by actually raising the power of barons relative to the monarchy.

<sup>17</sup> According to Lipset, (1959), legitimacy is the belief by the majority of the citizens that the regime, defined as the constitutional order, is the most appropriate one for the society.

ideology or beliefs. For instance, in the Medieval Europe, legitimacy came from the *Christians Paternalistic Ethics* which believed in the divine rights of kings and priests who gained their authority from God (Canning, 1996; Hunt, 2003).<sup>18</sup> Similarly, the early Muslim rulers tempted that the earth belongs to the God and they rule as God's deputy or lieutenant on this earth (Crone, 2003). However ideology has always been supplemented by other factors like the government's economic strategy towards the constituents, coercion, customs and inherited status, or propaganda, etc. For instance, in recent days, most of the civilian dictators in the Third World derive their legitimacy from their leadership in the independence struggle. Similarly, the legitimacy of the recent military dictators' is associated with either wars or the institutional interests of the military.<sup>19</sup>

In Pakistan's history of coups, the justifications given for the various military interventions are: institutional interests by the military; external threats to the borders; bad governance by the preceding civilian rulers; and the internal threats like religious and ethnic tensions.<sup>20</sup> However, once taken a coup, the military dictators have, always, sought some solid justifications in order to

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<sup>18</sup> According to the Christian Paternalistic Ethics, society is like a family and those with positions of power and wealth are the father/keeper of the family. They have strong paternalistic obligations toward the common people-the poor or, in analogy, the children. The common person, however, is expected to accept his or her place in society and to be willingly subordinate to the leadership of the wealthy and the powerful in much the same way that a child accepts the authority of his or her father.

<sup>19</sup> For example, in most of the developing countries, the basic factor in military coups is claimed as the 'institutional weaknesses' of the preceding rulers (David, 1987; Collier and Hoeffler, 2007).

<sup>20</sup> The details of these reasons are given in Ibrahim (2009). The author specifies the institutional interests are generally military spending, military autonomy, ideology and professionalism etc. The external threats include conflicts with India, regional insecurity and foreign relations. Similarly, before the coups civilian rulers were marked with incompetence, corrupt behavior, their inefficient policies and their interference in military affairs. Finally, the internal threats quoted in the military coups were religious and ethnic tensions and the survival of state.

lengthen their rule or ensure their rule-associated rents. Accordingly, Zia needed political legitimacy from domestic public as well as international community to rationalize his rule. Domestically, Zia ul-Haq had ousted Zulfikar Ali Bhutto from office; a person though secular and westernized but was very popular among the general masses and the religious circles. Bhutto's slogan of Food, Clothing and Shelter (*Roti, Kapra aur Makan*) for all, and his establishment of the Islamic constitution in 1973 had made him prominent among the common man and the religious groups respectively.<sup>21</sup> Similarly, Zia was unpopular in the international community for two reasons: first, he had deposed a civilian government which was selected through democratic process; second, he was extending Pakistan's nuclear program. These factors had ostracized him in the West, in general, and among the non-proliferation organizations, in particular. In a sense, the international scenario was such that Pakistan was an isolated country in the world.<sup>22</sup>

In order to legitimize his policies, Zia made extensive use of Islamic ideology. His *Islamization* amendments in the constitution of Pakistan and his, subsequent, support for the *Jihadi* activities in Afghanistan legitimized his rule domestically as well as

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<sup>21</sup> At that time, majority of the Pakistan's population were either poor or belonging to a lower middle class. So this slogan was very popular among the general masses. Similarly religious groups favored him for he was the first to introduce a complete Islamic constitution for Pakistan in 1973. In addition to the thorough consultations with the religious groups in the making of Islamic constitution, Bhutto, in a subsequent amendment to the constitution on September 17, 1974, declared Ahmadiyah community (*Qadianis*) as non-Muslims and Shia-Muslims as minority in the country. These two measures were the most popular demands from religious groups in Pakistan at that time, mostly dominated by Sunni *Hanafi* law school.

<sup>22</sup> In April, 1979, Zia executed Bhutto, following some doubtful court proceedings. For this act, he was severely criticized by the international community and human rights organizations. Second, the Carter Administration had imposed an aid embargo of Pakistan in 1978 due to the continuation of Pakistan's nuclear activities. Also, an enraged mob had burned down the US embassy in Islamabad in reaction to rumored American involvement in an attack on religious shrine in Saudi Arabia in November, 1979. Due to these factors, the relationships with the West and in particular with the US were reached at the lowest possible point.

internationally. By making alliance with the religious groups, Zia tried to implement the Sunni *Hanafi* law school as the basis for his *Islamization* programme as this school of thought was followed by the majority of the public.<sup>23</sup> This, in turn, provided him with enough political support from the public. Secondly, the Soviet Union's occupation of Afghanistan in 1979 initiated *Jihadi* activities in both Afghanistan and Pakistan under the auspices of Pakistani state (Khan, 2004). This made Zia as the key ally of the US. Since, the whole West, especially the US and the Arab countries were against the Soviet Union's occupation; so, it was much supportive for Zia to get international legitimacy.<sup>24</sup> In addition to providing international legitimacy, the Afghan war, also, enhanced the capability of the military ruler to attract increased foreign aid in the form of economic and military assistance. In the subsequent section, we provide a descriptive analysis of this type of rents.

#### ***2.3.4. Rents to the Military in Zia's Regime***

Two factors shape the rent-seeking behavior of military in Pakistan: first, it needs resources to maintain an internal system of patronage; second, it needs the political power to sustain and expand its business empire. To ensure these two objectives, Zia's regime took keen interest in shaping institutions to legalize and expand the military's share in the economy. Acemoglu et al. (2005) summarizes that political power, including both the *de jure* power

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<sup>23</sup> As stated earlier, Zia inscribed several laws into Pakistan's penal code to make them in accordance with those celebrated in Islamic *sharia*. Also, punishments in *Hudood Ordinance*, as seen by the *Ahmadi*, were aimed at targeting them.

<sup>24</sup> Zia's alliance with the religious groups made this possible for Zia to get international legitimacy, as it were these religious groups who provided and trained enough personnel for *Jihad* in Afghanistan aimed at defeating communism.

and the *de facto* power, shapes institutions.<sup>25</sup> The military, after the coup of Zia, had the *de jure* political power but in order to shape future's political institutions with a rent-expropriation view, they needed the *de facto* power. The military successfully choose religious ideology to achieve this objective. The rationale for using religion stems from two reasons. First, given the prominence of religion in Pakistan, the religious ideology could provide them with enough *de facto* power to pursue their institutional and economic interests. Second, religion in Pakistan homogenizes the society; and there is considerable evidence that for rent-seeking rulers, a homogenous polity is easier to control (Lipset, 1959; Moore, 1966).

The military business empire operates at various levels, ranging from direct profit-making activities to subsidiaries and individual businesses of the military personnel. For instance, organizations like National Logistic Cell (NLC), founded in August, 1978; and Frontier Works Organization (FWO), originated in 1966, are directly involved in profit-making activities. In addition, organizations like Army Welfare Trust (AWT), *Fauji* Foundation (FF), *Shaheen* Foundation (SF) and *Bahria* Foundation (BF) are subsidiaries that run around 100 independent projects with the primary intent of providing welfare to the components of Pakistan's military (Siddiqa, 2007). The activities of these foundations include heavy manufacturing industries such as cement, fertilizers and cereal production, insurance business, information technology, banking and education.<sup>26</sup> These activities

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<sup>25</sup> Acemoglu et al. (2005) clarifies that today's political institutions determine today's *de jure* political power which, in turn, determine today's economic institutions. Economic Institutions, thus created, have two effects on economic outcomes. First, they determine the nature of economic outcomes and also, they determine its distribution. In the same way, today's distribution of resources determine today's *de facto* political power, which determine future's political institutions.

<sup>26</sup> The details of military business activities are given in Siddiqa (2007).

have comparative advantage in obtaining public sector business contracts and securing industrial or financial inputs at subsidized rates. This is ensured by the role that the defence establishment plays in manipulating politics and economy in Pakistan. Second, the military's economic activities are not subject to any civil accountability, granting them a significant level of financial autonomy. These concessions, in turn, put these businesses ahead of their private sector competitors. However, these concessions and the associated comparative advantage can only be sustained or expanded if the military persisted with its political power.

In a rent-seeking society, the balance of power between the citizens and public officials is inordinately skewed in favor of public officials by virtue of their easy access to the state assets and their allocation and enforcement rights (Mbaku, 1997).<sup>27</sup> In other words, based on their *de jure* political power, they have the ability to expropriate state assets or create rents for future expropriation. In order to do so, they first attempt to gain or sustain their *allocation rights*, which is the formal or informal ability to distribute rents to themselves or to the other interest groups. Zia's institutional amendments were, partly, driven by this motive.<sup>28</sup> Besides legalizing the businesses of the military, the constitutional amendments were also associated with windfall rents. For instance, the *Islamization* measures created rents in the form of *Zakat*, *Ushr* and the income from shrines etc.

In addition, Pakistan has been one of the most aid receiver countries and military is clearly one of its significant beneficiaries. Pakistan has received around US\$73.14 billion in the form of Official Development Assistance (ODA) from 1960 to 2002

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<sup>27</sup> Mill (1848) has emphasized on this issue in details by comparing “the protection by the government and protection against the government”.

<sup>28</sup> For instance, Article 58/2-B was one of the institutional changes to enhance the allocation rights of the military.

(Anwar and Michaelowa, 2006). More than 72% of this amount comes from the bilateral sources and nearly half of this is provided by the US. Therefore, over the history of Pakistan, US clearly appear as the major contributor.<sup>29</sup> A critical feature of the US aid to Pakistan is that the military rulers and the civilian rulers differ considerably in terms of the US aid receipts. For instance, the trends in US aid, shown in figure 2.2, show that both the total aid and the military aid are higher in the three military regimes compared to the civilian ones. Table 2.2 in appendix, summarizing the history of the US aid to Pakistan by regime type, further reinforces this fact. For instance, out of \$58.5, including both military and economic assistance, provided to the country between 1958 and 2008, \$51.7 billion were given during thirty-four years of the military rule while only \$5.82 billion were provided to civilian regimes covering eighteen years. These values estimate, on average, the per annum aid of \$1.52 billion to military rulers compared to only \$0.34 billion to the civilian governments.<sup>30</sup>

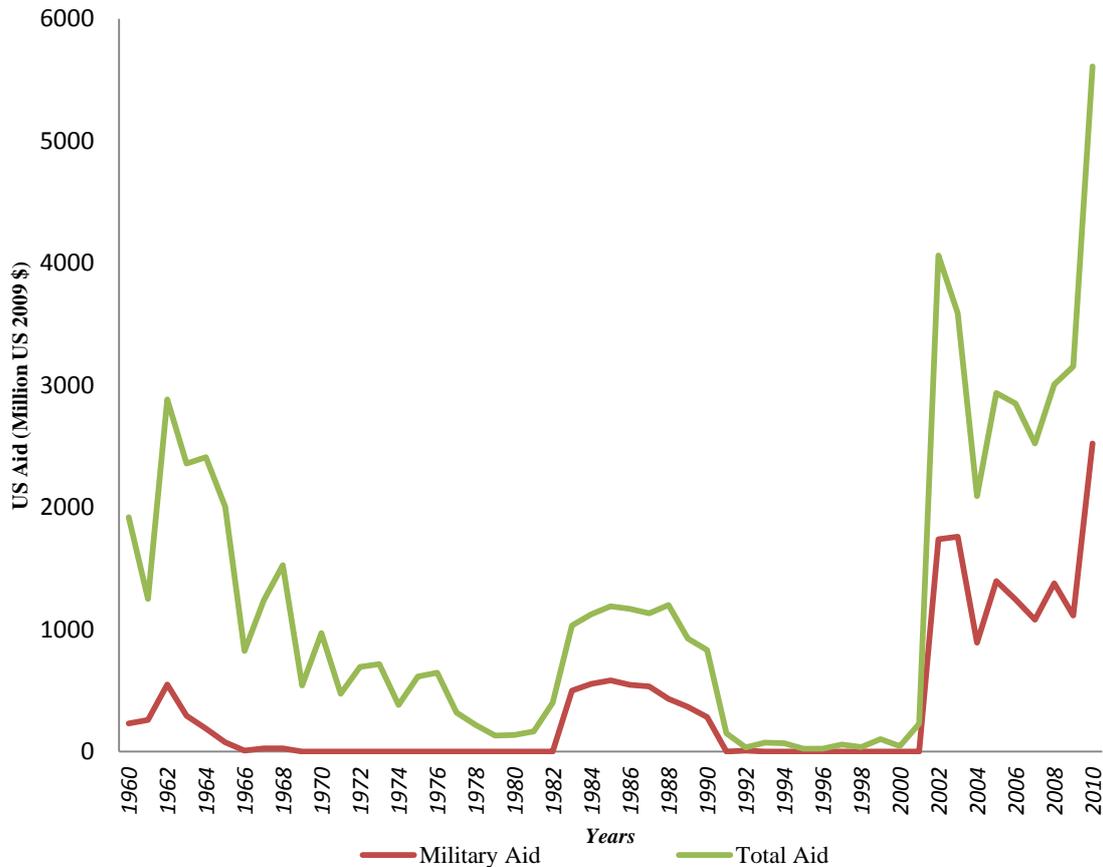
Yet another critical feature is that during the civilian governments, the military assistance is almost negligible. The table indicates less than a million of military assistance per annum during the Bhutto's regime (1972-1977). In the same way, the civilian rule of 1988-1999 is marked by \$65.77 million of military assistance per annum compared to \$286.7 million of its predecessors.

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<sup>29</sup> Pakistan started receiving economic aid from the United States in 1951. In the beginning, most of the economic aid consisted mainly of grants, but by 1955 Pakistan was firmly in the orbit of the United States receiving large amounts of grants, loans and military aid. By this time, Pakistan had become a key member of the American regional security and defense pacts – Southeast Asian Treaty Organization (SEATO) and Central Treaty Organization (CENTO). As part of its obligations, Pakistan allowed the United States a military base in the Western wing and the use of its civilian airfields for espionage flights. Since those times, a considerable amount of foreign aid is provided to Pakistan, including the generous grants for the wars against communism and terror.

<sup>30</sup> See table 2.2 and table 2.3 for the details of foreign aid that Pakistan has received throughout its history.

**Figure 2.2: History of the US Aid to Pakistan**



Source: US Overseas Grants and Loans Datat Base, Government of US (2011).

Note: 1960-1971(First Military Rule); 1977-1988 (Second Military Rule (Zia)); 1999-2008 (Third Military Rule)

At the time of Zia’s coup, the Carter administration had suspended all aid due to Pakistan’s development of a uranium enrichment facility. However, with the invasion of Afghanistan by the Soviet Union, the U.S. assistance again increased dramatically as Pakistan was the central staging ground for covert U.S. support to anti-Soviet forces in Afghanistan. To illustrate this point, the annual foreign aid to Pakistan during 1975-79 amounted to \$900 million; it increased to \$1.3 billion a year during 1981–85. In total, the United States provided more than \$5 billion in aid—\$3.2 billion in economic assistance and \$2.19 billion in military assistance—from 1980 until 1990. With the approval of a \$ 4.02 billion military and economic aid package in 1987, Pakistan

became the second largest recipient of American aid, after Israel. Focusing on its enhanced geo-strategic importance in the cold war, the US no longer seemed concerned about Pakistan's nuclear programme, lack of democracy, or the human rights violations of the military regime.

