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Essays on the Law and Economics of Terrorism in Pakistan

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Essays on the Law & Economics of Terrorism in Pakistan

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Advisors: Prof. Paolo Vanin & Prof. Michael Faure

Dedicated to my Mother, who never went to school, but made sure every morning that I left for school

Acknowledgments

The pursuit of the Ph.D. considers as a solitary endeavor. However, the final product is the result of an intensive collaborative process. It requires the platonic consideration of many scholars and their published research. It may not be possible for me to personally thank every scholar whose work has inspired my dissertation; nevertheless, the bibliography at the end of the thesis could be considered as a tribute to them.

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Summary

This thesis explores the origin of sectarian violence and terrorism, the impact of terrorism risk on the individual's democratic preferences and the deterrence effect of the law enforcement interventions against terrorism and violence over time and space in Pakistan. It comprises of six chapters which fall under the category of 'Illegal Behavior and the Enforcement of Law.' The causes and effects of the illegal behavior (terrorism and violence) have been discussed in the chapters 2 & 3, while, chapters 4 & 5 focus on the enforcement of law against these crimes.

Chapter 2 serves two core dimensions: Firstly, to cater for the historical account of the origin of sectarian violence and terrorism and their temporal variation in Pakistan. Secondly, the construction of these crimes has been presented from the religious market perspective. Adam Smith argues in *The Wealth of Nations* that "... the hazards of government regulation are as real for religion as for any other sector of the economy." Therefore, chapter 2 advocates historical evidence on the hazards of government interventions in the religious market of Pakistan. It explains that rent-seeking behavior on the part of the three players in the religious market, namely, religious sects, government and cold war allies of Pakistan, leads to regular interventions in the religious market. The interventions produce externalities in the form of intolerance in the religious space which slowly and gradually transforms into sectarian violence and terrorism.

The 3rd chapter discusses exposure to the risk of terrorism and its impact on the individual's preferences for liberal democratic values. It explores the following question: Does exposure to terrorism and violence affect democratic opinions and perceptions? Exploiting the individual level socio-economic, religious and political information collected from the 6,000 respondents, the chapter empirically evaluates and presents evidence that acts of terrorism negatively affect preferences towards democratic institutions. The persistent shocks of terrorism decrease the support for the elected legislators while increasing it for the law enforcement institutions like the armed forces.

The deterrence effect of the exogenous intervention by law enforcement institutions on different types of tribal violence is explained in the 4th chapter of the thesis. Approximately, 3% territory in the North-West of Pakistan is ungoverned but constitutionally presented in the lower and upper houses. It has never been exposed to modern law enforcement institutions like the judiciary,

police and military. Thus, it experienced pervasive tribal violence, revenge killings and drug trafficking over the years. The incident of the September 11, 2001 and the consequent US invasion of Afghanistan provided an exogenous shock to the military institution to enter the ungoverned space for the first time. The empirical results show that the intervention significantly decreases different types of violent conflicts in the ungoverned terrain.

Finally, chapter 5 explores criminologists' hypotheses on the displacement and diffusion of crime control benefits to test the displacement and diffusion effects of anti-terrorism interventions. The empirical analysis highlights that anti-terror interventions displace terrorist activities from the treated to the non-treated districts, thus, impose a significant public cost on the neighborhood. Displacement of the terrorist activities from one district to another in response to the negative sanctions imposed by the law enforcement agencies might be one of the reasons for the pervasiveness of terrorism in Pakistan.

With regard to the policy, this dissertation suggests the following recommendations: First, a more comprehensive understanding of the interactions between violent conflicts and the democratization process is needed. The democratic transition can revert to autocracy, if voters are exposed to persistence terrorism risks. Second, an ungoverned territory may not produce negative externalities in the form of organized crimes including terrorism in the short-term, but, exposes to such crimes in the long-term. Therefore, a responsible state needs to invest in the establishment and capacity building of the law enforcement institutions in such territories to avoid future spillovers. And third, effective law enforcement interventions requires not only to deter violence and terrorism in the given geographic space but also their externalities into the neighborhood.

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Chapter 1

Introduction

1.1 Terrorism: Definition

There is neither a legal nor an academic consensus regarding the definition of the term "terrorism." This disagreement is excellently explained by the novelist Gerald Seymour in his book, Harry's Game, in the following words: "one man's terrorist is another man's freedom fighter (Seymour, 1975)." The legal and political approaches adopted over time by different countries toward terrorists/freedom fighters also make it difficult to accept a universal legal definition of terrorism. This time-inconsistency can be summarized in the following words: "yesterday's freedom fighters are today's terrorists and vice versa." Since the main emphasis of this dissertation is on the law and economics of terrorism in Pakistan, it is intuitive to first explain the legal commonalities in the definition of terrorism used by different schools of thought.

The definition of terrorism is a country-specific phenomenon. Each country defines it legally given the types and levels of threats from terrorists. Nevertheless, Schmid (2011) has collected responses to a questionnaire from nearly 100 scholars on the definition of terrorism. After evaluating the questionnaires, Schmid (2011) found 22 key components which are agreed upon by the majority of experts. Space constraints prevent us from explaining all 22 elements of the definition. However, all scholars are agreed upon the following components. These include: "(i) the incident must be intentional; (ii) the incident must entail some level of violence or threat of violence; (iii) the

perpetrators of the incidents must be sub-national actors; (iv) the act must be aimed at attaining a political, economic, religious or social goal; (v) there must be evidence of an intention to coerce, intimidate or convey some other message to a larger audience (or audiences) than the immediate victims; and (vi) the action must be outside the context of legitimate warfare activities."[1]

Similarly, terrorist incidents are classified into two main groups, i.e., domestic and transnational terrorism. Santifort et al. (2013) define them as, "domestic terrorism is home directed and homegrown involving victims, perpetrators, and target venues from a single country; transnational terrorism is a multi-country affair involving victims, perpetrators, or target venues from two or more countries." Given this classification, more than 90% incidents are categorized as domestic terrorism in Pakistan (Global Terrorism Database, 2013). Therefore, the main focus of the dissertation is on domestic terrorism.

1.2 Prevalence and Cost of Terrorism and Violence

Terrorism, violence and conflict are the prevalent phenomena in developing countries. In the second half of the 20^{th} century, more than half of the world experienced violence in one or the other form. Just in the last decade of the 20^{th} century, over 20% countries were exposed to various forms of conflict (Blattman and Miguel, 2010; Powell, 2013). However, in the last quarter of the last century, a peculiar form of spatial-temporal conflict and violence escalated which has produced local spillovers as well as created global negative externalities. It is called 'terrorism.' Scholars argue that terrorism is a form of crime to achieve 'socio-economic, political or religious objectives.'[2]

The Global Terrorism Database (2013) collected information on over 125,000 terrorist attacks (1970-2013), carried out in different regions of the world. More than 266,000 people have died and 355,000 have been wounded in these attacks. The concentration of terrorism is highly skewed towards less developed countries. For instance, around 5% of all the terrorist fatalities since 2000 were in the OECD countries.[3] In monetary terms, "the economic impact of containing and dealing

[1]The Global Terrorism Database (2013) uses these components to define terrorism. It is one of the main sources of the terrorism database used in the empirical analysis of the dissertation.