### ***2.3.5. Rents to the Religious Groups in Zia's Regime***

The military dictators in Pakistan have, always, collaborated with other privileged groups to pursue their political and economic interests. For instance, Ayub Khan collaborated with landed elites and industrialists to pursue his rent-seeking objectives. Similarly, Zia's achievement of his twin objectives was made possible by his partnership with religious circles. The relationship between Zia, religious groups and the US had two features: first, the religious groups were the major contributors to Afghan *Jihad*; second, the increased US aid was associated with the organization of *Jihad*. Zia incentivized the religious groups by making constitutional amendments to Islamize the country. This, in turn, raised the bargaining power of religious groups relative to other privileged groups.<sup>31</sup> The raise in their bargaining power, in turn, led the religious groups to initiate and conduct *Jihadi* activities whole heartedly. It was, in a sense, a rent-generating stage because the foreign aid, including both from US and from Arab countries, was associated with these activities.

In return for their services, the religious groups were provided with a larger set of incentives. For instance, a special

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<sup>31</sup> After the defeat of the religious political parties in the 1970 election, the religious groups were in disarray, but they had a clear goal-to maximize their power. To attain this they demanded the *Islamization* of laws and succeeded in securing more Islamic clauses in the 1973 constitution than in any previous constitution of Pakistan. In North's (1981) constitutional sense, it was a major victory, but in the parliaments and general power structure (North's (1981) operating rules), the religious groups remained on the periphery. The constitutional changes gave a sense of confidence, and legitimized their *de facto* power.

committee was set up to give policy recommendations with regard to improvements in the economic conditions of *madrasas* (religious schools). In light of those recommendations, the unconditional and direct government financial assistance was provided from the *Zakat* fund. To increase the employment prospects of *madrasa* graduates, the government instructed the University Grants Commission (UGC) to issue equivalency certificates to graduates of religious schools with the highest certificate from *Wafaq* recognized as Masters in Islamic studies.<sup>32</sup> In addition to these steps, *Ulema* of all sects were given representation in a rubber-stamp parliament (*Majlis-e-Shura*), in 1980.<sup>33</sup> These measures, in turn, boosted the importance of *madrasas* education. Consequently, five thousands mosque schools were approved in the new education policy, in 1979. In the same policy, the curriculum of the public schools was rewritten with an increased emphasis on *Jihad* and *Islamization*. International patrons supplied funds, arms, and religious literature that were used freely in Pakistani *madrasas*. In addition to foreign funds for *Jihad*, there was informal funding in the form of domestic donations. All of these measures had two effects on Pakistani society. First, they had a direct bearing on the payoffs of religious groups in Pakistan. Second, they resulted in the growth of *Jihadi* organizations in Pakistan.<sup>34</sup>

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<sup>32</sup> University Grants Commission (UGC) is a body which is responsible for the accreditation of educational institutions. Similarly, *Wafaq* is a private religious schools accreditation body.

<sup>33</sup> The state-controlled Islamic bodies, such as the Council of Islamic Ideology, suggested measures to proscribe parliamentary democracy as a "Western and therefore non-Islamic model". Consequently, the so-called *Majlis-e-Shura*, a replacement for parliament was followed.

<sup>34</sup> For instance most of the *Jihadi* organizations were established in the 1980s which is dominated by Zia's regime. Here are some organizations with their dates of birth: Harkat-ul-Jihad-i-Islami (1980); Harkat-ul-Mujahideen (1985); Sipah-e-Sahaba (1985); Lashkar-e-Taiba (1986); Hizb-ul-Mujahideen (1989). Jaish-e-Mohammad (2000) was a subsection of Harkat-ul-Mujahideen. See for more details Howenstein (2008).

## 2.4. Model

In order to draw some general propositions from our historical analysis, we provide a formal model in this section. We will apply our model to illustrate the forces which have driven the above historical narrative.

### 2.4.1. *Setting of the Game*

The society is decomposed into three groups: the military, the religious groups and the common people.<sup>35</sup> Assume that the groups have solved their within group problems of free riding and collective action so that they act like an agent. The initial shares of these groups in the economy are assumed to be given by the history. We denote these by  $x_m$ ,  $x_r$ , and  $x_c$  for the military, the religious groups and the common people respectively. As stated earlier, the then domestic as well as the international scenario had made Pakistan a rentier society. The situation is described into two-stages of rent-seeking activities. In the first stage, *i.e.* the rent-generating stage, the groups played their actions for rent creation. For instance, the military initiated the institutional change including both the *Islamization* programme and some other constitutional amendments. The religious circles steered the *Jihad* programme in Afghanistan. The common people played their best response by having compliance with the institutional change as well as the *Jihadi* activities. This action profile generated rents from two sources. First, the *Islamization* program resulted in the increased revenue from *Zakat* and *Usher*. Second, the *Jihadi*

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<sup>35</sup> For simplicity, the other groups like bureaucracy, industrialists and landed elites are assumed to be passive in the *Islamization* process. Actually, it was the case because most of the active groups in Zia's era were the military itself and the religious groups.

activities were financed by the West and Arab countries that resulted in the exalted amount of foreign aid.

In the second stage, namely the rent distribution stage, the groups played their actions to enhance their shares in the rents generated in the first stage. For instance, each group was involved in lobbying or creating avenues for spending these additional rents. The religious groups were successful in getting *zakat* funds as a government support for *madrasas*. Similarly, the military enhanced its share of rents by the increased military assistance as percentage of the total aid provided by the US. For simplicity, we assume that the groups made costly rent-seeking investments in this stage.

Assume that the revenue generating process is given by the following cobb-Douglas technology:

$$Y = R \prod_i a_i^{\alpha \beta_i} \quad i = m, r, c \quad 1.$$

$\beta_i \in [0, 1]$  is the productivity parameter of group  $i$ , such that  $\sum \beta_i = 1$ .  $\alpha \in (0, 1)$  is a parameter which is taken here for simplifying the onward calculations.  $a_i$  denote the action of group  $i$ , *i.e.* institutional change for the military, *Jihad* for the religious groups, and Compliance for the common people. The actions of the military and the religious groups, on the one hand, illustrated the rent-creating motives of the two groups and on the other hand, they reflected the donors' agenda because most of the aid at that time was associated with *Jihadi* activities in the region.  $R$  is taken as the general economic framework in the country. The subscripts  $m$ ,  $r$ , and  $c$  denote the military, the religious groups and the common people respectively.

In order to generate the revenue,  $Y$ , each party also incurs costs which we describe as the production costs. The costs are just equal to the amount of action times its price. For instance, the costs to military included the expenses which were associated with the

*Islamization* amendments, the increased financial assistance to *madrasas*, and the training of *Jihadis*. Similarly, the costs to religious groups represented the opportunity costs involved in taking part in *Jihad* rather than in other productive activities. In addition to the opportunity costs, they also experienced physical costs like deaths and injuries. Finally, the costs to the common people comprised informal donations to *Jihadi* activities and other costs associated mainly with the high influx of Afghan refugees. For instance, one such cost was associated with the land of the native population which was taken by the government for the settlement of Afghan refugees.<sup>36</sup>

In the distribution contest, as stated earlier, the groups invest resources to enhance their ex-post shares. For group  $i$ , we denote these activities by  $q_i$ ; and its total cost is assumed to be given by the following convex function.

$$D_i(q_i) = \frac{Y}{\delta_i} q_i^2 \quad i = m, r, c \quad 2.$$

$$\frac{\partial D_i}{\partial q_i} > 0; \quad \frac{\partial D_i^2}{\partial^2 q_i} > 0; \quad \frac{\partial D_i}{\partial \delta_i} < 0; \quad \frac{\partial D_i^2}{\partial^2 \delta_i} > 0 \quad \text{and} \quad \frac{\partial D_i}{\partial Y} > 0$$

Where  $D_i$  is the total cost for group,  $i$ , taking part in the rent-seeking contest. This is a type of transaction cost which reflects measurement costs, information costs, and enforcement costs involved in “defining or distributing, protecting and enforcing property rights” (North, 1990:28).  $\delta_i > 0$  is the group specific parameter which can be thought of as the ‘group’s bargaining power’. The total cost of investment in the distribution contest is decreasing in this specific parameter. However, the cost advantage is diminishing for successive increases in  $\delta_i$ . Also, the rent-seeking cost,  $D_i$ , is strictly increasing in the amount of activities,  $q_i$ . Finally,

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<sup>36</sup> Actually, no payment was made for the land taken by either the Government of Pakistan or the United High Commissioner for Refugees (UNHCR).

the amount of rents also has a positive effect on this cost. This can be justified by the argument that generally, the rise in the amount of rents intensifies the distribution contest.

Given the initial shares of groups and their rent-seeking investment, we define the ex-post share of group  $i$ ,  $s_i$ , as the following:

$$s_i = x_i + q_i - \frac{\sum_{j \neq i} q_j}{2} \quad i = m, r, c \quad 3.$$

$\sum x_i = \sum s_i = 1$ . Thus, the ex-post share of group  $i$  is increasing in its action,  $q_i$ , but decreasing in the action of other groups. Given equations 1-3, the total value or payoff of group  $i$ , is summarized in the following function.

$$U_i = s_i Y - p_i a_i - \frac{Y}{\delta_i} q_i^2 \quad i = m, r, c \quad 4.$$

$p_i$  is the physical or subjective price of the action of group  $i$ ,  $a_i$ , in the rents generating process. Thus, the group's objective is to maximize its profits, which equals its ex-post share in revenue net of the production cost and the rent-seeking cost.

### 2.4.2. Equilibrium

This is a game with perfect information which can be solved by backward induction. The control variables for group  $i$  are  $a_i$  and  $q_i$  in the production stage and in the distribution stage respectively. Given the information, we define the sub-game perfect equilibrium for this game.

**Definition 2:** *The sub-game perfect equilibrium is defined as “the strategy profile:*

$$\sigma^* = (\sigma_m^*, \sigma_r^*, \sigma_c^*)$$

such that the strategies of the military, the religious groups and the common people are best responses to each other.

In the sub-game of distribution, the groups choose their investment in affecting the ex-post shares. Thus, the first order condition with respect to  $q_i$  is summarized in equations 5.<sup>37</sup>

$$\frac{\partial U_i}{\partial q_i} = Y - 2q_i \frac{Y}{\delta_i} = 0 \Rightarrow q_i^* = \frac{\delta_i}{2} \quad i = m, r, c \quad 5.$$

$$\frac{\partial q_i^*}{\partial \delta_i} > 0; \quad \frac{\partial^2 q_i^*}{\partial \delta_i^2} = 0$$

It is evident that group  $i$ 's investment in the distribution contest,  $q_i^*$ , is linearly increasing in its bargaining power. This instance is the reflection of the case in societies, where the groups with durable *de facto* or *de jure* power have the greater ability to maintain or enhance their power further. Combining equations 3 and 5 provide us with the ex-post shares in terms of the bargaining powers of the parties.

$$s_i^* = x_i + \frac{\delta_i}{2} - \frac{\sum_{j \neq i} \delta_j}{4} \quad i = m, r, c \quad 6.$$

It is evident that the ex-post share of player,  $i$ , is increasing in its bargaining power while decreasing in those of the other players. Generally, the evolution of shares in societies is driven mainly by the evolution of institutions and thus, a change in those is associated with institutional change.<sup>38</sup> The institutional change, in turn, is shaped by either collaborative process or corrosive process.

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<sup>37</sup> The values with the star are the equilibrium values of the endogenous variables.

<sup>38</sup> For instance, Acemoglu and Robinson (2012) argue that the transition from extractive institutions to inclusive institutions is associated with the broad distribution of power and resources in a society. Similarly, to North et al. (2009), the transition from the natural state to the open access order results in the increased access to justice to the wide cross-section of the society.

In the collaborative process like lobbying or voting, the groups use their political power in a peaceful way. For instance, the state actors may use their *de jure* power to make new legislation that is exclusively benefiting them. Similarly, the private interest groups may get special interest legislative success by campaign contribution or voting. In the corrosive process, the institutional change encompassing the changes in shares is driven by accidents like revolutions or wars, etc.<sup>39</sup> In the collaborative process, both components of the political power, *i.e. de facto* or *de jure* may be employed. But in the corrosive process, the *de facto* power is frequently used.<sup>40</sup> Thus, the bargaining power, summarized in the *de jure* and *de facto* components of power, determine the shares of different groups in a society.

Using the optimization results of the second stage, the ex-post value function may be written as:

$$U_i = (s_i^* - \frac{\delta_i}{4}) R \prod_i a_i^{\alpha\beta_i} - p_i a_i \quad i = m, r, c \quad 7.$$

In this stage, the players choose their actions in the rents generating process. The first order conditions are given as:

$$\frac{\partial U_i}{\partial a_i} = (s_i^* - \frac{\delta_i}{4}) \alpha \beta_i a_i^{-1} R \prod_i a_i^{\alpha\beta_i} - p_i = 0 \quad i = m, r, c \quad 8.$$

Exploring these conditions combined with the results of the second stage, we find the values of the endogenous variables like  $a_i$  and  $Y$ .

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<sup>39</sup> Acemoglu and Robinson (2012) proclaim that the ‘critical junctures’ have important effects on shaping institutions. For instance, the authors exemplify the European colonization with a critical juncture which led to divergent paths of institutional development in New Europe (Australia, New Zealand, Canada, and United States) and Africa.

<sup>40</sup> For instance, the landed elites or industrialists may use their resources for special interest institutional change. Similarly, ethnic groups or religious groups may use their followers for special interest institutional change. In the collaborative process, the use of these resources takes the shapes of lobbying, voting or campaign contribution while in contrast, in the corrosive process, it takes the shapes of violent use.

$$Y^* = R^{1-\alpha} \alpha^{1-\alpha} \prod_i \left( \frac{\beta_i (x_i + \frac{\delta_i}{4} - \frac{\delta_j}{4} - \frac{\delta_k}{4})}{p_i} \right)^{\frac{\alpha\beta_i}{1-\alpha}} = R^{1-\alpha} \alpha^{1-\alpha} \prod_i (E_i)^{\frac{\alpha\beta_i}{1-\alpha}} \quad i = m, r, c \quad 9.$$

$$a_i^* = \alpha \left( \frac{\beta_i (s_i^* - \frac{\delta_i}{4})}{p_i} \right) Y^* \quad i = m, r, c \quad 10.$$

The results of our analysis are summarized in the following proposition.

**Proposition 2:**

- a.** For a given set of parameter values, there is a unique sub-game perfect equilibrium in the game described above:

$$(\sigma^*; Y^*) = ((q_i^*, s_i^*, a_i^* : i = m, r, c); Y^*)$$

such that the values of the endogenous variables are given by the equations 5, 6, 9, and 10.

- b.** Group  $i$ 's action,  $a_i$ , in the revenue generating process is increasing in its bargaining power,  $\delta_i$  if

$$\frac{\beta_i(1-\alpha-\alpha\beta_i)}{p_i} E_i^{-1} > \left( \frac{\alpha\beta_j^2}{p_j} E_j^{-1} + \frac{\alpha\beta_k^2}{p_k} E_k^{-1} \right) \quad i, j, k = (m, r, c; r, m, c; c, m, r)$$

- c.** Similarly, group  $i$ 's action,  $a_i$ , is decreasing in the bargaining power of player  $j$  if

$$\frac{\alpha\beta_j^2}{p_j} E_j^{-1} < \left( \frac{\beta_i(1-\alpha-\alpha\beta_i)}{p_i} E_i^{-1} + \frac{\alpha\beta_k^2}{p_k} E_k^{-1} \right) \quad i, j, k = (m, r, c; r, m, c; c, m, r)$$

- d.** Group  $i$ 's action,  $a_i$ , is increasing in its productivity parameter,  $\beta_i$ , and its ex ante share,  $x_i$ , while decreasing in the price of the action,  $p_i$ .

**Proof:** The proof of the proposition is given in the appendix.

### **2.4.3. Discussion**

When the bargaining power of a particular group increases; its investment in the distribution contest also increases. Consequently, its ex-post share rises while the ex-post shares of other groups fall. This creates two effects on the incentives of the players who work in the generating process. The first effect comes from the incentive of the player whose bargaining power has increased, which is positive. The intuition is that the greater ex-post share motivates the player to work harder or more in the generating stage. Second, the reduction in the ex-post shares of the other players creates disincentives on the part of the other players. So, the other players reduce their supply to the generating process. Thus, the rise in the bargaining power of a group raises its action only if its incentive in the generating process net of the disincentives to other players is positive. The effect on revenue works through the sum of the effects on the players' actions. This result is very useful for explaining the evolution of institutions in terms of the bargaining power of groups. For instance, in societies where the relative bargaining power rest in few hands, the privileged groups have the greater ability to shape the rules in their favour. In contrast, in homogenous societies the structuring and enforcing of such rules become difficult.

The events in the history of Pakistan, especially the three conflicts with India (1948, 1965 and 1971) has contributed to a higher level of institutional dependence of the state on military (Bhave and Kingston, 2010). This, in turn, has given a prominent *de jure* power to military in Pakistan. Thus, the higher bargaining power in the distribution contest makes the military's incentives larger, making for its higher involvement in the evolution of formal institutions in Pakistan. It was the military's bargaining power that led to the achievement of the famous Article 58-2(B) in the 8<sup>th</sup>

amendment of the constitution. The Article gave unprecedented power to the president, who was the military chief at that time. Similarly, the higher bargaining power of the military relative to the civil bureaucracy resulted in the increased induction of the military officials in civil bureaucracy. It was Zia's regime that institutionalized this practice by establishing quotas that reserved 10% of the vacancies in the civilian bureaucracy from former military officers.

In the same way, religion has been a permanent source of *de facto* power in Pakistan. In the beginning, religion was extensively used in the establishment of Pakistan.<sup>41</sup> Onwards, it has been a major source of mitigating the regional and ethnic differences. Zia's *Islamization* policy transformed this *de facto* power into *de jure* power. This, in turn, provided the religious groups with a higher bargaining power in the distribution. For instance, their achievements of the *zakat* funds and the equivalency certificates to the graduates of *madrasas* boosted their power further. This led to the substantial extension of the *madrasas* education and *Jihadi* activities in the informal sector. In particular, the returns to these activities were quite higher in the form of huge informal donations and the extended formal support from the military government.

A rise in a player's productivity parameter or his ex-ante share increases his incentive to work harder by raising his ex-post share. These effects are explained by the law of supply. As is indicated in table 2.3, the border conflicts with India have given the military a permanent higher share in Pakistani society. For instance, around 50% of the federal budget had been allocated to the military from the beginning until the Zia's regime. Thus, the military has been characterized by its higher shares in the state generated revenue or rents, in this case. Second, religion has been a

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<sup>41</sup> For instance, it was the success of two-nation theory that led ultimately to the partition of the All-Indian-Subcontinent into Pakistan and India in 1947.

low cost instrument available to the military for achieving its domestic as well as its international objectives. Thus, the productivity and share of the military were higher in organizing the religious groups in the *Islamization* process and the subsequent *Jihad* in Afghanistan. Similarly, the cost of a player's activity has a negative bearing on the amount supplied. The explanation is the simple interpretation given by the law of demand, *i.e.* a raise in the price of input decreases the demand for input. For instance, if the costs of the military in the *Islamization* policy and *Jihad* in Afghanistan were higher, it would have not taken those amendments in the constitution.

#### **2.4.4. Total Welfare and Rent-Seeking**

The rent-seeking activities results in the waste of productive resources (Tullock, 1967; Krueger, 1974; Posner, 1975). In order to see the impact of distribution contest on the total welfare, we write total ex-post welfare,  $W$ , in terms of revenue, the total production cost, and the total rent-seeking cost.

$$W^* = Y^* - \left( \sum_i p_i a_i^* \right) - \left( \frac{\sum \delta_i}{4} \right) Y^* \quad i = m, r, c \quad 11.$$

The first bracket represents the total production cost while the second bracket reflects the total rent-seeking cost as share of the revenue. After some manipulation the welfare function can be written as

$$W^* = \left( 1 - \alpha \sum_i \beta_i x_i - \sum_i \left( 1 + \alpha \beta_i - \alpha \sum_{j \neq i} \beta_j \right) \frac{\delta_i}{4} \right) Y^* \quad i = m, r, c \quad 11.$$

The manipulated welfare function represents the two components of costs as shares of revenue. As is evident, the total welfare is maximum when  $\sum \delta_i = 0$ . This implies that the transaction costs for all players are infinite; consequently, the investment in the

distribution contest is zero. The players are fully committed to their ex-ante shares that are given by the history. The players' actions are solely determined by their productivity parameters, their ex-ante shares, and the prices of their actions. Similarly, when  $\delta_m = \delta_r = \delta_c = \delta$  (homogenous society), then the ex-post shares are unaffected by the investment in the distribution contest. So, it is irrational to invest in such a contest. If there is any such contest, it would be equivalent to throwing part of your payoffs into the sea for nothing. So, the symmetry of the bargaining powers combined with the assumption of rationality ensures the avoidance of the distribution contest.

The assertion of infinite transaction costs to all interest groups is clearly missing in Pakistan. Given the institutionalized bargaining power of the military, it has a monopoly in violence. It can coercively alter the political and economic institutions of the state. Consequently, their transaction cost in rent-seeking is minimal relative to other interest groups. Similar is the case with the religious groups whose relative costs in the distribution contest are lower. Furthermore, in terms of the bargaining power, the Pakistani society has never been symmetric throughout its history. Consequently, there has always been a distribution contest existing in Pakistan, making efficient rules infeasible.

## **2.5. Conclusion**

Institutional change is an encompassing issue, covering a variety of aspects. The Efficiency and the ideological perspectives are nevertheless important, but the social conflict view takes the most promising attention. History has provided us with enough evidence that institutions emerge or change in the light of the social interactions of individuals or groups. Thus, the structured institutions reflect the intent of the interacting parties. Second, they

produce collective benefits, named as the ‘gains from coordination’. In other words, they reduce transaction costs by regulating behavior or by motivating the purposeful agents to act in a manner perpetuating the structure provided by the prevailing subset of them. Third, the parties involved in such strategic interactions are characterized by the asymmetries in their bargaining power. These three features together imply that institutions fundamentally determine the distribution of political and economic rights in any society. This, in turn, leads us to the distributive considerations of institutional change. The main argument here is that there is generally more than one way to structure social institutions in order to produce the gains from cooperation or, in other words, to reduce transaction costs. The distinguishing features of these different institutional forms are their distributional consequences. Based on this theoretical framework, we make an elaborative analysis of Zia’s *Islamization* policy in Pakistan. In particular, we are interested in showing that the rent-seeking behavior of different interest groups results in institutional change as an equilibrium outcome.

We have argued that, given their *de jure* and *de facto* power, the military and the religious circles respectively are two of the privileged groups in Pakistani society. Their greater bargaining power during Zia’s regime led to change formal institutions in their favour. The military was successful in legalizing its share in the economy of Pakistan by exploiting religious ideology. Similarly, the religious groups were efficacious in getting legislative success in terms of the *Islamization* policy which, in turn, raised their bargaining power further. The institutional change was associated with greater amount of rents to both of them. In other words, it was the collaboration of these two groups that resulted in rent creation in the form of increased foreign aid and donations, associated

mainly with Afghan war. Thus, the rent-seeking objectives of these two groups resulted in the institutional change in Pakistan.

Although, this historical analysis provides a strong case for the social conflict view of institutions, we believe that the evolution of institutions is highly context-specific. Specifically, every society evolves in its own way. In order to understand change, research should go beyond broad generalizations to a specific understanding of the cultural heritage of the societies. Thus, more comparative institutional analysis is needed to further advance our knowledge of how institutional structure is evolved in different cultures and societies.

## Appendix 2

**Table 2.2: Per Annum US Aid to Pakistan by Regime Type (Constant 2009, Million US \$)**

Period	Regime Type	Total Economic Assistance	Economic Assistance Via USAID	Military Aid	Coalition Support Fund	Total US Aid
1958-1971	Military	1363.154	829.3957	182.8479	0	1546.001
1972-1977	Civilian	561.2983	290.1383	0.955	0	562.253
<b>1977-1988</b>	<b>Military</b>	<b>431.5709</b>	<b>280.9973</b>	<b>286.7427</b>	<b>0</b>	<b>718.314</b>
1988-1999	Civilian	156.655	100.407	65.77	0	222.425
1999-2008	Military	458.022	310.683	949.274	1052.581	2459.877

**Source:** US Overseas and Loans Database, Government of US.

**Note:** The bold regime corresponds to the Zia's Regime (July, 1977 to August, 1988).

**Table 2.3: History of Pakistan's Economic and Military Indicators by Regime Type**

Year	Regime Type	GDP (constant 2000 Billion US\$)	GDP per Capita (constant 2000 US\$)	GDP per Capita Growth (annual %)	Military Expenditure (% of Constant GDP 2000)	Military Spending (% of Government Expenditure)	Arms Imports (constant 1990 Million US\$)	Net ODA and Official Aid received (current Million US\$)	Public Education Spending (% of GDP)
<b>1958-1971</b>	Military	12.73	237.16	3.91	2.96	55.05	237.75	399.24	1.65
<b>1972-1977</b>	Civilian	19.43	291.62	1.16	2.88	49.48	352.00	540.00	2.01
<b>1977-1988</b>	<b>Military</b>	<b>31.66</b>	<b>361.34</b>	<b>3.03</b>	<b>4.90</b>	<b>39.22</b>	<b>605.00</b>	<b>799.28</b>	<b>2.28</b>
<b>1988-1999</b>	Civilian	58.90	477.13	1.57	5.23	30.82	662.00	1079.96	2.32
<b>1999-2008</b>	Military	89.39	570.78	2.80	4.36	24.33	467.89	1646.43	2.34

**Source:** World Development Indicators, The World Bank

**Note:** Each value is the per year average for the given period. The bold regime corresponds to the Zia's Regime (July, 1977 to August, 1988).

## Proof of Proposition 2 Step by Step

### a. Existence

$$U_i = (s_i^* - \frac{\delta_i}{4}) R \prod_i a_i^{\alpha\beta_i} - p_i a_i \quad i = m, r, c \quad 6.$$

Maximizing with respect to the choice variables of the three groups, we get the following first order conditions.

$$\frac{\partial U_m}{\partial a_m} = (s_m^* - \frac{\delta_m}{4}) \alpha \beta_m R a_m^{\alpha\beta_m - 1} a_r^{\alpha\beta_r} a_c^{\alpha\beta_c} - p_m = 0 \quad A1.$$

$$\frac{\partial U_r}{\partial a_r} = (s_r^* - \frac{\delta_r}{4}) \alpha \beta_r R a_m^{\alpha\beta_m} a_r^{\alpha\beta_r - 1} a_c^{\alpha\beta_c} - p_r = 0 \quad A2.$$

$$\frac{\partial U_c}{\partial a_c} = (s_c^* - \frac{\delta_c}{4}) \alpha \beta_c R a_m^{\alpha\beta_m} a_r^{\alpha\beta_r} a_c^{\alpha\beta_c - 1} - p_c = 0 \quad A3.$$

So, we have four equations in four unknowns, *i.e.* three first order conditions and the revenue function. The unknowns are the actions of the players and the revenue. Manipulating the first order conditions, we got the following relationships between the actions of the three groups.

$$a_r = \frac{s_r^* - \frac{\delta_r}{4}}{s_m^* - \frac{\delta_m}{4}} \frac{\beta_r}{\beta_m} \frac{p_m}{p_r} a_m \quad A4.$$

$$a_c = \frac{s_c^* - \frac{\delta_c}{4}}{s_m^* - \frac{\delta_m}{4}} \frac{\beta_c}{\beta_m} \frac{p_m}{p_c} a_m \quad A5.$$

Using *A4-A5* in the first order conditions we would get the following values of the players' actions:

$$a_m^* = \left( \frac{\beta_m (s_m^* - \frac{\delta_m}{4})}{p_m} \right)^{\frac{1-\alpha(1-\beta_m)}{1-\alpha}} (\alpha R)^{\frac{1}{1-\alpha}} \left( \frac{\beta_r (s_r^* - \frac{\delta_r}{4})}{p_r} \right)^{\frac{\alpha\beta_r}{1-\alpha}} \left( \frac{\beta_c (s_c^* - \frac{\delta_c}{4})}{p_c} \right)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A6.$$

$$a_r^* = \left( \frac{\beta_r(s_r^* - \frac{\delta_r}{4})}{p_r} \right)^{\frac{1-\alpha(1-\beta_r)}{1-\alpha}} (\alpha R)^{\frac{1}{1-\alpha}} \left( \frac{\beta_m(s_m^* - \frac{\delta_m}{4})}{p_m} \right)^{\frac{\alpha\beta_m}{1-\alpha}} \left( \frac{\beta_c(s_c^* - \frac{\delta_c}{4})}{p_c} \right)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A7.$$

$$a_c^* = \left( \frac{\beta_c(s_c^* - \frac{\delta_c}{4})}{p_c} \right)^{\frac{1-\alpha(1-\beta_c)}{1-\alpha}} (\alpha R)^{\frac{1}{1-\alpha}} \left( \frac{\beta_r(s_r^* - \frac{\delta_r}{4})}{p_r} \right)^{\frac{\alpha\beta_r}{1-\alpha}} \left( \frac{\beta_m(s_m^* - \frac{\delta_m}{4})}{p_m} \right)^{\frac{\alpha\beta_m}{1-\alpha}} \quad A8.$$

Putting *A6-A8* into the revenue generating technology and using the assumption that  $\sum\beta_i=1$ , we find the revenue function in terms of the ex-post shares and the bargaining powers of the groups.

$$Y^* = \alpha^{\frac{\alpha}{1-\alpha}} R^{\frac{1}{1-\alpha}} \left( \frac{\beta_m(s_m^* - \frac{\delta_m}{4})}{p_m} \right)^{\frac{\alpha\beta_m}{1-\alpha}} \left( \frac{\beta_r(s_r^* - \frac{\delta_r}{4})}{p_r} \right)^{\frac{\alpha\beta_r}{1-\alpha}} \left( \frac{\beta_c(s_c^* - \frac{\delta_c}{4})}{p_c} \right)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A9.$$

Similarly, the action functions of the groups can be written in terms of total revenue, their ex-post shares and their bargaining powers.

$$a_m^* = \alpha \left( \frac{\beta_m(s_m^* - \frac{\delta_m}{4})}{p_m} \right) Y^* \quad A10.$$

$$a_r^* = \alpha \left( \frac{\beta_r(s_r^* - \frac{\delta_r}{4})}{p_r} \right) Y^* \quad A11.$$

$$a_c^* = \alpha \left( \frac{\beta_c(s_c^* - \frac{\delta_c}{4})}{p_c} \right) Y^* \quad A12.$$