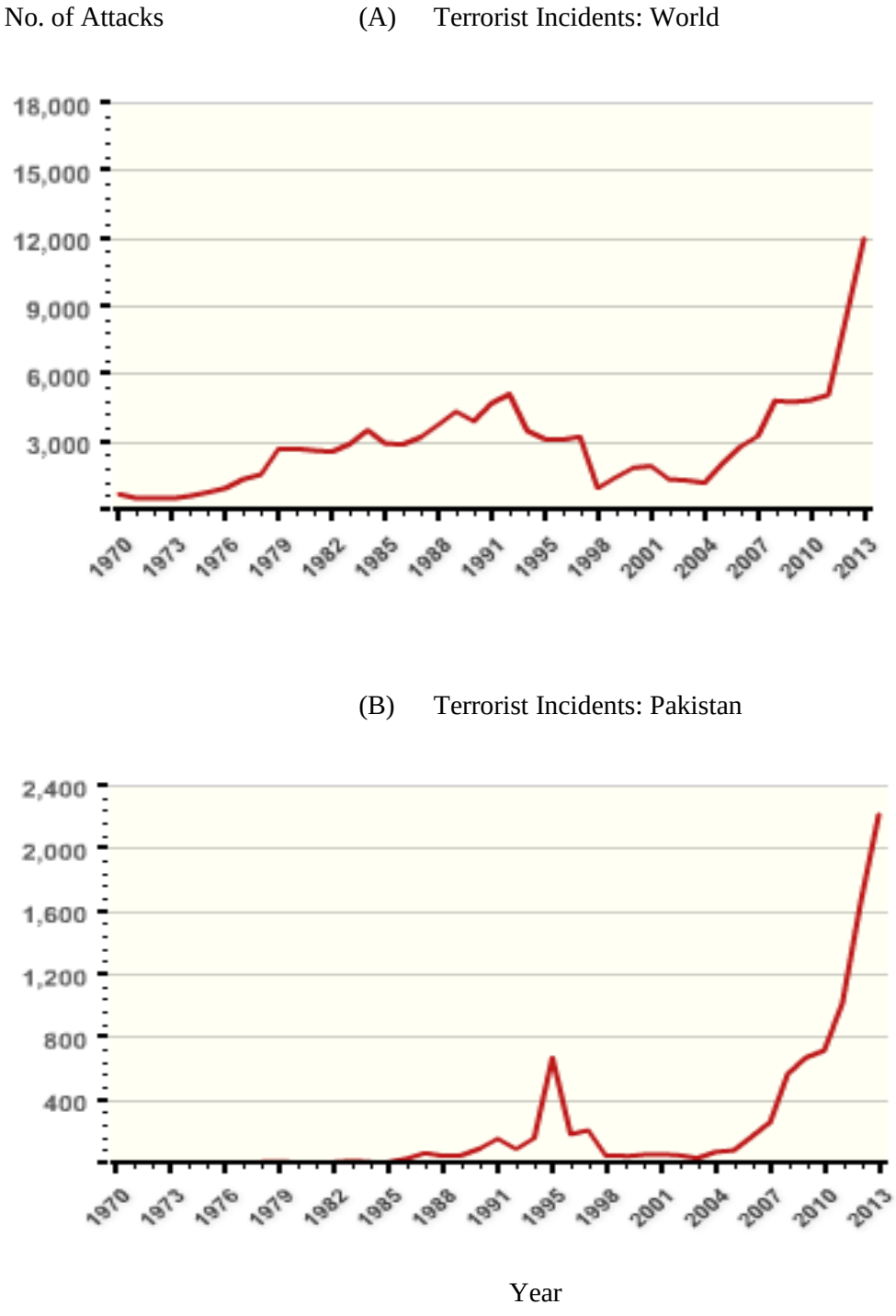
[2]Interested readers refer to Schmid (2011) for the detailed analysis on the definitions and objectives of terrorism.

[3]OECD stands for 'Organization for Economic Co-operation and Development.'

with the consequences of terrorism and violence in 2013 was significant, amounting to US$ 9.8 trillion per annum or 11.3 percent of global GDP. However, the long term indirect costs of terrorism can be 10 to 20 times larger than the direct costs (Global Peace Index, 2014)." Figure 1.1(A) shows the time trend of terrorist incidents in the world between 1970-2013. Since 2004, the trend is positive and increasing overtime, highlighting the pervasiveness of the terrorism threat.

In this context, Pakistan is among the developing countries that have suffered from different forms of violence since the 1970s. Violent conflicts in Pakistan vary from the insurgency of the ethnic separatists, sectarian conflict, organized crime, target killing, extortion and to the deadliest of all, terrorism. The Global Terrorism Database (2013) contains information on 9374 terrorist attacks (1970-2013), a 7.50% of the world's total attacks. After September 11, 2001 (hereafter, 9/11), terrorism and terrorism prevention in Pakistan resulted in the human cost in the form of human casualties of about 50,000-57,000, including 15,700 security personnel; and a monetary cost equivalent to US$ 102.5 billion to the Pakistan economy (Economic Survey, 2013). Figure 1.1(B) visualizes the terrorism trend in Pakistan. Since 2004, the terrorism trend is the same as observed in the rest of the world; however, it is relatively steeper than the world terrorism trend (figure 1.1(A)), which demands the researcher's attention.

Figure 1.1: Terrorist Incidents (Global Terrorism Database, 2013)



1.3 Democracy Vs. Coup D'état in Pakistan

An overview of the structural transformation that took place in the political and legal systems of Pakistan serve two purposes: First, it gives an idea of the political transition between elected representatives and coup d'état which will help a reader in the understanding of chapter 3, and, second, it provides a correlation between political regime and legal/constitutional changes.

Figure 1.2 draws Polity IV trend and highlights the political transition in Pakistan since independence, 1947-2013. It shows the volatile essence of the political infrastructure in Pakistan. In the figure, red color denotes special polity conditions, i.e., neither autocracy nor democracy; green color indicates transitory phase of the polity after a major shock;[4] blue color shows the trend of a polity score and a vertical dotted line indicating the end of the Cold War (1991).

Furthermore, the bold black 'Xs' illustrate a military or military-backed forcible ouster of an established democratic government. So far, three successful coup d'état adventures have been carried out in Pakistan (1958-1971, 1977-1988 and 1999-2008). Thus, the military institution had imposed the *Martial Law* and ruled the country for about three-and-a-half decades since 1947. Similarly, the elected representatives have also governed the country for the same number of years as military did, but in bits and pieces. The elected parliament never completed its legitimate period of five years governance until 2008, when, the democratic government successfully finished its tenure in 2013.

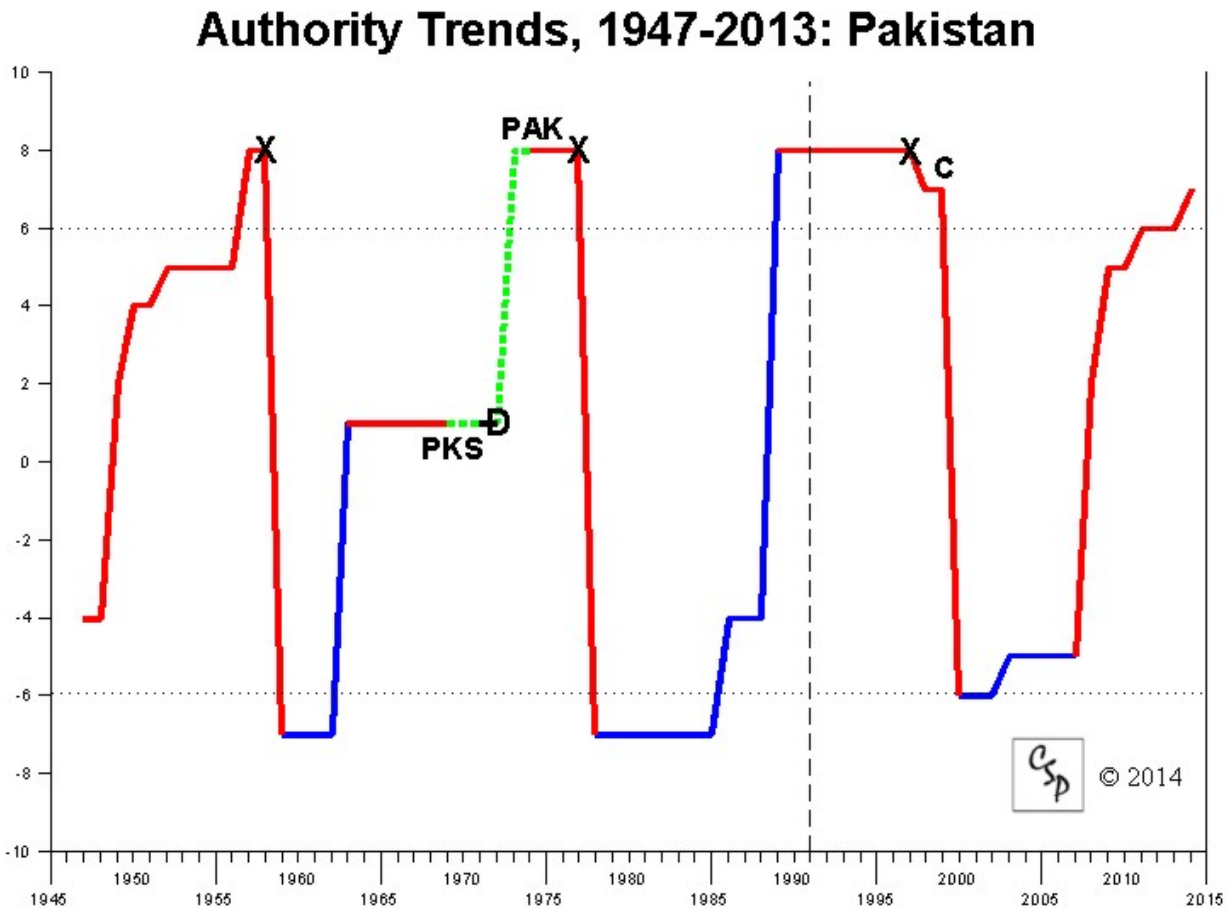
The hide-and-seek attitude between the parliament and military institutions to govern the country has also repercussions on the development of the legal system of Pakistan. In the first coup d'état (1958), the military chief had imposed the martial law and abrogated the constitution of 1956, described it as "unworkable" and full of "dangerous compromises." The second military dictator (1977) temporarily suspended the 1973 constitution and made significant numbers of amendments in it. Specifically, he is considered a man behind the Islamization of the 1973 constitution through amendments and presidential orders, which has produced long-lasting externalities and affected the social, religious, economic and political space of Pakistan (see chapter 2). The third military ruler (1999) again declared a state of emergency, suspended the 1973 constitution and assumed power

[4]Late 1971 was the period when East Pakistan of that time (now Bangladesh) had been given the independence.

as Chief Executive.

Analogously, over the years, the independence of judiciary is always undermined, specifically, under the coup d'état. The Supreme Court of Pakistan had validated the imposition of each and every martial law, under the "doctrine of necessity." Each and every dictator made constitutional amendments to legitimize and consolidate its coup. The CIRI human rights data project (CRRI, 2015) shows that the judiciary of Pakistan has been either 'not independent' or 'partially independent' over the years.

Figure 1.2: Political Transition (Marshall, 2015)



Note: Polity Score ranges from -10 to +10

Full autocracy = -10

Full democracy = 10

1.4 Description of the Problem and Purpose of this Dissertation

Considering the significant welfare effects of violence, conflict and terrorism in Pakistan, this dissertation explores the origin of violence in the country, its causal impact on democratic preferences, and an evaluation of military strategies to counter terrorism. Specifically, this dissertation examines in detail the following four aspects: (i) it provides a historical overview and an alternative explanation to the existing debate on the origin of sectarian violence and terrorism; (ii) it tests how democratic preferences are shaped by a persistent risk of terrorism and violence; (iii) it analyzes the deterrence effect of a law enforcement institution (military) on terrorism and violence in a specific area which is ungoverned and never exposed to modern-day economic and political institutions; and (iv) it spatially/geographically examines the displacement vs. diffusion effects of terrorism prevention measures for terrorist incidents. In the following sub-sections, we will further explore these questions, their theoretical relevance, empirical frameworks and summary of the derived results.

Chapter 2: The Production of Terrorism in Pakistan: A Historical Perspective

Behavioral, sociological and the political economy literature identifies various socio-economic and political factors which are associated with terrorism and violence in different geographic regions and time periods. On the one hand, Gurr (1970) puts forward the idea of a 'relative deprivation,' where terrorism and conflict start as a result of discrepancies related to the distribution of economic resources. On the other hand, Tilly (1978) associates violence and terrorism to the political and institutional disorder. A significant amount of empirical evidence is available in support of the two hypotheses that are compiled in a systematic way by Krieger and Meierrieks (2011).