Also, the optimization in the distribution contest, *i.e.* the game in the second stage, gives the following values of the actual investments or the amount of activities in the distribution contest.

$$q_m^* = \frac{\delta_m}{2} \quad q_r^* = \frac{\delta_r}{2} \quad q_c^* = \frac{\delta_c}{2} \quad A13.$$

Using A13 in the ex-post share function, given by equation 3, we find the following ex-post shares in reduced form

$$s_m^* = x_m + \frac{\delta_m}{2} - \frac{\delta_r}{4} - \frac{\delta_c}{4} \quad A14.$$

$$s_r^* = x_r + \frac{\delta_r}{2} - \frac{\delta_m}{4} - \frac{\delta_c}{4} \quad A15.$$

$$s_c^* = x_c + \frac{\delta_c}{2} - \frac{\delta_r}{4} - \frac{\delta_m}{4} \quad A16.$$

Placing *A14-A16* into the revenue function, we get the revenue as function of the exogenous parameters.

$$Y^* = R^{1-\alpha} \alpha^{1-\alpha} \left( \frac{\beta_m(x_m + \frac{\delta_m}{4} - \frac{\delta_r}{4} - \frac{\delta_c}{4})}{p_m} \right)^{\frac{\alpha\beta_m}{1-\alpha}} \left( \frac{\beta_r(x_r + \frac{\delta_r}{4} - \frac{\delta_m}{4} - \frac{\delta_c}{4})}{p_r} \right)^{\frac{\alpha\beta_r}{1-\alpha}} \left( \frac{\beta_c(x_c + \frac{\delta_c}{4} - \frac{\delta_m}{4} - \frac{\delta_r}{4})}{p_c} \right)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A17.$$

Finally using *A17* in the response function (*A10-A12*) of the players we will get the equilibrium action profile in the rent-generating stage.

$$a_m^* = (\alpha R)^{\frac{1}{1-\alpha}} \left( \frac{\beta_m(x_m + \frac{\delta_m}{4} - \frac{\delta_r}{4} - \frac{\delta_c}{4})}{p_m} \right)^{\frac{1-\alpha+\alpha\beta_m}{1-\alpha}} \left( \frac{\beta_r(x_r + \frac{\delta_r}{4} - \frac{\delta_m}{4} - \frac{\delta_c}{4})}{p_r} \right)^{\frac{\alpha\beta_r}{1-\alpha}} \left( \frac{\beta_c(x_c + \frac{\delta_c}{4} - \frac{\delta_m}{4} - \frac{\delta_r}{4})}{p_c} \right)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A18.$$

$$a_r^* = (\alpha R)^{\frac{1}{1-\alpha}} \left( \frac{\beta_r(x_r + \frac{\delta_r}{4} - \frac{\delta_m}{4} - \frac{\delta_c}{4})}{p_r} \right)^{\frac{1-\alpha+\alpha\beta_r}{1-\alpha}} \left( \frac{\beta_m(x_m + \frac{\delta_m}{4} - \frac{\delta_r}{4} - \frac{\delta_c}{4})}{p_m} \right)^{\frac{\alpha\beta_m}{1-\alpha}} \left( \frac{\beta_c(x_c + \frac{\delta_c}{4} - \frac{\delta_m}{4} - \frac{\delta_r}{4})}{p_c} \right)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A19.$$

$$a_c^* = (\alpha R)^{\frac{1}{1-\alpha}} \left( \frac{\beta_c(x_c + \frac{\delta_c}{4} \frac{\delta_r}{4} \frac{\delta_m}{4})}{p_m} \right)^{\frac{1-\alpha+\alpha\beta_c}{1-\alpha}} \left( \frac{\beta_m(x_m + \frac{\delta_m}{4} \frac{\delta_r}{4} \frac{\delta_c}{4})}{p_m} \right)^{\frac{\alpha\beta_m}{1-\alpha}} \left( \frac{\beta_r(x_r + \frac{\delta_r}{4} \frac{\delta_m}{4} \frac{\delta_c}{4})}{p_r} \right)^{\frac{\alpha\beta_r}{1-\alpha}} \quad A20.$$

**b.** We do comparative statics with respect to the parameters of the military. For other players, they can be done in the same way. In order to do comparative statics, let's assume:

$$E_m = \left( \frac{\beta_m(x_m + \frac{\delta_m}{4} \frac{\delta_r}{4} \frac{\delta_c}{4})}{p_m} \right); \quad E_r = \left( \frac{\beta_r(x_r + \frac{\delta_r}{4} \frac{\delta_m}{4} \frac{\delta_c}{4})}{p_r} \right); \quad E_c = \left( \frac{\beta_c(x_c + \frac{\delta_c}{4} \frac{\delta_m}{4} \frac{\delta_r}{4})}{p_c} \right) \quad A21.$$

$$a_m^* = (\alpha R)^{\frac{1}{1-\alpha}} (E_m)^{\frac{1-\alpha+\alpha\beta_m}{1-\alpha}} (E_r)^{\frac{\alpha\beta_r}{1-\alpha}} (E_c)^{\frac{\alpha\beta_c}{1-\alpha}} \quad A18.$$

$$\frac{\partial a_m^*}{\partial \delta_m} = \frac{1}{4(1-\alpha)} \left( \frac{\beta_m(1-\alpha+\alpha\beta_m)}{p_m} E_m^{-1} - \frac{\alpha\beta_r^2}{p_r} E_r^{-1} - \frac{\alpha\beta_c^2}{p_c} E_c^{-1} \right) a_m^* \quad A22.$$

This implies that an increase in the bargaining power of a group would increase its supply to the generating process only if its incentives net of the disincentives of the other players are positive. This assertion is equivalent to the following inequality:

$$\frac{\partial a_m^*}{\partial \delta_m} > 0 \quad \text{iff} \quad \frac{\beta_m(1-\alpha+\alpha\beta_m)}{p_m} E_m^{-1} > \left( \frac{\alpha\beta_r^2}{p_r} E_r^{-1} - \frac{\alpha\beta_c^2}{p_c} E_c^{-1} \right)$$

**c.** Similarly, the comparative statics with respect to the bargaining power of other players can be analyzed.

$$\frac{\partial a_m^*}{\partial \delta_r} = \frac{1}{4(1-\alpha)} \left( \frac{\alpha\beta_r^2}{p_r} E_r^{-1} - \frac{\beta_m(1-\alpha+\alpha\beta_m)}{p_m} E_m^{-1} - \frac{\alpha\beta_c^2}{p_c} E_c^{-1} \right) a_m^* \quad A23.$$

Thus, a rise in the bargaining power of a player  $j$  can decrease the supply of player  $i$  to the production process if the disincentives to player  $i$  combined with the disincentives to other players are larger than the incentives to player  $j$ . Again this assertion implies that:

$$\frac{\partial a_m^*}{\partial \delta_r} < 0 \quad \text{iff} \quad \frac{\alpha \beta_r^2}{p_r} E_r^{-1} < \left( \frac{\beta_m (1 - \alpha + \alpha \beta_m)}{p_m} E_m^{-1} + \frac{\alpha \beta_c^2}{p_c} E_c^{-1} \right)$$

**d.** The proof is obvious from the partial derivatives with respect to the productivity parameter, the ex-ante share, and the price of action.

$$\frac{\partial a_m^*}{\partial \beta_m} = \left( \frac{\alpha \ln(E_m)}{1 - \alpha} + \frac{1 - \alpha + \alpha \beta_m}{(1 - \alpha) E_m} \frac{x_m + \frac{1}{4}(\delta_m - \delta_r - \delta_c)}{p_m} \right) a_m^* > 0 \quad \text{A24.}$$

$$\frac{\partial a_m^*}{\partial x_m} = \left( \frac{\beta_m (1 - \alpha + \alpha \beta_m)}{p_m (1 - \alpha) E_m} \right) a_m^* > 0 \quad \text{A25.}$$

Similarly, the partial derivative with respect to the prices is negative:

$$\frac{\partial a_m^*}{\partial p_m} = - \left( \frac{\beta_m (x_m + \frac{1}{4}(\delta_m - \delta_r - \delta_c)) (1 - \alpha + \alpha \beta_m)}{p_m^2 (1 - \alpha) E_m} \right) a_m^* < 0 \quad \text{A26.}$$

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## **Chapter 3**

# **Dictatorships, Patronage and Public Good Provision**

### **Abstract**

Dictatorship has been one of the most persistent regime types in history. Different dictators have applied different strategies for obtaining political support in different societies. We discuss and empirically estimate the hypothesis that states that dictators rely more on military for political support instead of relying on the wide cross-section of society. As a result, they are spending more on military rather than on the provision of public services. Our results, based on the data from cross-section of the countries, confirm this hypothesis. We use military spending as an indicator of the patronage to military and the secondary school enrollment as an indicator of the provision of public goods. In two separate sets of regressions, we conclude that dictatorship has a significant negative effect on the secondary school enrollment rate and a significant positive effect on military expenditure as percentage of GDP. These effects, in turn, might have caused the persistent of dictatorships in many societies.

**JEL Classification:** P16, H11, H41, H42

**Key Words:** Dictatorship, Patronage, Public Goods Provision, Military Spending, Secondary School Enrollment Rate

### **3.1. Introduction**

Dictatorships and their behaviors towards patronage and public goods provision are the topics which have fed a heated debate in various fields like political science, economics, and public choice. In general, dictatorship is defined as “a form of government in which one person or a small group possesses absolute power without effective constitutional limitations”. Historically, it has taken various shapes, and is experienced by almost all of the existent civilizations. For instance, absolute monarchies in the Medieval Europe; the early Muslim identities; communist regimes in Soviet Union, China and North Korea; the present-day monarchies in most of the Arab countries; and the military rulers in the third world countries are the major forms that it has taken in various societies and at various times. Most of the available literature characterizes all of these forms with the concentration of power in few hands and hence, the existence of a dominant coalition in some way (Magalhaes, 1995; Gregor, 2001; North et al., 2009; and Acemoglu and Robinson, 2012).<sup>1</sup> The politically dominant coalition also has a privileged position in the economic sphere as the political system is often used to regulate economic competition and create rents. Thus, instead of open access to the wide cross-section of society, dictatorship is associated with limited access order where a dominant coalition dominates the rest of less-organized population. This limited access order, in turn, makes dictatorship as an undesirable form of political regimes as compared to constitutional democracy as far as economic

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<sup>1</sup> For instance, North’s et al. (2009) characterization of natural state from Fragile Natural State to Basic Natural State, and from Basic Natural State to Mature Natural State is simply the expansion of a dominant coalition; or in other words, the fraction of people with power in hand increases as natural state develop from fragility to maturity. Similarly, to Acemoglu and Robinson (2012), dictatorship is a set of absolutist and exclusive political institutions from which exclusive economic institutions like limited protection to property rights, limited rule of law, and limited contract enforce mechanism emanate. Thus, the exclusive group dominates in the political, economic and social aspects of life.

development is concerned (Lipset, 1959; Drèza and Sen, 1989; Przeworski et al. 2000).

However, despite the universal agreement on its undesirability, dictatorship has been persistent throughout the history, and still exists in large parts of the world.<sup>2</sup> For instance, Deacon (2009) notes that 68% of the world's countries are governed by nondemocratic regimes during the last half of the 20th century, and over one-third remained nondemocratic as of 2000. Similarly, with regard to the persistence of military rule, Mulligan et al. (2004) claim that three-fourth of the countries in the world have experienced direct military rule since 1945.<sup>3</sup> Additionally, the historical analysis illustrates that military has been an important component in the persistence of non-democratic regimes. This reflects that dictatorship encompasses the use of violence in sustaining its political power or the associated economic rents.

In this paper our focus is not on the theory of dictatorship; instead, we concentrate on the undesired effects of dictatorships. In particular, we want to analyze what dictatorships imply for patronage relative to the provision of public goods. Alternatively, what are the instruments that the dictators need to deploy in order to continue with their rule? Broadly, patronage is an institution whereby rulers allocate material benefits to a selected group of citizens or agents of the state in return for political support. Since patronage is governed by a set of rules and established practices, it is, thus, a type of institution along the lines established by North

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<sup>2</sup> According to North et al. (2009), the rents associated with dictatorship order social relations, control violence, and establish social cooperation within the dominant coalition. These incentives, in turn, make dictatorship advantageous to the members of dominant coalition as compared with other alternatives. Thus, the dominant coalition uses its power to sustain with the status quo in order to maintain its privileges.

<sup>3</sup> Mulligan, et al. (2004, p. 51) further argue that the total number of dictatorships constituted a majority of the world's governments between 1950 and 1991 and comprised over 40% at the start of 21<sup>st</sup> century.

(1990).<sup>4</sup> However, patronage is not specific to a particular political regime type; it can exist in any type of regime, depending upon the objectives of the rulers.<sup>5</sup> In the same way, the patronage strategies that the rulers adopt and the beneficiaries of the resulting patronage strictly depend on the objectives of the ruler. For instance, the democratic rulers desirous of re-election will allocate patronage to those interest groups from whom they can seek campaign contribution and/or votes in the future.<sup>6</sup> Since dictators are not elected; so, the threats to their power are different from those faced by the democrats. The major threat to the dictatorial regimes is the overthrow of the government, whether it is through military take-over or through rebellion by the common citizens.<sup>7</sup> Generally, dictators allocate patronage to the military to cope with the threat of coup and probably, to appease the potential private interest groups who might initiate revolution.<sup>8</sup>

Patronage, in turn, has severe implications for the provision of public goods, including both the provision of general services and the North's (1981) operating rules.<sup>9</sup> Given that dictators rely

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<sup>4</sup> See for the detailed definition of institutions North (1990).

<sup>5</sup> For instance, the objectives of the rulers may be either the expropriation of current rents or designing institutions with a view to maximize their political power and thereby, expropriate rents in the future.

<sup>6</sup> Here, we assume that the democratic rulers only face public threats in terms of votes or re-election, *i.e.* we ignore the threats posed by the agents of state to overthrow the government like military take-over or bureaucratic plot against the government which are most common in today's third world countries.

<sup>7</sup> For instance, many of the military dictators in Nigeria are overthrown through the counter-coup by the lower-ranked officers from different ethnic groups than those of the rulers. Similarly, the overthrow of General Ayub Khan in Pakistan (1968) and Hosni Mubarak (2011) in Egypt resulted from the rebellion of general masses.

<sup>8</sup> In addition, for dictators, the decision to allocate the amount of patronage depends crucially on the degree of monopoly power enjoyed by the dictator, and the size of the group a dictator must satisfy in order to remain in office.

<sup>9</sup> General services include education, health, infrastructure development etc. and the North's (1981) operating rules include regulatory quality, the effectiveness of governance, the control of corruption etc. Operating rules are generally the rules and regulation that regulate the day-to-day economic activities.

largely on the provision of excludable goods like patronage or targeted transfers, the provision of public goods should be significantly poor under dictatorships. Qualitative evidence suggests that that the quality of public services declines when dictatorship is imposed and improves when dictatorship is replaced (Deacon and Saha, 2005).<sup>10</sup> For instance, according to Deacon (2009), countries that either lack a legislature or have only a rubber stamp body enroll only 20% of their school age populations in secondary school; countries with effective legislatures enroll 81%. In the same way, dictatorial regimes are significantly different from democracies in terms of the operating institutional frameworks. Dictators can impose unpopular economic or social reforms within their countries without a fear of being voted out of office (Huntington, 2006). For instance, dictatorships encompass limited protection to the property rights, limited access to justice, and the hold-up and the commitment problems. All of them enhance significantly the costs of new entrants to innovate and make long-term specific investments.