Similarly, the prevailing debate about the origin of terrorism in Pakistan is focusing on the religious aspect, that is, sectarianism. Therefore, sectarianism is comprehensively analyzed through the theories and models of sociology, anthropology, political science, law and international relations (Zaman, 1998; Nasr, 2000a,b; Stern, 2000; Nasr, 2002; Haleem, 2003; Khan, 2003; Abbas, 2004; Nasr, 2004; Grare, 2007a; Malik and Others, 2007; Palmer and Palmer, 2007; Waseem et al., 2010; Murphy, Eamon, 2012; Riedel, 2012). Considering this debate, chapter 2 provides a historical

background of sectarian conflict and terrorism in Pakistan and examines economic incentives that motivate and mobilize different players to produce sectarian violence, either directly or indirectly over time.[5] It also gives an alternative explanation to the origin of terrorism in Pakistan from an economic perspective, i.e., through the framework of the religious market.

To analyze the above question, chapter 2 proceeds as follow: Firstly, it will define an Islamic religious market and argue that monopolistic competition exists in the religious market of Pakistan. The number of religious sects and sub-sects are increasing over time; however, the market represents a monopolistic competition where sects have unequal shares in the market. Therefore, it has been frequently regulated over the years by both democratic and non-democratic governments (ARDA, 2014). Secondly, it is documented that the government regularly intervened over time in the religious market through legislation and amendments. Thus, historical and empirical evidence has been provided that the main intent behind religious market interventions was the appropriation of rent by three players, namely, the religious sect(s), government and cold war allies of Pakistan. Finally, it is argued that the rent backed interventions in the religious market produced negative externalities in the form of religious intolerance and confrontation between and within sects and sub-sects. Over the years, these externalities have appeared in the form of sectarian violence which slowly and gradually transformed into the extreme form of conflict, that is, terrorism.

Chapter 3: Terrorism Risk and Democratic Preferences in Pakistan

Similarly, behavioral, sociological and the political economy literature also analyzes the impact of exposure to different types of conflicts on an individual's political, religious, risk, social and time preferences and behavior. For instance, the victims of violence experience greater political awareness and political participation (Bellows and Miguel, 2006, 2009; Blattman, 2009; Bateson, 2012); show personal growth and collective action (Wood, 2003; Tedeschi and Calhoun, 2004; Cramer, 2006); demonstrate weak social fabric, interpersonal trust and collective work (Colletta and Cullen, 2000); and display more altruistic behavior towards their neighbors, are more risk-seeking and have higher discount rates (Bellows and Miguel, 2009; Voors et al., 2012).

[5]The historical analysis of terrorism and sectarian violence will help the readers in the analysis of the remaining chapters.

Theoretically, two strands of economic literature explain the shift in preferences cause by exogenous shocks. The first specifically focuses on the political transition. Since Lipset (1959) 'modernization theory,' it has been argued that a positive association exists between economic recessions and democratic change (Huntington, 1993; Haggard and Kaufman, 1995; Acemoglu, 2006). A theoretical explanation that fits our framework is the theory of political transition by Acemoglu and Robinson (2001). It explains that bad economic conditions lower the opportunity cost of revolt, which incentivizes the state to provide rights in equilibrium. Thus, economic recession follows by regime change or political transition. Similarly, Acemoglu and Robinson (2001) theory is empirically supported in the work of (Brückner and Ciccone, 2011; Ramsay, 2011). It has been shown in the previous sections that terrorism imposes significant economic costs which may affect preferences regarding regime change.

The second strand of theoretical framework emphasizes on the phenomenon of endogenous preferences. It deviates from the orthodox economic theory where preferences are exogenous, at least in the short-term (Choi and Bowles, 2007; Netzer, 2009). For instance, in the words of Voors et al. (2012) "the notion of endogenous, or context dependent, preferences gnaws at the foundations of standard welfare theory." Interestingly, the idea of endogenous preferences is widely recognized in other fields of social sciences. For example, in psychology, it is accepted that temporary shocks can have lasting effects on individual's different preferences (Carmil and Breznitz, 1991; Punamäki et al., 1997; Tedeschi and Calhoun, 2004). Since, economic behavior like consumption, saving and investment depend on risk preferences, thus, the notion of endogenous preferences has significant and long-lasting effects on the development process (Voors et al., 2012). In the context of chapter 3, the theory of endogenous preferences is also relevant as we treat democratic preferences endogenous to persistent terrorism shocks.

Given these frameworks, chapter 3 aims to explain cross-sectional democratic preferences in response to the terrorism risk, while exploiting the socio-economic, religious and political information collected through a micro survey of 6,000 respondents from the four provinces across Pakistan. The individual's information is merged with district-level terrorist incidents to estimate the expected effect of terrorism risk on the individual's democratic preferences. Democratic support is measured by two indicators, i.e., preferences on the role of parliament vs. a military/dictator institution. A

perfect substitution has been observed in these institutions in the governance history of Pakistan. Thus, it is intuitive to consider the support for these institutions as a proxy for democratic behavior.

The empirical analysis shows that persistent terrorist attacks are more likely to decrease support for a democratic government while they increase support for the unconstitutional role of the military institution. The results are robust, thanks to the heterogeneity of samples based on gender, urbanization and education; endogeneity considerations; and inclusion of socio-economic and religious controls. Analyzing terrorist events by geographic distance (instrumental variable) from the rough terrain of the Pak-Afghan border (the Durand Line) suggests that there is a causal link in the correlation between exposure to terrorism and reduced support for democratic values.

Chapter 4: Deterrence Through Monopolized Violence: The Frontier Crimes Regulation of Pakistan

The discussion and findings in chapter 3 lead to another relevant issue: the impact of the law enforcement institutions on terrorism and violence. Thus, chapter 4 tests the deterrence effect of the law enforcement intervention on terrorism and violence in the previously ungoverned space of the Federally Administered Tribal Areas (FATA) in the North-West of Pakistan.

In this context, several theories have been presented and tested in the institutional economics literature, in order to understand the choice of (un)governed territories during colonial times. That is, why some institutions were put in place, while others were not. These theoretical frameworks include: (i) The initial set of institutions and the availability of resources and the cost of extracting these resources (Diamond, 1997; Gallup et al., 1999; Acemoglu et al., 2001; McArthur and Sachs, 2001). Specifically, it was cost effective and optimal from the perspective of the British colonizers to set up extractive institutions in some areas; (ii) Difficult geography (Herbst, 2014), rough terrain (Fearon and Laitin, 2003), tribal culture and history (Ginsburg, 2011; Benson and Siddiqui, 2014) and the military advantage with the indigenous groups made complete colonization costly and impractical (Fearon and Laitin, 2003; Nunn and Puga, 2012); (iii) And it was easier and more efficient to maintain law and order in some regions through the indirect governance which complies with the local culture, tradition and norms (Scott, 2009; Padr I Miquel and Yared, 2012).

Similarly, public choice literature analyzes the interaction between government and armed

groups. Weak states often face armed conflict that pose a threat to the state and its control over territory. For instance, Powell (2013) studied the interaction between a state and non-state actors through an infinite horizon stochastic game where both parties negotiate with each other. Discussing different carrot and stick approaches of a government towards rebellion, the model shows that in equilibrium, the government always pushes for monopolize violence when it possesses "coercive power" against the opponent. A state rationalizes that coercive power is the only way to weaken the opposition by lowering its return to fighting.[6] Analogously, in the principal-agent model, the principal has always the coercive power which lowers the agent reservation value. The agent anticipates that principal can use its coercive power to punish him.[7]

Although, Krieger and Meierrieks (2011) discussed that different socio-economic and political factors play their roles in the rising violence and terrorism in the world, nevertheless, Weber (1946) explained that those territories where law enforcement institutions are weak and do not have the monopoly over enforcement rights are relatively more exposed to different types of conflicts. In other words, if a state lacks Max Weber's famous proposition of a state capacity, that is, "a human community that (successfully) claims the monopoly of the legitimate use of physical force within a given territory," the probability of rebellion is high in that country (Powell, 2013).

Considering the above theoretical and empirical literature on ungoverned territories and monopolize violence, before 9/11, state writ (institutions) in FATA was limited to the provision of a few public services like education, health and a road network. It was ruled under the British formulated Frontier Crimes Regulation (FCR) of 1901, a system under which governance is largely left under the control of tribal chiefs and elders. It lacked modern law enforcement institutions like the judiciary, police and military. Consequently, over the years, FATA was transformed from the sanctuary of criminals to the heaven of terrorists. In 2004, for the first time in the history of the country, a military institution established its infrastructure in FATA to police the border between Afghanistan-Pakistan (the Durand Line). The intervention was limited to a few districts and exogenous to both different types of tribal conflicts and terrorism. Therefore, chapter 4 tests the

[6]For further reading on the coercive power and bargaining between government and armed group, interested readers refer to (Fearon, 2007; Powell, 2012).

[7]The coercive power in the principal-agent model is studied by Acemoglu and Wolitzky (2011) in the labor market when the principal (slave owner) can buy guns which decrease the agent's (slave's) reservation value, that is, lower slave's payoff of shirking or trying to run away.

deterrence effect of the exogenous variation in the intervention on different types of tribal conflicts and terrorism in FATA.

The intervention can be classified a so-called natural or quasi-experiments, experiments which are delivered by the real world conditions (Angrist and Krueger, 2001). Thus, we exploit this experiment through Difference-in-Differences (DID) identification design to analyze the impact of a law enforcement institution on tribal violence and terrorism in the previously ungoverned space. Utilizing the district-level monthly longitudinal dataset on different forms of tribal violence and terrorism incidents over the period 2001-2013, the empirical results indicate that the intervention significantly decreases tribal conflicts in treated districts. Analogously, the empirical analysis shows that the intervention has a deterrence effect on terrorist attacks in the treated group.

Chapter 5: The Spatial Analysis of Terrorism in Pakistan

Chapter 4 directs us to the last question of the study, whether or not 'distance matters' for offenders to commit a crime. Criminologists believe that offenders commit crimes in geographic proximity that are familiar to them in the daily routine. These spots are along the routes between their homes and the places they regularly work, shop and enjoy recreation. Offenders respond to sanctions and incentives impose through crime preventive measures. Criminals not only switch their targets but also space of opportunity. The spillover of situational crime prevention is called displacement and diffusion of crime control benefits (Felson and Cohen, 1980; Brantingham and Brantingham, 1984, 1993, 1995). Applying the idea of spatial displacement and diffusion from the criminology to terrorism, chapter 5 tests the geographic behavior of terrorists in response to the law enforcement intervention.

The scholarship on the economics of terrorism and counter terrorism significantly developed in the post 9/11 scenario. However, the history of research on the (in)effectiveness of terrorism prevention efforts goes back to the late 1970s. Landes (1978) utilized the rational choice framework of Becker (1974) on *the economics of crime and punishment* to study hijacking events in the United States.[8] He analyzed that the installation of metal detectors in US airports successfully deterred

[8]For further understanding on the analysis of terrorism and counter terrorism through rational choice theory, interested readers refere to (Sandler et al., 1983; Im et al., 1987; Caplan, 2006; Enders and Sandler, 2011).

airplane hijackings. Similarly, Enders and Sandler (1993) observed that terrorists act rationally while allocating limited resources among alternative objectives. Therefore, the installation of the metal detectors increased other types of hostage incidents through substitution/displacement effect, thus, caused a high number of kidnappings and assassinations.[9,10] Furthermore, anti terrorism strategies may create a paradox between short and long term effectiveness. In the short run, terrorism prevention raises the deterrence level, but may diminish it in the long run through a non-discriminatory approach which creates a public cost in the form of civilian casualties and destruction of social, political and economic infrastructure and capital (De Figueiredo Jr and Weingast, 2001; Rosendorff and Sandler, 2004; De Mesquita, 2005).

Political economists have also studied the spatial characteristics of terrorism and civil conflicts. For example, Townsley et al. (2008) observed that terrorist incidents are concentrated over space and time in Iraq. They argue that attacks would cluster because it is an efficient way to operate; efficiency, based on the least effort principle, suggest that combatants would conduct attacks within close proximity to one another to decrease their probability of apprehension while maintaining familiarity with the target location. Similarly, Braithwaite and Li (2007) observed the hot spots of transnational terrorism in different regions of the world. The study showed that countries which are in the range of hot spots are expected to experience high terrorist attacks in the near future.

Immediate spatial displacement of terrorism could be one of the reasons for the continuous rise in terrorism despite the terror prevention interventions in Pakistan. To elaborate it further, a policy intervention in a specific spatial unit raises the opportunity cost of terrorist activities; therefore, it could displace terrorism to neighborhoods where the opportunity cost of terrorism activity might be low. Similarly, an intervention can increase the opportunity cost in the given district and neighborhood simultaneously, thus, decreasing total terrorism. These outcomes of an intervention are called *displacement* and *diffusion of terrorism control benefits*, respectively. Moreover, non-discriminatory intervention often results in the collateral damage of innocent individuals; for example, military intervention through a non-discriminatory approach creates a public cost in

[9]For the policy induced substitution among potential terrorist targets, interested readers refer to (Im et al., 1987; Frey and Luechinger, 2003; Enders and Sandler, 2004; Anderton and Carter, 2005; Bier et al., 2007).