In this paper, we want to analyze this interaction between the authoritarian regimes, patronage, and the provision of public goods in greater detail. This is an empirical endeavor in which we want to show that dictators allocate more patronage or targeted transfers relative to democratic rulers. However, they provide a meager amount of public goods, again, relative to democracies. Our measure of patronage is military spending which, if our hypothesis

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<sup>10</sup> The authors provide various examples. For instance, the authors note that when Nigeria came to under military rule in 1983, the proportion of children staying in school to the fourth grade fell from 81% to 72% and childhood disease immunization rates fell by more than one-half. In Argentina, the rural population's access to safe water increased after civilian rule was established in 1973 from 12% in 1970 to 26% in 1973, but then dropped markedly after the military coup in 1976 to 17% in 1984. Greece's infant mortality rate dropped by one-fourth as the country made the transition to democracy during the 1970s.

was true, should be higher in dictatorships than in democracies, provided that we control for conflicts including both civil and external, the social factors like population, and the geographical factors like the total area.<sup>11</sup> Second, our measure of public good provision is secondary school enrollment rate which, given our hypothesis, should be significantly and negatively affected by the persistence of dictatorships. The remaining of the paper is organized in three sections. Section 2 surveys some of literature that clarifies the issue discussed in the paper and lays the foundation for the theoretical framework of our analysis. After setting out the theoretical framework, we provide, in section 3, a detailed analysis of data, empirical results, and the discussion in the lights of available literature and our empirical results. Finally, section 4 concludes the paper.

### **3.2. Literature Review and Theoretical Framework**

Dictatorship is a subset of formal political institutions, having adverse consequences for a variety of political and economic aspects. For instance, in terms of political development, the structure of dictatorship and its style of operation are not consistent with the theoretical aspects of democratic norms; and thus, it has severe implications for the institutionalization and stabilization of democratic culture (Ikpe, 2000). Second, it encourages patronage politics and thereby, enhances the development of clientalist networks. Similarly, in terms of economic development, dictatorship and its associated absolutist economic institutions

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<sup>11</sup> The social and geographical factors determine the amount of state intervention that is needed for Acemoglu and Robinson (2012)'s centralization. In other words, it is the minimal amount of state interference for maintaining law and order, and securing protection to the private property rights. Similarly, mitigating civil conflicts are needed for achieving the necessary centralization and the plurality in a society. External conflicts are shocks to the system that indicate the outsiders' expropriation. All of these factors necessitate the spending on the military in order to prevent internal and external predation. However, if dictators spend beyond these factors on military; then it is a patronage because they use military for repressing those who challenge their rule.

discourage Schumpeterian creative destruction (Acemoglu et al., 2010; Acemoglu and Robinson, 2012). This is because the fear of predation makes the innovators and the new entrants shy in investing in research and development, and making long term investments respectively.<sup>12</sup> In this paper, we take one aspect, and want to see the effects that dictatorships might have on the allocation of patronage relative to the provision of public goods. So, in this section we cite the literature that is related to the relationships between dictatorship and patronage, and dictatorship and public good provision. As a by-product, we would be able to set out the theoretical framework for our empirical analysis.

### ***3.2.1. Dictatorships and the Patronage to Military***

Patronage and Clientalism are the defining characteristics of Max Weber's broad definition of Patrimonialism.<sup>13</sup> Patronage, and clientalist networks and their rent-seeking activities take various forms, depending on the nature of a country's political institutions. For instance, the lobbying of legislators for different policies or redistributive transfers is one of the most popular forms that these activities can take in modern democratic systems. Legislators provide special-interest legislation or distributive favors to interest groups in return for either past or future votes, or campaign contributions. In comparison, dictators rely on propaganda, repression, controlled information, and restricted freedom of

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<sup>12</sup> The literature on the economic effects of regime type initiated with the theoretical hypothesis in the seminal work of Lipset (1959). Onwards research analyzed various aspects. For instance, Przeworski et al. (2000), based on the data from 35 countries, conclude that per capita income is associated with the types of political regimes. In particular, they conclude that poorest countries are dictatorships. Similarly, Drèza and Sen (1989) argue that all famines have happened under autocratic rule.

<sup>13</sup> Patrimonialism is a system of personal rule in which the ruler dispenses offices and benefits to subordinates in return for loyalty, support and services (Weber, 1978:1031). Clientalism is a subset of Patrimonialism that displays patron-client relationships in the exercise of public authority and distribution of benefits.

speech for their political power. In order to strengthen these instruments, dictators can either resort to the distribution of largesse or to violence. However, in the latter case, they need a specialized force to conduct violence which is often available in the form of military (Magalhaes, 1995; Wintrobe 2001; Acemoglu et al., 2010). Historically, in most of the autocratic regimes, rule has been protected by the military force. In return, the military has been endowed with a privileged position in the patronage and rent-seeking activities of political elites (Huntington, 2006; Finer, 1976, Acemoglu et al. 2010).<sup>14</sup>

In addition to coping with the threats to their regimes, dictators need the economy to function well and the country to be militarily secure so that to ensure seizing economic rents (O'Donnell, 1973; Levi, 1988; McGuire and Olson, 1996).<sup>15</sup> Robinson (2000) argues that unless the dictators can rely on exporting mineral resources; they need to solicit economic cooperation. Such cooperation is achieved through offering incentives to various groups. The interest groups are offered policy concessions and other distributive largesse in order to seek political and economic cooperation. The beneficiaries of these policies, in return, provide political and economic support just like as the clients serve the interests of their patrons. Similarly, in order to get the military cooperation, they need to provide patronage to the

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<sup>14</sup> For instance, in the Medieval European monarchies, royal families had specialized military forces that served their interests. Similarly, in modern dictatorships, the interests of the political elites and the military are generally allied. The logic is simple and is provided with details in Kimenye (1987) and Mbaku (1991). In democracies, where the legislative bodies generally allocate and oversee the resources assigned to the military, the rent-seeking of military is generally confined to political lobbying. However, in dictatorial regimes, the military face different constraints. Rents are created and allocate by the dictator to groups supporting the ruler (Kimenye, 1987, Mbaku, 1991).

<sup>15</sup> For instance, in a good-functioning economy, he can tax more and thereby increase his rents what is called as an encompassing interest in Olson's (1965) *stationary bandit*. Similarly, strong military protect his rents by intimidating the opposing forces, including both the internal and external forces against the regime.

military in the form of higher spending on them relative to other comparable regime type.

The self-interest of military has been a focal point of discussion in the political science literature on dictatorships (Huntington, 2006; Finer, 1976; Nordlinger, 1977). For instance, Nordlinger (1977) argues that “the great majorities of coups are partly, primarily, or entirely motivated by the defense or enactment of the corporate interests of military”. Relatedly, Tullock (1987) observes that dictatorships are usually overthrown by the high-ranking officials within the incumbent government and that in autocracies, control of the armed forces is crucial for capturing and maintaining the apparatus of the government. In addition to its self-interest, military has, also, been an effective and a specialized group in regulating the private competing groups. For instance, Acemoglu et al. (2010) argue that all non-democratic regimes rely on some degree of repression against the competing groups, and this repression is often exercised by a specialized branch of the state, *i.e.* the military. Similarly, Wintrobe (2001) asserts that a rent-seeking military is the cheapest way to solve the ‘Dictator’s Dilemma’.<sup>16</sup> The major forms that repression in autocracies typically includes are the restrictions on the rights of citizens to criticize the government, restrictions on the freedom of press, restrictions on the rights of opposing groups etc. However, imposing such restrictions is costly and therefore, the resources spent on these restrictions are not available for other purposes. Thus, keeping in view its self-interest and violence capability, the military plays a central role in the persistence of non-democratic regimes.

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<sup>16</sup> Wintrobe (2001) defines Dictator’s Dilemma as “the inability of dictator to know that how much support he has among the general population as well as among smaller groups with the power to depose him. The author further argues that there is always a class of people who are repressed under a dictatorship; and there is also, in any successful dictatorship, another class- the *overpaid*.”

In the first instance, the military rules directly where it decides about the patronage to itself, and the provision of non-excludable public goods to citizens. Obviously, the special interests of other privileged groups are protected even under the military dictatorships. In case of civilian dictatorial regime, military serves as an agent of the elite.<sup>17</sup> In such arrangements, the non-democratic rulers decide the size of patronage to the military, the provision of private benefits to the special interest groups, and the provision of non-excludable and non-rival public goods to the citizens. Nevertheless, this allocation crucially depends on the bargaining power of each interest group, and the degree of the rulers' reliance on these groups for political power.<sup>18</sup> With regard to its role in both of the arrangements, the military provides the coercive force needed to maintain the regime security. In particular, the military leaders assure that competitive interest groups do not develop the modes of behavior that are detrimental to the state's security. Activities of such competing groups are carefully monitored by the military elites to ensure that none develop enough potential violence to capture the government. In return for supporting the regime, the military receives rents via a share of government expenditure (Hewitt, 1992; Sandler and Harley, 1995; Goldsmith, 2003). Thus, in a sense, this is an exchange relationship. However, to the extent that resources provided to the military are in exchange for some favor to the regime and not for some productive activity,

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<sup>17</sup> Examples of the military dictatorships include General Ayub Khan, General Muhammad Ziaul-Haq, and General Pervez Musharraf, all the three in Pakistan; the regimes established in Turkey after the coups in 1960, 1971, and 1980; the regime in Guatemala after the coup of 1954 under the leadership Carlos Castillo Armas; the regime in El Salvador in 1956 with the government of Oscar Osoriothe; the regime in Brazil after the overthrow of President Joao Goulart's government in 1964; and the regime in Greece after the military coup of 1967. Similarly, the examples of civilian dictatorship supported by military include Getulio Vargas established in Brazil in 1937, Ferdinand Marcos's long lasting regime in the Philippines and President Alberto Fujimori's regime's in Peru.

<sup>18</sup> Mbaku (1991) argues that in authoritarian systems, political success tends to be highly dependent on the use of force and therefore, the groups with comparative advantage in violence dominate in competition for rents. See also Acemoglu et al. (2010).

such allocations are a rent or a transfer of income to the military via the government. In other words, instead of providing public goods to the wide cross-section of society, the authoritarian rulers rely on clientalism and patronage politics where a small fraction of the population is endowed with privileges in return for their political support.

### ***3.2.2. Dictatorships and Public Good Provision***

Although, the literature has not fully identified the complete set of priorities of different types of regimes; however, we have consensus on the differences between dictatorships and democracies regarding the provisions of public goods (Deacon, 2009). McGuire and Olson (1996) argue that dictators maximize and expropriate the budgetary surplus while redistributive democratic rulers maximize the welfare of the elite section of society. So, in order to maximize the budgetary surplus, the dictators will both charge higher taxes and under-provide public goods. In contrast, democratic rulers are part of the elite section; so, their interests in public goods are more encompassing than those of the dictators. Consequently, democracies are more prone to the provision of public goods. The central message of McGuire and Olson (1996) is that institutional changes that result in the increase in the size of the winning coalition would increase the provision of public goods and decrease the share of government revenue spent on transfers to the politically powerful.<sup>19</sup> Similarly, Niskanen (1997) quote that democratic rulers maximize the welfare of the median citizen and thereby, provide more public goods than dictators do.<sup>20</sup>

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<sup>19</sup> This idea is equivalent to the expansion in North et al.'s (2009) dominant coalition and an increased inclusiveness in Acemoglu and Robinson (2012).

<sup>20</sup> The only notable difference between McGuire and Olson (1996) and Niskanen (1997) is that in the former, the democratic rulers maximize the welfare of elite faction while in

Lake and Baum (2001) proclaim that the differences in the behaviors of dictators and democratic rulers with regard to policy choices reflect the differences in the degree of contestability. The authors regard political institutions as the structure of the political market and in such a market, contestability represents the competition for the monopoly position of the ruler among the potential political challengers.<sup>21</sup> In a democracy, the leader's position is highly contestable because the entry and exit costs to the monopoly position are relatively low. In contrast, the dictatorship is characterized by high entry and exit costs. For instance, entry might require deposing an all-powerful ruler by force with the possibility of failure. In case of failure, the contender might face exile or even death. Exit by a deposed dictator can be equally costly.<sup>22</sup> In addition to the costs to non-democratic rulers, entry and exit may also involve costs to the citizens if the entry or exit takes the form of revolution or civil war etc.<sup>23</sup> The differences in the entry-exit costs, and hence contestability is directly associated to the durability of monopoly power that the rulers in both cases possess, having different implications for the provision of public

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the later; the democratic rules maximize the welfare of the median citizens, defined in terms of incomes. However, the predictions of both the models are similar. For instance, in both tax rates are lower and public spending higher under democracy than under autocracy. Thus, in both of these models, differences in the policy choices under alternative political systems are driven by differences in the degree to which government represents the interests of broad versus narrow segments of society.

<sup>21</sup> Lake and Baum assumes (2001) assumes that all political leaders use their monopoly position to extract rents from the citizens, but the size of rents actually expropriated depends on the degree of contestability in a society.

<sup>22</sup> We have example of Saddam Hussain in Iraq where the cost for him was death. Similar was the case of Qadafi in Libya. In case of Pakistan, Pervez Musharraf survived but he is ousted from the country. Hosni Mubarak is in prison after the separation from the monopoly position.

<sup>23</sup> The recent revolutions in Egypt, Libya or Syria are living examples of the costs to the citizens. For instance, the strikers in Al-Tahrir square in Egypt not only faced the opportunity costs in terms of foregone earnings; but they also faced several casualties. Similarly, in cases of Libya and Syria, it has taken the form of civil war, involving significant costs to both the supporters of ruling class and the opponents.

goods. The higher degree of competition associated with democracies result in relatively greater levels of public goods and smaller amount of rents to politicians than would be observed under less competitive dictatorial regimes.

The model in Bueno de Mesquita et al. (2003) points out that the performance of governments with regard to public good provision, patronage and corruption, the leader's longevity in office, and other matters largely depend on the size of the selectorate and the size of the winning coalition.<sup>24</sup> Second, education and health care systems can be characterized as relatively broadly based public goods. Thus, investing in the provision of public services such as education and health are the relatively cheap ways of gathering political support for leaders with large winning coalitions, and relatively expensive for leaders with small winning coalitions. Different regime types such as democracy, monarchy, or military dictatorship are characterized by differences in the size of their selectorate and winning coalitions; so, it would reflect differences in their behaviors with regard to patronage, targeted transfers or public good provision. Since in democracy, the size of winning coalition is generally larger than that of the dictatorships, so democracies are more prone to the provision of public goods. In contrast, in dictatorship, the size of the winning coalition is small, so targeted transfers and patronage policies are less costly and more effective for political survival.