[10]De Mesquita (2008) provides a comprehensive overview on the political economy of terrorism and counter terrorism.

the form of civilian casualties and destruction of social, political and economic infrastructure, it attracts new recruits to terrorists, which, in turn, can result in a wider conflict. It is called the *vengeance/backlash effect* in the economics of terrorism.

The analysis in chapter 5 uses district level variation in terrorism incidents and terrorism prevention interventions (2001-2012) to empirically test the above propositions; specifically, to examine the net effect (displacement vs. diffusion) of the law enforcement interventions. Under different econometric specifications, regression results show that the terrorism prevention efforts cause substantial and significant displacement to the nearest neighboring districts. The results further show significant spatial correlation among terrorist incidents, which illustrates that terrorism events are clustered, not distributed randomly. The findings of this chapter provide evidence that terrorism prevention generates a public cost on the neighborhood.

1.5 Significance of the Dissertation

After the tragic incident of 9/11, Pakistan is among the two countries which have been highly exposed to asymmetric warfare like sectarian violence and terrorism.[11] The pervasiveness and intensity of terrorism in Pakistan has produced two different views. Some scholars believe that Pakistan is a failed state while others argue that Pakistan is the most resilient country in the world. For a citizen of one of the front-line states (Pakistan) and resident of one of the front-line provinces (Khyber Pakhtunkhwa) against 'War on Terror,' it is always a temptation to explore different dimensions of violence and terrorism including their origins and consequences in Pakistan.

As mentioned in the previous section, the main purpose of this dissertation is to answer four different but related questions regarding terrorism and violence in Pakistan. However, the scope of this research is neither to establish nor discount other socio-economic and political reasons which may cause terrorism and violence in Pakistan. Analogously, this thesis does not discuss the positives and negatives of a democracy. It only provides an explanation of how democratic opinions are shaped by persistent shocks of terrorism risks. Furthermore, it does not discuss that the use of military force is the only and viable option against terrorists. It only explains its deterrence effects

[11] The first one is Afghanistan.

in the current scenario of Pakistan where the civil law enforcement agencies (police) are highly inefficient.

Regarding the value addition of this dissertation, it is likely that this is the first attempt to comprehend the religious origins of violence and its subsequent consequences on democratic values in Pakistan. In addition, it also evaluates the deterrence effects of military backed counter-terrorism strategies. Therefore, this dissertation which answers few questions and raises others will help to move forward the literature on the law & economics and political economy of terrorism in Pakistan.

In general, each chapter of the thesis is a distinct contribution and provides a different perspective on violent conflicts including sectarian violence and terrorism. These different perspectives relate to the fields of political economy, economic psychology, criminology, law and institutional economics. Taken together, these chapters should provide some new insights into the complex world of the democratic preference formation, the role of institutions in an ungoverned space and the deterrence effect of the law enforcement intervention in the geographic neighborhood.

Chapter 2

The Production of Terrorism in Pakistan: A Historical Perspective

2.1 Introduction

The prevailing debate about the origin of terrorism in Pakistan is focusing on the religious aspect, that is, sectarianism. The growth of sectarianism in Pakistan is comprehensively analyzed through the theories and models of sociology, anthropology, political science, law and international relations (Zaman, 1998; Nasr, 2000a,b; Stern, 2000; Nasr, 2002; Haleem, 2003; Khan, 2003; Abbas, 2004; Nasr, 2004; Grare, 2007a; Malik and Others, 2007; Palmer and Palmer, 2007; Waseem et al., 2010; Murphy, Eamon, 2012; Riedel, 2012). A political scientist, Nasr (2000b) explains sectarianism in the following words "sectarianism in the Pakistani context refers specifically to organized and militant religiopolitical activism, whose specific aim is to safeguard and promote the sociopolitical interests of the particular Muslim sectarian community, Shi'i or Sunni, with which it is associated. Its discourse of power promises empowerment to that community in tandem with greater adherence to Islamic norms in public life, as the religious sources and authorities of that community articulate them. These goals are to be achieved through mobilization of the sectarian identity in question and the marginalization of the rival sectarian community, largely through prolific use of violence." In this context, the aim of this chapter is to provide a historical background of terrorism in Pakistan and examine economic incentives that motivate and mobilize different players to produce violence, either directly or indirectly over time. The players include sects and sub-sects of Sunni and Shi'ite from the religious institutions, democratic and non-democratic governments from the political market

and foreign allies from the international relations' perspective.

While focusing explicitly on economic incentives, this chapter provides an alternative explanation to the above debate on the origin of sectarian conflict and terrorism in Pakistan. We use the market perspective of religion as an analytical framework to explain the economically motivated interactions among different players, which led to the production of sectarian violence and terrorism over time.[1] We argue that the religious market framework provides useful insights to the origin of sectarianism and terrorism, as a monopolistic market structure exists to produce different religious products in Pakistan.

To achieve the final outcome, i.e, origin of terrorism, the analysis will proceed in the following sequence: Firstly, it will define an Islamic religious market in the context of Pakistan. Secondly, it will document that the government regularly intervened over time in the religious market through legislation and amendments and it will unearth the main economic reason behind these interventions. Finally, we analyze the externalities of interventions in the form of sectarian violence and terrorism.

Since the seminal contribution by Iannaccone (1992), researchers have started to consider religious practices as rational and adherents as utility maximizers. For example, religious organizations provide consumption smoothing technologies to followers (Hungerman, 2005; McCleary and Barro, 2006; Dehejia et al., 2007); greater levels of religious participation are associated with greater levels of reported happiness (Johnson et al., 2002); a lower probability of committing crimes or engaging in risky behavior (Gruber and Hungerman, 2006); and greater levels of educational attainment (Iannaccone et al., 1997). However, just like other economic markets, the religious market is also exposed to government interventions over the years.

To proceed with the analysis in the context of economic incentives in a religious market framework, it is intuitive to put some light on the dynamics of religion in Pakistan. Pakistan is a predominantly religiously homogeneous country, where approximately 96% of the population is Muslim (ARDA, 2014). On the one hand, religion was used as an identity in the creation of Pakistan in 1947, assumed to provide norms, morality, social legislation and an inner constitution of

[1] A religious market refers to a place where religious producers interact with consumers within a market framework. Economics of religion frames religion as a product and those who practice with any particular religion as a consumer (Sherkat and Wilson, 1995).

ethics and compliance to the nation. Thus, it has played and continues to play a significant positive role over the years. Social scientists acknowledge this role in the following words "Pakistan: A resilient/hard country (Stewart, 2012; Jaffrelot, 2015)." On the other hand, religion became an institution of rent-seeking for legislators, clergies, military bureaucracy and cold war allies of Pakistan. To appropriate rent, religion is continuously regulated over the years by both democratic and non-democratic governments (ARDA, 2014).[2] A significant number of constitutional articles is related to the structure of the religious market. Still, the market is enriched over space and time with different sects and sub-sects within the Muslims' faith.