Thus, in all of the three lines of research discussed above, the differences in regime types reflect the size of the privileged group relative to the total population, termed as the system's

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<sup>24</sup> The selectorate includes all individuals who can potentially affect the selection of the government and therefore its policies. The selectorate roughly equates to the electorate in a modern democracy, to Communist party membership in a Soviet style communist state, and to the ruling family in a hereditary monarchy. The winning coalition, a subset of the selectorate, is the set of individuals whose support is necessary for the government to stay in power. In a democracy, a winning coalition must include at least 50% of the selectorate, while in a military dictatorship it could be a small cadre of officers.

inclusiveness. In an ideal democracy, the privileged group is the majority of the entire population, while in dictatorship the elite class includes the dictator and his close associates. In a sense, the system's inclusiveness serves the same role as an 'encompassing interest' of the McGuire and Olson (1996), the 'contestability' of Lake and Baum (2001), and the 'winning coalition' of Bueno de Mesquita et al (2003). This is because all of them argue that since dictators need lesser support relative to representative democrats from the public; therefore they provide lesser public goods compared to democratic rulers.

Given this literature, the behavior of rulers towards the provision of public goods can be summarized into two broad approaches. The first approach is based on the notion that dictators serve the interests of small, exclusive group, and thereby exploiting the remaining unorganized population. In such a situation, public office is mainly used for corruption and the protection of the regime, and little attention is given to the provision of public goods. This approach is often seen in an extreme form of dictatorship where the use of violence is the major means of controlling the populace.<sup>25</sup> The second view is based on the clientalist networks where the interaction between the government and citizens exhibit an exchange relationship, *i.e.* the government offer public goods and/or direct payments to favored groups in exchange for political support.<sup>26</sup> In these market relationships, the provision of public goods or patronage clearly is the functions of monopoly power of the rulers and the bargaining power of the

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<sup>25</sup> In addition to violence, brainwashing and indoctrination are also common in the persistence of dictatorships.

<sup>26</sup> A dictator "buys" the loyalty of a group when he gives them more than they can expect to obtain under a different regime. Thus, in general, the easiest way to overcome the problem of obtaining support is to "overpay" supporters, that is, to pay them more than they are worth.

clients. This approach is most common in fragile democracies and less extreme form of dictatorship, especially in cases where violence is costly.

### **3.3. Data, Empirical Results and Discussion**

The empirical strategy is such that we estimate separate regressions for our indicators of public goods and patronage. In both cases, our major emphasis is on the explanatory power of dictatorship while controlling for a bunch of other possible explanatory variables. In this section, first, we describe the summary sketch of our data. Second, we provide the estimation results and discuss those in case of our measure of public good provision. The results and discussion of patronage is given in the final sub-section of this section.

#### ***3.3.1. Data and Summary Statistics***

Given the data limitations, we rely on cross-sectional regressions which are based on both annual and averaged data. However, the data is highly variable-specific, depending on the availability of data. The use of cross-sectional data is justified by two factors. First, the panel is not balanced, *i.e.* in some countries; the variables are the averages over long periods but in other cases, they are the averages over small periods. For instance, if a country is either established later or if the data is not available over long period for it; then we use the data for the available smaller periods. Second, the institutional variables are highly persistent. For instance, democracy in developed countries and monarchy in Arab countries are persistent over the whole period covered. So, unbalanced panel combined with persistent measure of polity would not add much to the analysis as far as the main variable of interest is concerned. The selection of countries is highly random and our sample includes all

those for which the variables of our interest are available. The list of countries along with data on their major indicators is given in table 3A2 in the appendix. The data is taken from various sources and considerable care is taken in the construction of variables. Additionally, in table 3A4, we provide the details of the definitions of variables and their sources.

For our analysis, we employ two alternative indices of country's regime type. The first one, denoted by dictatorship1, is based on the nation's polity score which is formed by subtracting its autocracy score from its democracy score. It is taken from the Polity *IV* database (Marshall and Jaggers, 2000) which rates countries based on the degree of political competition, the openness and competitiveness of executive recruitment, and the extent of legislative and judicial constraints on the chief executive. The second measure, denoted by dictatorship2, is based on Golder (2005) which measure regime type by a dummy variable where democracy takes a value 0 while dictatorship takes a value of 1. Both of these measures are averaged from 1960 onwards and constructed in such a way that ranges from 0(ideal democracy) to 1(extreme dictatorship). Our dependent variables on public good provision and patronage are secondary school enrollment rate and the military expenditure respectively.

The summary statistics, given in table 3.1, show that the average scores on our measures of dictatorships are 0.44 and 0.59 for dictatorship1 and dictatorship2 respectively. This indicates that on average; more than 40% of countries in our sample have experienced dictatorship since 1960.<sup>27</sup> The continental-wise

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<sup>27</sup> The differences are due to the fact that the second measure is based on just the dummy variable for years in which the countries have experienced dictatorship while the first measure is not based on the years the countries have experienced dictatorship in; instead, it depends upon the characteristics of the selection of chief executives, check and balances on the chief executives and the degree of political competition. However, the correlation between our two measures is 83%.

division reflects that sub-Saharan Africa leads the world with more than 62% of its countries persisted with dictatorship. Sub-Saharan Africa is followed by Asia and then the rest of the countries.<sup>28</sup> Similarly, the countries in Neo-Europe which includes Australia, Canada, New Zealand, and the United States have persisted with ideal democracy. Neo-Europe is followed by main Europe which has very low scores on both measures of dictatorships, reflecting the higher degrees of democracies in most of the European countries.<sup>29</sup>

Table 3.1

Our indicators of public good provision and patronage show divergent patterns. For instance, the average secondary school enrollment rate is around 21.6% in sub-Saharan Africa which is the lowest among all the continents. However, patronage, indicated by higher military expenditure as percentage of GDP, is higher in Asia. Asian countries, on average, spend 5.15 percent of their GDP on military, followed by Neo-Europe with 2.21 percent and sub-Saharan Africa with 2.07 percent. Similarly, the detailed summary statistics of the other control variables are shown in table 3.1.

Again, we are interested in analyzing the behavior of dictators towards the provision of public goods and patronage allocation. So, we expect the coefficient on our measures of regime type to be negatively significant in case of public goods, and positively significant in case of patronage. Alternatively, dictators are more inclined towards patronage allocation than they are to the provision of public goods. The control variables in both cases are

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<sup>28</sup> In Asia, we have seen a variety of dictatorships ranging from military dictatorships in countries like Pakistan, Thailand etc. to Arab monarchies and communist dictatorship in China. The rest of the countries mainly include Latin and South American countries.

<sup>29</sup> See for the detailed regional divide of countries table 3A3 in the appendix.

different, depending upon the theoretical predictions in the available literature.

### ***3.3.2. Secondary School Enrollment Rate***

Secondary school enrollment rate is the most widely used measure of public good provision (Lake and Baum 2001; Keefer, 2007; Deaton, 2009).<sup>30</sup> The primary control variables used in all the specifications of the secondary school enrollment rate are real GDP per capita, primary school enrollment rate, and public spending on education. In order to control for the endogeneity of GDP per capita, we use GDP per capita of the initial available year for each country. In addition, we control for Sub-Saharan Africa in some specifications to ensure that the results are not driven by some special characteristics of these countries. Three different measures, *i.e.* population, total area and the degree of the openness of a country, are used to control for the scale of the economy. In addition to these, foreign aid per capita is also controlled for in some specifications to see if it has any impact on education as most of the donor agencies claim with regard to education. To control for targeted transfers based on ethnic politics, we also control for ethno-linguistic fractionalization because ethno-linguistic fractionalization is strongly correlated with civil conflicts, arising mainly from issues related to distribution.<sup>31</sup>

Table 3.2 shows the results of our regressions for secondary school enrollment rate, each column including a subset of these control variables. Columns I and II represent baseline regressions for our two measures of dictatorship respectively. As is evident

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<sup>30</sup> The selection of our possible control variables is mainly based on this literature.

<sup>31</sup> Montalvo and Reynal-Querol (2005b) has shown that ethnic diversity affects the incidence of civil wars arising mainly from issues related to the distribution of common pool in ethnically diverse societies.

from the table, both of these measures have a significant negative impact on secondary school enrollment rate. Column I shows that a 1% transition from dictatorship to democracy results in an approximately 0.38% increase in the secondary school enrollment rate. Alternatively, a 1% increase in secondary school enrollment rate could be achieved through an approximately 2.5% transition from dictatorship to democracy. This translates to the fact that countries that are successful in comprehensive transition from extreme dictatorship to ideal democracy have 37.7 percent greater secondary school enrollment rate relative to those countries that persisted with extreme dictatorships. Similarly column II, using the second measure of dictatorship, shows that the difference between extreme dictatorship and ideal democracy in terms of secondary school rate is around 29 percent. Columns III and IV add the dummy for Sub-Saharan Countries to columns I and II respectively to show the effects of the characteristics of these countries. In both cases, the measures of dictatorships are still significant. Dictatorships have 32 percent and 23 percent lesser secondary school enrollment rates than democracies in the two cases respectively.

Table 3.2

To do the sensitivity analysis, from column IV onwards, we control for additional factors like the degree of urbanization, population, the degree of openness of a country, the total area of a country, per capita aid received by a country, and the ethno-linguistic fractionalization in a country. Additionally, since there is no significance difference between the results of our two measures of dictatorship, therefore we report all the remaining specifications with our first measure of dictatorship. As is evident from the table, all of the scale variables like population, area and openness are

insignificant, implying that the scale of economies does not change the magnitude and significance of our main results. Urbanization is significant but still the difference between extreme dictatorship and ideal democracy remains at around 28% in terms of secondary school enrollment rate. Finally, ethno-linguistic fragmentation also does not have any significant effect on our results like the scale variables. Thus, our sensitivity analysis indicates that the significance of our main variable of concern, *i.e.* dictatorship is robust.

After the initial results, it is always essential to see that the results are robust to the problems of reverse causality and endogeneity. For instance it is possible that higher education levels caused by increases in secondary school enrollment rates subsequently result in institutional improvements, *i.e.* they cause transition from authoritarianism to democracy. To explore this, we adopt the approach of instrumental variables. We use legal origins and Muslim denomination as instruments for our measures of dictatorships. Legal origins are regarded as colonial legacy, and are the most commonly used instruments for institutional quality (Hall and Jones, 1999; Acemoglu and Johnson, 2005; Keefer, 2007; Kerekes and Williamson, 2008). To our knowledge, we are the first to use the Muslim beliefs as instrument for dictatorship. Since the spread of Islam, Muslim rulers have attracted that the earth belongs to the God and they rule as God's deputy or lieutenant on this earth (Crone, 2003). Thus, Muslim beliefs have an associated legitimacy for the persistence of dictatorships. This is evidenced by the fact that majority of the countries where the percentage of Muslim population is higher have experienced dictatorships. Among them are Pakistan, Nigeria, Saudi Arabia, Iraq, Iran, and other Arab countries where majority of the population are Muslims. Second, we believe that Muslim beliefs might not have a direct effect on current policy choices with respect to secondary school enrollment

rate.<sup>32</sup> For instance, Islam does not have any distinctive view regarding the spread of education as compared with other religions.

Similarly, colonial history reflects the institutional origins of a country. The idea that many countries have distinct legal origins is identified by La Porta et al. (1999), and Glaeser and Shleifer (2002). Legal origin is shown to shape institutions because different legal traditions, imposed during colonization, affect current legal systems (Djankov et al., 2003). They are classified as common law and civil law systems. Common law, imposed during British colonization, is referred to as English legal origin. The French imposed civil law systems. Thus, the British Common Law and the French Civil Law would be good instruments for the development of subsequent political institutions in the colonized countries. We use British common law as one of our instruments to control for the impact of legal origins on current institutions. This approach circumvents the problem of endogeneity, *i.e.*, the Muslim denomination and legal origins determine current political institutions, but not current policy choices or outcomes. Similarly, current policy outcomes such as secondary school enrollment cannot determine legal origins 150 to 200 years ago or Muslim denomination.

The instruments need to be valid, *i.e.* only affect the dependent variable indirectly through their effects on the endogenous variables. To ensure the validity of instruments, we use Sargan's test for the over-identifying restrictions and Hausman's test for the comparison of OLS coefficients with 2SLS coefficients. The detailed results of these tests, summarized in table 3A1 in the appendix, show that in all our regressions, the instruments are

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<sup>32</sup> The Muslim Denomination is measured as the percentage of Muslims into total population.

valid.<sup>33</sup> Thus, all of the instruments influence the institutional development of countries, but neither is plausibly related to policy choices regarding secondary school enrollment rate in the 1960s onwards. The results of our 2SLS analysis are given in table 3.3. The results indicate that our original results did not suffer from the significant problems of reverse causality or endogeneity. The signs and significance of the main variables like the degree of authoritarianism and all the other relevant controls remain unchanged. The only notable difference is that the coefficients on the dictatorship became a little bit different as they are expected in case of 2SLS. However, for all the specifications, the Hausman's P-values are larger than 0.05. So, we conclude that there are no large differences between the OLS estimates and the 2SLS estimates, and consequently, the OLS coefficients are consistent. However, we report the results of 2SLS for completeness.

Table 3.3

### ***3.3.3. Military Spending as Percentage of GDP***

Many proxies have been used to measure patronage in economies. The most notable of these are the size of public sector measured as public expenditure as percentage of GDP, the government wage bill, or the size of public investment etc.<sup>34</sup> However, these measures are subject to some criticism. First, the size of the public sector includes both spending on public services and special-interest spending, so we cannot separate the impact of regime type on patronage. The same is true with the government wage bill.

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<sup>33</sup> See the note of table 3.3 for the details of tests regarding the instruments. The detailed results of these tests are given in table 3A1 in the appendix.

<sup>34</sup> Keefer (2007) used both the government wage bill and public investment.

Second, most of these proxies are useful when used for estimating the effects of various types of democracies or the quality of democracies on public budgets.<sup>35</sup> Since, in this study, our purpose is to see the impact of dictatorship on patronage and public good provision, we believe that the military spending is preferable to other proxies of patronage or targeted transfers. Our belief is legitimized by two different but related justifications. First, dictators are not interested in voting or re-election; instead, they are interested in enhancing or maintaining their political power because most of their rents are associated with that power.<sup>36</sup> Second, they need a specialized force to control their potential opponents or to dodge the threats to their regimes. The military is endowed with two capabilities in dictatorial regimes: first, they can overthrow the dictator; second, they can control his opponents by using their specialization in violence. Due to these proficiencies, dictators are highly dependent on military, and therefore are more inclined to offer the military more than their best available alternatives.

With regard to the military spending, the existing literature has not fully identified a congruent theory which is also supported by empirics (Rosh, 1988; Collier and Hoeffler, 2007; Albalade et al., 2012). The main difficulty is that many factors need to be taken into consideration while analyzing military spending. In this study, by avoiding parsimony, we test for a bunch of control variables along with our main variable of concern, *i.e.* regime type. In political science, it has been often argued that rulers use military spending to keep their militaries from overthrowing them (Nordlinger, 1977; Leon, 2010). In this study we test this

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<sup>35</sup> For instance, it is useful when we compare the spending patterns of presidential and parliamentary democracies.

<sup>36</sup> In democracies, the rulers are interested in maximizing their votes, and therefore they focus more on private interest groups, rather than public interest groups like bureaucracy, judiciary, or the military.

hypothesis empirically in case of dictatorship. Alternatively, we want to comprehend how much the dictators incentivize the military to persist with their power or sustain their rule. This issue is important in the sense that higher rents to the military reduce the resources available for the provision of other public goods (Sprout & Sprout, 1968). This section is completely devoted to the empirical analysis of military spending with special emphasis on dictatorships. The dependent variable throughout is the military spending as percentage of GDP.