Government regulations in the religious market are not a new phenomenon. They have been frequently practised throughout history. In the contemporary world, on one side, there are countries where a specific religion has been given the monopoly power; while on the other side, a large number of states treat all religions with homogeneous rules and regulations (Yang, 2010). Yang (2010) stated that 84 countries have declared an official religion while 56 nations treat all religions equally. Pakistan belongs to the former category of countries, where one religion has been given an official status. According to the study of Grim and Finke (2006), the value of the *Government Regulation Index of Religion* in Pakistan was $\frac{8.6}{10}$ in 2003.[3] An extensive literature is available on the effects of government (de)regulations on religious participation, religious activities, human behavior and welfare effects (Posner, 1987; Olds, 1994).[4]

The following regulations are considered the most significant in Pakistan from the religious market perspective. In the education sector, the government has introduced the *Islamic Study* as a compulsory course and invested in the religious schools (Madrassas). On the fiscal side, Islamic mandatory charity and taxes (Zakat and Ushr) were imposed. In the judiciary institution, punishment for serious crimes, including theft, robbery and rape under the common law were replaced by so called *Islamic punishment*. Nevertheless, the explanation of the regulations under the Islamic Jurisprudence (Sharia Law) is skewed towards the Sunni (Hanafi'ite) school, which

[2]Islam is the official religion of Pakistan. There are various articles and clauses in the constitution regarding Muslim's faith, practice and preaching of the religion (Government of Pakistan, 2014).

[3]The Grim and Finke (2006) study sample size consists of 196 countries. The larger value of the *government regulation index of religion* implies a higher number of regulations.

[4]Levin (2010) provides a comprehensive literature review about religious activities, health outcomes and well-being.

differs on social, religious and economic aspects from the Shi'ite school, one of the major players in the religious market.[5]

It is discussed that the main intent behind interventions in the religious market of Pakistan is the appropriation of rent by different players. Religious sects, specifically, the Sunni denominational Deobandi received rents from the government in the form of investment in its religious schools, mosques and extended its role to the judicial institution. In return, the sect supported the prevalent government(s), specifically, the coup and helped (in different forms) Afghan fighters against the former Soviet Union invasion of Afghanistan. The governments, specifically, the dictator, backed the regulations to strengthen their domestic legitimacy. And cold war allies provided funds to the government to utilize its role in the cold war through religious institutions. For instance, the government provided support to the Afghan fighters against the invasion of the former Soviet Union with the financial, strategic and technical support of the allies. However, the rent backed interventions in the religious market produced negative externalities. Over the years, the externalities are realized in the form of sectarian violence which slowly and gradually transformed to the extreme form of conflict, that is, terrorism.

The remainder of the chapter proceeds as follows: Related literature on the causes of terrorism is discussed in section 2.2. Section 2.3 discusses the historical evolution and structure of the religious market in Pakistan. The constitutional articles and resultant regulations are explained in section 2.4. Section 2.5 deals with the unintended hazards of government interventions. Finally, section 2.6 concludes the chapter.

2.2 Related Literature on the Causes of Terrorism

The determinants which could affect the cost-benefit matrices of a terrorist include economic, political, institutional and demographic factors. In this context, several hypotheses have been presented and tested to understand the root causes of terrorism (Krieger and Meierrieks, 2011).[6]

[5]The *Hanafi'ite* school is one of the three schools of law within the Sunni Islam. Ibn-i-Khaldun defines the Sunni schools as three: the Hanafi'ite school representing reason, the Zahir'ite school representing tradition and a middle school encompassing the Shafi'ite, Malik'ite and Hanbal'ite schools (Goldziher, 1971).

[6]Krieger and Meierrieks (2011) provide a comprehensive overview and empirical evidence on different hypotheses that link socio-economic and political factors to terrorism.

These hypotheses are briefly explained below while references in support of, and against of them are given in table 2.1.

The most extensive research has been carried out on the 'economic causes' (poverty and inequality) of terrorism. Are poor societies more prone to terrorists? Conflicting evidence about economic causes has been provided while considering different time periods and regions. Political economists have also studied the role of 'modernization' in the promotion of terrorism. They believe that modernization like new forms of lifestyles and communication, urbanization and higher population density may attract more terrorist attacks, because, it may challenge traditional elements of a society. Again, mixed empirical support has been found about modernization being a trigger for terrorist activities. This literature further focuses on the role of 'liberal vs. non-liberal' economic and political institutions as determinants of terrorist incidents. Liberal democracies are less prone to terrorism as they provide an alternative way of raising a voice to disenfranchised segments of a society. The empirical results of different studies show that once the regression controls for the liberalization component of the 'institutional order,' the effect of economic conditions becomes insignificant on terrorism. Related to the liberalization idea, studies found a non-linear relationship between the type of political set up 'democracy vs. dictatorship' and terrorist activities. Nevertheless, inconclusive results have been observed. Furthermore, the roles of 'ethnic and religious fractionalization' have also been studied, but an ambiguous effect on terrorist incidents has been found. Lastly, significant contagious effects of terrorism with both space and time have been observed, that is, terrorist activities cluster over space and time. In short, inconclusive evidence has been provided in the literature that terrorism is more likely to emerge in highly populated, non-democratic and unstable countries.

Similarly, political economists provide facts and figures that terrorism in Pakistan has its root in the 'identity conflict,' including both ethnic and religious fractionalization. However, few recent studies have found that 'economic conditions' also matter for terrorists in Pakistan.

Table 2.1: Determinants of Terrorism

Hypothesis	Potential Determinant	Positive Effect	Negative Effect
Economic Deprivation	Economic Conditions	Krueger and Malečková (2003); Kurrild Klitgaard et al. (2006); Plümper and Neumayer (2010); Freytag et al. (2011)	Blomberg and Hess (2005); Azam and Delacroix (2006); Lai (2007); Azam and Thelen (2008)
Modernization Strain	Economic Performance, Population Dynamics	Krueger and Malečková (2003); Burgoon (2006)	Azam and Delacroix (2006); Azam and Thelen (2008)
Institutional Order	Economic-Political Institutions, Education	Eubank and Weinberg (2001)	Krueger and Malečková (2003); Burgoon (2006); Piazza (2008); Plümper and Neumayer (2010)
Political Transformation	Political Stability	Lai (2007); Piazza (2008)	Eubank and Weinberg (2001)
Identity Conflict	Religion, Minorities	Piazza (2008)	Blomberg and Hess (2005)
Global Order	Economic Integration, International Politics	Freytag et al. (2011); Burgoon (2006)	Blomberg and Hess (2005); Azam and Delacroix (2006); Kurrild Klitgaard et al. (2006); Azam and Thelen (2008)
Contagion	Geography, Time	Blomberg and Hess (2005); Enders and Sandler (2005); Lai (2007); Piazza (2007); Plümper and Neumayer (2010)	
		Literature on Pakistan	
Economic Deprivation	Economic Conditions	Nasir et al. (2011); Shahbaz (2013)	
Institutional Order	Economic-Political Institutions, Education	Nasir et al. (2011)	
Identity Conflict	Religion, Minorities	Zaman (1998); Nasr (2000b); Stern (2000); Grare (2007b); Asal et al. (2008); Fair et al. (2010, 2013)	