The results of ordinary least squares estimation is summarized in table 3.4. In the first two columns, we just regress military spending on per capita GDP and our two measures of dictatorships respectively. Both of our proxies for dictatorships have a significant positive effect on military spending as is expected. For instance, in case of dictatorship1, extreme dictatorial regimes spend 0.88 percent of GDP more on military than ideal democracies do. In other words, transition from extreme form of dictatorship to ideal democracy reduces military spending by 0.88 percent of GDP. In the same way, our second measure, *i.e.* dictatorship2, indicates that military spending is higher in absolute dictatorships by 0.51 percent of GDP relative to ideal democracies. In addition, both of these columns have significant and positive coefficients on per capita GDP along with significant F-statistics for the overall regressions.

Table 3.4

In column III and IV we control for civil conflicts, external conflicts, and the size of population for our two measures of dictatorships respectively. In both of these specifications, the civil conflicts and population affect military spending positively, but both are insignificant. Similarly, external conflict has positive

coefficients but is insignificant in specification in which we use our first measure of dictatorship (column III); however, it is significant at 10 percent in column IV which use our second measure of dictatorship. In both of these specifications, the significance of our main variables of concern, *i.e.* dictatorships, remains intact. Again, since there is no significance difference between our two measures of dictatorships as far as estimation is concerned; so, in all of our sensitivity analysis, we report only specifications with our first measure of dictatorship which is based on data from polity *IV*.

In columns V and VI, we control for two additional scale variables, *i.e.* the total area and the degree of openness respectively. In both cases, we have no significant effect of these variables on the inclination to spend on military. Column VII is aimed at controlling for demonstration effect or global effect. In a sense, this is a proxy for arms race. However, it has no significant effect on military spending. Columns VIII and IX control for the windfall rents variables, *i.e.* foreign aid and natural resources wealth, respectively. The results show that both of the windfall variables have no significant effects on military spending. Additionally, columns X, XI, XII control for Africa, Europe, and Asia respectively. The only significant continent is Asia where there are majority of dictatorships in our sample. Also, this is consistent with the fact that on average, Asian countries spend more on military as compared with other countries.<sup>37</sup> Overall, in these results, three points are very important to be noted. First, in all of these specifications, ranging from III to XII, dictatorships and per capita GDP have a significant positive effect on military spending. Second, almost in all specifications, civil as well as external conflicts are insignificant. Also, the geographical variable like area, or social variable like population has no significant effect in the

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<sup>37</sup> See, for instance, the summary statistics.

decisions to spend on military. These three points together indicate that the demand factors have no motives for higher military spending; instead the income and patronage effects are stronger.

Again, in this case also, we need to check the robustness to the problems of reverse causality and endogeneity. For instance, the persistence of modern military dictatorships in the third world countries might have caused by the excessive military spending in the past.<sup>38</sup> Even in case of civilian dictatorships, it might be the case that the excessive spending on military might cause the persistence of dictatorships, provided that these spending are higher in dictatorships relative to democracy. To take into account such possibilities, we provide Two Stages Least Squares (2SLS) estimates in table 3.5. Again, the instruments that we use for our measures of dictatorships include legal origin of English Common Law and the religious belief of Muslim denomination. As mentioned earlier, the English Common law is the most frequently used instrument for political institutions.<sup>39</sup> Also, in this case, we add an additional instrument in the form of Muslim religious denomination as the percentage of Muslim population in countries is highly correlated with our both measures of dictatorships. Our instruments satisfy the Sargan test for over-identifying restrictions, implying the validity of our instruments. Similarly, the Hausman test regarding the differences between OLS and 2SLS estimators suggests no significant differences between the two set of estimators in all the specifications that we provide in table 3.5. The estimates and their standard errors are larger as are expected in case of the 2SLS, but our results do not suffer from the severe

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<sup>38</sup> In countries like Pakistan and Nigeria, the excessive spending on military, legitimized by the conflicts with India and ethnic conflicts respectively, has made the military's incentives larger to remain in the government.

<sup>39</sup> See for instance Hall and Jones (1999), Acemoglu et al. (2005) and Keefer (2007).

problems of reverse causality or endogeneity. Again, for completeness, we report 2SLS estimates.

Table 3.5

### **3.4. Conclusion**

This study is motivated by the recent literature that emphasizes the importance of institutions for economic development. The literature has, so far, arrived at the conclusion that absolutist political institutions create absolutist economic institutions which, in turn, are associated with limited access order. In such a limited access order, the wide-cross section of society is deprived of the access to general services like education or health on the one hand and on the other hand, less or no protection is provided to their property rights. Consequently, the countries which have persisted with absolutist political institutions are facing the problem of under-development. Given this premise, there is a growing theoretical debate about the inclination of dictators to spend more on military to sustain and prolong their regimes; and to spend less on the provision of public services in its place. In this study, we have endeavored to draw some conclusions about this debate by testing this hypothesis empirically.

We have carried out two separate estimations of two different variables: one as an indicator of public services provision, and the other as an indicator of patronage to the military. The first one is the secondary school enrollment rate and the other one is the military expenditure as percentage of GDP. The emphasis is on the type of regime in the list of all possible explanatory variables. The results, based on data from the cross-section of the countries, confirm the hypothesis, *i.e.* dictatorship has a significant negative effect on the secondary school enrollment rate and a significant

positive effect on the military expenditure as percentage of GDP. Hence, we conclude that dictators tend to rely more on military for political support instead of relying on the wide cross-section of the society.

Although, the study clearly demonstrates the behavior of dictators towards the provision of public goods, and the patronage, we believe that more future research is needed to draw some general propositions for policy recommendations regarding institutional reforms in the third world countries. For instance, we have taken a very narrow approach by indexing the dictators' behavior towards patronage with military expenditure. Future work may develop an index for patronage that can capture the effects of targeted transfers both to the private interest groups as well as to the state's privileged groups like military, bureaucracy, and the judiciary. In addition, more econometric analysis is clearly needed in order to understand the exact channels of causation.

### 3.5. Tables for Text

**Table 3.1: Summary Statistics of Variables**

Variable	World	Europe	Asia	Sub-Saharan Africa	Neo-Europe	Others
Secondary School Enrollment	55.78 (32.94)	97.7 (9.85)	59.36 (20.97)	21.60 (16.49)	108.80 (26.54)	50.92 (19.88)
Military Expenditure	2.55 (2.45)	1.97 (0.76)	5.15 (4.23)	2.07 (1.19)	2.21 (1.28)	1.66 (1.02)
Dictatorship1	0.44 (0.32)	0.10 (0.18)	0.58 (0.36)	0.62 (0.17)	0 (0)	0.44 (0.26)
Dictatorship2	0.59 (0.42)	0.16 (0.29)	0.71 (0.40)	0.93 (0.10)	0 (0)	0.57 (0.37)
GDP Per Capita	3973 (6925)	7651 (4370)	6695 (12939)	850 (2060)	11592 (4558)	1733 (1624)
Primary School Enrollment	93.5 (21.4)	102.74 (5.53)	96.15 (14.37)	77.88 (27.89)	101.88 (3.55)	98.59 (19.52)
Public Spending on Education	4.14 (1.44)	5.3 (1.2)	3.78 (1.52)	3.55 (1.17)	5.58 (0.56)	3.98 (1.35)
Population (in million)	26.7 (82.5)	20.11 (21.39)	81.53 (172.56)	7.3 (9.4)	52.8 (85.5)	9.25 (14.71)
Openness	54 (40.4)	72 (76.5)	56.99 (31.44)	43.84 (16.22)	36.15 (16.22)	52.14 (26.82)
Area (in thousands square Kilometers)	1050.9 (2024.8)	229 (184.6)	1165.5 (2234.2)	691.21 (538.17)	6955.1 (4574)	995.9 (1638.2)
Aid Per Capita	14.73 (19.01)	3.9 (11.4)	11.92 (26.61)	20.97 (11.25)	0 (0)	19.56 (20.11)
Civil Conflict	0.79 (0.74)	0.17 (0.38)	0.89 (0.74)	1.19 (0.75)	0.25 (0.5)	0.83 (0.65)
External Conflict	0.36 (0.48)	0.17 (0.38)	0.58 (0.51)	0.31 (0.47)	0.5 (0.58)	0.37 (0.49)
Global Effect	2.39 (0.25)	2.38 (0.21)	2.29 (0.21)	2.40 (0.17)	2.63 (0.36)	2.42 (0.31)
Natural Resources Rents	16.13 (13.29)	9.7 (9.8)	19.70 (17.73)	15.68 (11.03)	10.25 (6.29)	18.66 (13.26)
Ethno-Linguistic Fractionalization	0.29 (0.29)	0.22 (0.28)	0.29 (0.33)	0.30 (0.24)	0.56 (0.43)	0.28 (0.26)
English Common Law	0.31 (0.46)	0.11 (0.32)	0.42 (0.51)	0.42 (0.50)	1 (0)	0.17 (0.38)
Muslim	25.80 (37.74)	1.11 (2.5)	56.45 (43.70)	28.38 (31.05)	0.4 (0.37)	22.36 (39.93)
Urbanization	48.6 (23.22)	68.34 (12.40)	49.92 (25.12)	27.07 (11.76)	80.3 (5.03)	50.32 (19.52)
N	97	18	19	26	4	30

**Note:** Each entry is the Average of the variable with Standard Deviation in the Parenthesis. In some cases, the school enrollment goes above 100. However, this is due to the fact that this is the proportion of students actually enrolled to a particular age group defined for that level of education. So this implies that in some cases either over-aged or under-aged students have been enrolled. For the detailed definition of variables see table 3A4 in the appendix. See also table 3A3 in the appendix for the regional divide of countries.

**Table 3.2: OLS Regressions for Secondary School Enrollment Rate**

Explanatory Variables	Dependent Variable: Secondary School Enrollment Rate									
	I	II	III	IV	V	VI	VII	VIII	IX	X
constant	-10.33 (9.26)	-11.85 (10.48)	5.23 (9.26)	-2.48 (11.26)	0.56 (8.58)	5.19 (9.30)	5.31 (9.32)	5.16 (9.23)	6.70 (9.12)	14.75 (11.80)
Dictatorship1	-37.73*** (6.68)		-32.33*** (5.83)		-27.65*** (5.44)	-32.33*** (5.86)	-32.33*** (5.86)	-32.40*** (5.76)	-30.54*** (5.57)	-31.79*** (6.90)
Dictatorship2		-29.07*** (5.30)		-22.93*** (5.06)						
GDP Per Capita	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.0006** (0.0002)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0005)
Primary School Enrollment	0.54*** (0.086)	0.55*** (0.099)	0.42*** (0.081)	0.46*** (0.098)	0.26*** (0.07)	0.42*** (0.083)	0.42*** (0.082)	0.41*** (0.082)	0.41*** (0.08)	0.42*** (0.098)
Public Spending on Education	(6.45)*** (1.38)	6.94*** (1.23)	6.04*** (1.24)	6.77*** (1.17)	5.05*** (1.15)	6.05*** (1.26)	6.07*** (1.26)	6.05*** (1.23)	6.60*** (1.17)	3.99** (1.55)
Sub-Saharan Africa			-19.44*** (4.19)	-15.97*** (4.38)	-13.56*** (3.98)	-19.41*** (4.27)	-19.46*** (4.19)	-19.13*** (4.24)	-18.24*** (4.13)	-19.77*** (5.40)
Urbanization					0.48*** (0.13)					
Population						1.02e-09 (2.17e-08)				
Openness							-0.004 (0.045)			
Area								8.60e-07 (1.11e-06)		
Per Capita Foreign Aid									-0.20 (0.19)	
Ethno-Linguistic Fractionalization										-6.54 (7.14)
R <sup>2</sup>	0.72	0.73	0.77	0.76	0.82	0.77	0.77	0.78	0.79	0.78
F-Statistic	98.12***	113.33***	87.11***	89.10***	90.35***	72.35***	71.66***	80.70***	80.85***	57.54***
N	96	96	96	96	96	96	96	96	96	73

**Note:** \* Significant at 10%; \*\* Significant at 5%; \*\*\* Significant at 1%. Robust Standard Errors in the Parenthesis. There are no significant differences between estimation with dictatorship1 and dictatorship2; therefore we use dictatorship1 in all the sensitivity specifications.

**Table 3.3: 2SLS Regressions for Secondary School Enrollment Rate**

<b>Dependent Variable: Secondary School Enrollment Rate</b>					
<b>Explanatory Variables</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>
constant	-28.62** (13.28)	-23.73 (14.40)	2.33 (12.69)	-0.79 (13.64)	3.73 (10.20)
Dictatorship1	-27.44** (9.60)		-29.10*** (8.89)		-31.18*** (7.58)
Dictatorship2		-20.07** (8.30)		-24.74*** (7.97)	
GDP Per Capita	0.002*** (0.0004)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.0006*** (0.0002)
Primary School Enrollment	0.59*** (0.10)	0.58*** (0.11)	0.43*** (0.09)	0.46*** (0.10)	0.26*** (0.074)
Public Spending on Education	(7.77)*** (1.47)	7.68*** (1.36)	6.26*** (1.22)	6.65*** (1.16)	4.84*** (1.15)
Sub-Saharan Africa			-19.92*** (4.08)	-15.32*** (4.55)	-13.22*** (3.88)
Urbanization					0.46*** (0.13)
Adjusted- $R^2$	0.69	0.71	0.76	0.75	0.80
F-Statistic	86.47***	99.26***	85.21***	89.35***	91.01***
No. of Observation	96	96	96	96	96

**Note:** \* Significant at 10%; \*\* Significant at 5%; \*\*\* Significant at 1%. Robust Standard Errors in the Parenthesis. In 2SLS, the  $R^2$  has no statistical meaning and therefore is omitted from the table. In case of 2SLS, the appropriate test for the validity of instruments is the Sargan test statistic which has the null hypothesis that instruments are not correlated with the error term of the second stage and therefore that the excluded instruments are correctly excluded from the regression. Failure to reject the null implies that the instruments are valid. For all of our specifications: For the Sargan test statistic, P-Value >0.05, which implies the validity of instruments. Similar comparing the OLS coefficients with those of 2SLS: For Hausman t-statistic, P-Value >0.05, which implies no significance differences between OLS and 2SLS estimates. For the details of the tests values, see table 3A1 in the appendix. We report 2SLS results only for those specifications in which all the coefficients in case of OLS are significant.

**Table 3.4: OLS Regressions for Military Expenditure**

Explanatory Variables	Dependent Variable: Log (Military Expenditure as % of GDP)											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
constant	-0.68 (0.51)	-0.53 (0.59)	-1.27 (1.14)	-0.83 (1.18)	-1.36 (1.07)	-3.16* (1.75)	-1.07 (1.36)	-1.82 (1.28)	-2.01 (1.75)	-0.97 (1.20)	-1.08 (1.17)	-0.71 (1.11)
Dictatorship1	0.88*** (0.30)		0.80** (0.35)		0.68** (0.32)	0.90*** (0.35)	0.81*** (0.36)	0.84*** (0.32)	0.77** (0.38)	0.84** (0.37)	0.85** (0.37)	0.58** (0.29)
Dictatorship2		0.51** (0.18)		0.48** (0.16)								
Log (GDP Per Capita)	0.13** (0.06)	0.12** (0.05)	0.17*** (0.06)	0.16** (0.07)	0.16*** (0.06)	0.18*** (0.06)	0.17*** (0.06)	0.19*** (0.07)	0.17*** (0.06)	0.15** (0.07)	0.15** (0.07)	0.16*** (0.06)
Civil Conflict			0.14 (0.11)	0.15 (0.11)	0.11 (0.12)	0.19* (0.12)	0.14 (0.11)	0.13 (0.10)	0.15 (0.12)	0.17 (0.13)	0.15 (0.11)	0.15 (0.10)
External Conflict			0.25 (0.17)	0.31* (0.16)	0.26 (0.18)	0.22 (0.17)	0.26 (0.16)	0.25 (0.17)	0.21 (0.17)	0.23 (0.19)	0.27 (0.17)	0.13 (0.15)
Log (Population)			0.01 (0.05)	0.01 (0.05)	-0.04 (0.07)	0.06 (0.06)	0.01 (0.05)	0.03 (0.05)	0.04 (0.08)	0.001 (0.05)	0.001 (0.05)	-0.02 (0.05)
Log (Area)					0.08 (0.08)							
Log (Openness)						0.27 (0.21)						
Log Global Effect							-0.30 (0.88)					
Aid Per Capita								0.004 (0.004)				
Log (Natural Resources Rents)									0.10 (.17)			
Africa										-0.18 (0.24)		
Europe											0.18 (0.17)	
Asia												0.66*** (0.20)
R <sup>2</sup>	0.12	0.10	0.17	0.13	0.19	0.19	0.18	0.20	0.18	0.18	0.18	0.27
F-Statistic	4.30**	4.06**	3.28***	3.26***	3.24***	3.32***	3.30***	3.17***	3.26***	3.04***	3.06***	4.84***
N	95	95	95	95	95	94	95	95	94	95	95	95

**Note:** \* Significant at 10%; \*\* Significant at 5%; \*\*\* Significant at 1%. Robust Standard Errors in the Parenthesis. There are no significant differences between estimation with dictatorship1 and dictatorship2; therefore we use dictatorship1 in all the sensitivity specifications.

**Table 3.5: 2SLS Regressions for Military Expenditure**

<b>Dependent Variable: Log (Military Expenditure as % of GDP)</b>					
<b>Explanatory Variables</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>
constant	-1.44** (0.67)	-2.26** (0.90)	-2.62* (1.53)	-3.97** (1.90)	-1.28 (1.45)
Dictatorship1	1.55*** (0.52)		1.43*** (0.55)		0.84** (0.41)
Dictatorship2		1.55*** (0.56)		1.49** (0.67)	
Log (GDP Per Capita)	0.20*** (0.07)	0.28*** (0.09)	0.22*** (0.08)	0.30*** (0.09)	0.18*** (0.07)
Civil Conflict			0.09 (0.13)	0.04 (0.15)	0.13 (0.11)
External Conflict			0.17 (0.18)	0.20 (0.20)	0.11 (0.15)
Log (Population)			0.06 (0.06)	0.10 (0.08)	0.001 (0.06)
Asia					0.62*** (0.20)
Adjusted- $R^2$	0.10	0.06	0.11	0.12	0.21
F-Statistic	6.55***	5.96***	3.48***	3.39***	4.40***
N	95	95	95	95	95

**Note:** \* Significant at 10%; \*\* Significant at 5%; \*\*\* Significant at 1%. Robust Standard Errors in the Parenthesis. In 2SLS, the  $R^2$  has no statistical meaning and therefore is omitted from the table. For all of our specifications: For the Sargan test statistic P-Value >0.05, which implies the validity of instruments. Similar comparing the OLS coefficients with those of 2SLS: For Hausman t-statistic, P-Value >0.05 for all cases, which implies no significance difference between OLS and 2SLS estimates in these cases. For the details of the tests values, see table 3A1 in the appendix. We report 2SLS results only for those specifications in which some of the coefficients are significant in case of OLS along with baseline regressions.

## Appendix 3

**Table 3A1: Results of the Sargan Test for Over-identifying Restrictions and Hausman Specification Test**

<b>Secondary School Enrollment Rate</b>				
<b>Specification</b>	<b>Sargan Results</b>		<b>Hausman Results</b>	
	<b>Sargan Chi-Square Values</b>	<b>P-values</b>	<b>Hausman t-Values</b>	<b>P-values</b>
I	2.88	0.578	1.49244	0.139
II	2.208	0.698	1.409005	0.162
III	1.536	0.909	0.481269	0.631
IV	1.056	0.958	-0.29394	0.769
V	0.0192	0.999	-0.66875	0.505

<b>Military Expenditure</b>				
<b>Specification</b>	<b>Sargan Results</b>		<b>Hausman Results</b>	
	<b>Sargan Chi-Square Values</b>	<b>P-values</b>	<b>Hausman t-Values</b>	<b>P-values</b>
I	3.686	0.158	1.577453	0.118
II	2.375	0.305	1.961217	0.053
III	4.218	0.518	1.484924	0.141
IV	3.23	0.666	1.552377	0.124
V	1.5675	0.955	0.897085	0.372

**Table 3A2: List of the countries with main variables**

Country	SSE	ME	DIC1	DIC2	Country	SSE	ME	DIC1	DIC2
Algeria	47.46	2.90	0.79	1.00	Libya	65.54	2.55	0.85	1.00
Angola	12.68	6.00	0.75	1.00	Madagascar	20.62	1.18	0.49	0.80
Argentina	69.05	1.15	0.40	0.33	Malaysia	55.09	2.35	0.27	1.00
Australia	148.46	1.99	0.00	0.00	Mali	12.37	2.18	0.59	0.78
Austria	98.56	1.03	0.00	0.00	Mauritania	16.76	3.36	0.81	1.00
Bangladesh	29.00	1.26	0.48	0.67	Mexico	57.36	0.53	0.52	0.98
Belgium	108.30	1.55	0.01	0.00	Morocco	32.34	3.76	0.87	1.00
Bolivia	64.06	2.10	0.37	0.64	Mozambique	8.06	1.75	0.59	1.00
Botswana	41.20	3.40	0.16	1.00	Oman	36.81	12.99	0.97	1.00
Brazil	69.75	1.60	0.41	0.27	Netherlands	110.20	1.86	0.00	0.00
Bulgaria	93.16	2.81	0.53	0.80	New Zealand	97.09	1.32	0.00	0.00
Cameroon	21.66	1.37	0.81	1.00	Nicaragua	40.41	1.59	0.51	0.69
Canada	97.41	1.45	0.00	0.00	Niger	5.67	1.03	0.65	0.93
Central African Republic	10.96	1.34	0.68	0.80	Nigeria	21.32	0.79	0.56	0.71
Sri Lanka	64.91	3.60	0.20	0.23	Norway	103.02	2.16	0.00	0.00
Chad	9.55	2.61	0.78	1.00	Pakistan	21.16	5.14	0.47	0.48
Chile	73.48	3.64	0.35	0.31	Panama	61.65	1.34	0.42	0.45
China	52.89	2.05	0.87	1.00	Papua New Guinea	11.01	0.96	0.30	0.00
Colombia	55.84	2.98	0.12	0.16	Paraguay	38.92	1.09	0.59	1.00
Congo, Democratic Republic	21.76	1.52	0.86	1.00	Peru	65.81	1.40	0.36	0.58
Costa Rica	51.96		0.00	0.02	Poland	89.03	2.09	0.51	0.78
Denmark	113.02	1.65	0.00	0.00	Portugal	77.98	2.12	0.27	0.55
Dominican Republic	47.99	0.61	0.29	1.00	Qatar	76.30	3.07	1.00	1.00
Ecuador	52.40	2.19	0.29	0.33	Saudi Arabia	80.60	10.80	1.00	1.00
El Salvador	43.59	1.13	0.33	0.69	Senegal	15.51	1.64	0.55	1.00
Ethiopia	15.80	3.75	0.75	1.00	Sierra Leone	15.06	2.28	0.60	0.73
Finland	109.93	1.48	0.00	0.00	Vietnam	50.35	3.53	0.85	1.00
France	97.12	2.85	0.10	0.00	South Africa	85.40	2.18	0.21	0.87
Gabon	36.11	1.58	0.83	1.00	Zimbabwe	28.05	4.12	0.57	1.00
Gambia	19.37	0.80	0.35	1.00	Spain	97.98	1.36	0.26	0.56
Germany	101.28	1.68	0.00	0.00	Sudan	20.23	2.77	0.72	0.80
Ghana	40.67	0.61	0.59	0.91	Sweden	104.02	1.97	0.00	0.00
Greece	87.71	3.87	0.18	0.13	Switzerland	95.77	1.23	0.00	0.00
Guatemala	26.73	0.86	0.42	0.20	Syria	50.10	6.01	0.90	1.00
Guinea	18.82	1.93	0.80	1.00	Togo	24.32	2.55	0.76	1.00
Guyana	84.69	1.05	0.46	0.74	Trinidad and Tobago	73.53	0.43	0.06	0.00
Haiti	15.72	0.09	0.74	0.87	United Arab Emirates	63.29	7.81	0.90	1.00
Honduras	29.85	0.63	0.33	0.53	Tunisia	49.92	1.78	0.82	1.00
India	39.73	2.86	0.07	0.00	Turkey	50.36	3.38	0.16	0.33
Indonesia	44.57	1.37	0.68	0.96	Uganda	11.85	2.54	0.66	0.87

Iran	61.76	2.58	0.81	1.00	Egypt	56.27		0.80	1.00
Ireland	99.77	0.86	0.00	0.00	United Kingdom	90.32	2.91	0.00	0.00
Israel	87.23	9.54	0.03	0.00	Tanzania	6.36	1.43	0.72	1.00
Italy	81.39	1.94	0.00	0.00	United States	92.25	4.08	0.00	0.00
Jamaica	69.14	0.60	0.02	0.00	Burkina Faso	6.79	1.39	0.71	1.00
Japan	96.27	0.96	0.00	0.00	Uruguay	78.78	1.86	0.25	0.22
Kenya	34.52	1.81	0.63	1.00	Venezuela	57.21	1.51	0.12	0.20
Korea, South	84.96	3.03	0.43	0.74	Zambia	17.00	2.09	0.59	0.73
Kuwait	82.38	15.56	0.91	1.00					

**Note:** SSE is the Secondary School Enrollment Rate, ME is the Military Expenditure as % of GDP, DIC1 is our first measure of dictatorship, denoted by Dictatorship1, and DIC2 is the Dictatorship2 used in study. For the detailed of the definitions of variables See Table 3A4 in the appendix.

### 3A3: Regional Divide of Countries

Regions	No. of Countries	List of Countries
<b>Europe</b>	18	Austria, Belgium, Bulgaria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom
<b>Asia</b>	19	Bangladesh, Sri Lanka, China, India, Indonesia, Iran, Israel, Japan, Kuwait, Malaysia, Oman, Pakistan, Qatar, Saudi Arabia, Vietnam, Syria, Turkey, South Korea, UAE
<b>Sub-Saharan Africa</b>	26	Angola, Botswana, Cameroon, Central African Republic, Chad, Congo Democratic Republic, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Madagascar, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Zimbabwe, Togo, Uganda, Tanzania, Burkina Faso, Zambia, Mali
<b>Neo-Europe</b>	4	Australia, Canada, New Zealand, United States of America
<b>Others</b>	30	Algeria, Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Libya, Mauritania, Mexico, Morocco, Nicaragua, Panama, Papua New Guinea, Paraguay, Peru, Sudan, Trinidad and Tobago, Uruguay, Venezuela, Tunisia, Egypt

**Table 3A4: Summary of the Definitions and Sources of Variables**

Variable	Definition	Source
Secondary School Enrollment	Gross Secondary School Enrollment Rate. It is the proportion, regardless of age, to the population of the age group that officially corresponds to the level of education shown, averaged from 1960 to 2010.	World Development Indicators, World Bank
Military Expenditure	Military Expenditure are taken as Percentage of GDP, averaged from 1960 to 2009.	World Development Indicators, World Bank
Dictatorship1	Polity IV project data on Polity=democracy-autocracy. It is constructed such that it ranges from 1(Extreme Dictatorship) to 0(Ideal democracy), averaged from 1964-2009, depending upon availability.	Polity IV, (Marshall and Jaggers, 2000)
Dictatorship2	This indicator is based on regime type by a dummy variable where democracy takes a value 0 while dictatorship takes a value of 1 in a Particular year. It is averaged from 1960 to 2000, so that it becomes an index ranging from 1(Extreme Dictatorship) to 0(Ideal Democracy)	The data on Yearly regime type is taken from Golder (2005)
GDP Per Capita	This is taken as the GDP per capita of the initial available year for a country and is taken in terms of constant 2000 \$.	World Development Indicators, World Bank
Primary School Enrollment	Gross Primary School Enrollment Rate. It is the proportion, regardless of age, to the population of the age group that officially corresponds to the level of education shown, averaged from 1960 to 2010	World Development Indicators, World Bank
Public Spending on Education	Total Public spending on education, as Percentage of GDP, averaged from 1960 to 2010.	World Development Indicators, World Bank
Population	This is taken as the total population of the initial available year for a country from 1960 onwards.	World Development Indicators, World Bank
Openness	It is measured as the sum of imports and exports of goods and services as percentage of GDP. It is averaged from 1960 to 2010.	World Development Indicators, World Bank
Area	Total Area in Square Kilometers	World Development Indicators, World Bank
Aid Per Capita	Total aid Received by a Country. It represents Official Development Assistance (ODA) and other official aid received in constant US dollars, taken as average from 1960 to 2010	World Development Indicators, World Bank
Civil Conflict	This is the sum of Two Dummies. One dummy takes the value of 1, if at least one internal conflict has taken place and it is not intervened by other countries since in 1960 and 0 otherwise. The other takes the value of 1, if at least one internal conflict has taken place and it is intervened by the government of other states. So our measure takes three values, <i>i.e.</i> 0, 1 or 2.	PRIO (Peace Research Institute of Oslo <a href="http://www.prio.nor/">http://www.prio.nor/</a> )
External Conflict	This denotes the conflict between two or more countries. It takes the value 1 if at least one conflict has taken place since 1960, 0 otherwise.	PRIO (Peace Research Institute of Oslo <a href="http://www.prio.nor/">http://www.prio.nor/</a> )
Global Effect	For a given country, this is the average of the military expenditure as Percentage of GDP of the rest of the World. This is calculated from the data used in this study.	Calculated From Data on Military Expenditure
Asia, Europe and Africa	Dummies, takes the value of 1 if a country belongs to a particular Continent, 0 otherwise.	Self-Calculated
Natural Resources Rents	It is measured as the per cent share of natural resources exports (including agricultural and raw material exports, fuel exports, food exports, and ores and metals exports) in GDP, averaged from 1960 to 2000.	World Development Indicators, World Bank
Ethno-Linguistic Fractionalization	It is the probability that the two randomly selected individuals from a given country will not belong to the same ethno-linguistic group. The greater probability implies more ethno-linguistically diverse society.	Easterly and Levine (1997)
English Common Law	It takes a value of 1 if the country's legal origin is based on British common law and 0 otherwise.	La Porta et al. (1999).
Muslim	The percentage of population in a country belonging to Islam in 1999. La Porta et al. calculated these values for 1999.	La Porta et al. (1999).
Urbanization	Average of urban population as percentage of total population from 1960 to 2010.	World Development Indicators, World Bank

**Note:** GDP per capita is taken for the initial available year in order to take into account the implications of human capital for economic growth and thereby, avoid the endogeneity of GDP. Similarly, in most of the applied microeconomic studies, it is shown that more educated people raise fewer children. Therefore, to avoid the endogeneity of population, we take the population of the initial year for each country.

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