Indicators used for the hypothesis: *Economic Deprivation:* Per capita GDP, poverty or inequality; *Modernization Strain:* Inflation, unemployment, GDP growth, urbanization, population growth, size, structure or age; *Institutional Order:* Economic freedom, property rights protection, civil liberties, political rights, literacy or school attainment; *Political Transformation:* Regime stability, conflicts or civil war; *Identity Conflict:* Religious fractionalization, ethnic or linguistic fractionalization; *Global Order:* Trade openness, terms of trade, FDI, foreign aid, incidences of conflict or alliances; and *Contagion:* Spatial, climate, elevation, latitude or temporal proximity to terrorism.

2.3 Religious Market

This section will discuss the first part of the research question, that is, the nature, structure and composition of the religious market in Pakistan.

2.3.1 The Nature of the Religious Market: Smith Vs. Hume

Should the government go for a free or monopolized religious market? This question was raised for the first time by Adam Smith in his famous book *The Wealth of Nations (1776)*. Smith inquired whether optimality in the religious market requires establishing (state funded) monopoly churches or competitive religions. Smith advocated a free religious market and argued that the objective of self-interest motivates a religious scholar (the clergy) as it does in secular markets and firms. He further added that the benefits of competition, the burdens of monopoly and the hazards of government regulations are as real in religion as in any other sector of the economy. Smith holds:

"The teachers of each sect, seeing themselves surrounded on all sides with more adversaries than friends, would be obliged to learn that candor and moderation which are so seldom to be found among the teachers of those great sects, who [as a result of legal entry restrictions facing competing sects] ... see nothing round them but followers, disciples and humble admirers. The teachers of each little sect find themselves almost alone, and would be obliged to respect those of almost every other sect; and the concessions which they would mutually find in both convenient and agreeable to make one to another might in time, probably reduce the doctrine of the greater part of them to that pure and rational religion, free from every mixture of absurdity, imposture or fanaticism ... This plan of ecclesiastical government, or more properly, of no ecclesiastical government, [would tend to be] productive of the most philosophical good temper and moderation with regard to every sort of religious principle [p. 332; emphasis added] (Smith, 1845)."

Smith presented an argument that if more than one religious sects compete with each other for resources and members, the clergies of each sect will challenge the adversaries and provide the high quality of moral standards and beliefs at low prices. Furthermore, Smith emphasized the importance of a larger number of sects like a different number of producers in a secular market. He mentioned the importance of a larger number of small sects as:

"The interested and active zeal of religious teachers can be dangerous and troublesome only where there is either but one sect tolerated in the society, or where the whole of a large society is divided into two or three great sects; the teachers of each acting by concert, and under a regular discipline and subordination. But that zeal must be altogether innocent, where the society is divided into two or three hundred, or perhaps, into as many thousand small sects, of which no one could be considerable enough to disturb the public tranquility (p. 332)."

Similarly, Coase (1974) argued that "in the market for goods, government regulation is desirable whereas, in the market of ideas (speech, writing and the exercise of religious beliefs), government regulations are undesirable and should be strictly limited. The government, if it attempted to regulate the market for ideas, would be inefficient and it's motives would, in general, be bad, so that, even if it were successful in achieving what it wanted to accomplish, the results would be undesirable."

On one side, Smith and Coase advocated a free religious market to promote tolerance, peace, ideas and harmony in the society, but on the other side, David Hume argued against the competitive religious market and favored the establishment of the religion by the state. Hume explained that "in the free and unregulated market, each 'ghostly practitioner' (i.e., preacher) will have an incentive to maximize the number of his 'customers' by disregarding 'truth, morals, or decency' and appealing to the 'passions and credulity of the populace.' It is necessary for the state to regulate this competition in order to protect the 'political interests of the society'."[7] Hume further added that a state can take necessary regulatory measures to mute the fanaticism which is associated with independent religious sects. Given the definitions/views of Smith and Hume, the following sub-sections explain the structure and nature of the religious market in Pakistan.

2.3.2 The Islamic Religious Market

Behavioral and political economists argue that beliefs shape the current and future economic decisions of an individual (Benjamin et al., 2010; Leeson, 2012; Basten and Betz, 2013). Beliefs which are subjectively true, objectively, may be true or false.[8] Every religious belief has the character-

[7] See for the reference to David Hume on this point, Anderson (1998).

[8] The objectively false beliefs lack scientific support. Leeson (2012) called them superstition.

istics of either subjectivity or objectivity, or both. Due to the lack of objective evidence, it was a challenge for the economists to explicitly define the religious product and its market.[9] However, in the last two decades, economists have extended the tools of economics to study different aspects of religion. Religion has been focused as an economic market since the seminal work of Iannaccone (1992). In this context, to the best of our knowledge, this is the first study to define the Islamic religious product(s) and its market explicitly. For instance, what is the product available for the exchange?; what is the price of the transaction?; how is the price determined?; what are the available substitutes and complements of religious goods and services?; what is the nature of the market?; and so on and so forth. Given these questions about a market, we try to explain the market characteristics of the Muslims' faith in general and in Pakistan in particular.

A bundle of commodities is available for exchange in the Islamic religious market. We term the set of products, *Islamic or the Sharia Law*. There are some goods and services in the set of the Sharia law which are subjectively true, but objectively lack scientific proof. Examples include prayers, rituals, beliefs in God, heaven, hell, the day of judgment, life after death, et cetera. The opportunity cost of consuming such products is the time forgone which would otherwise be available for the labor market and consumption of secular goods and services. Furthermore, Sharia law includes commodities which are not only subjectively true but also possess evidence of objectivity. For instance, laws of inheritance, marriage, divorce, child custody, financial transactions, property rights, etc. The opportunity cost includes not only the time spent on production and consumption but also tangible costs in the form of income and wealth. For example, beliefs on fiscal (Zakat) and monetary (risk sharing, i.e., prohibition of interest) systems (Vogel and Hayes, 1998; El Gamal, 2006), property rights, contract enforcement, government intervention and laws related to crime and punishment, inheritance, marriage, divorce, etc., (Nomani and Rahnema, 1994). The opportunity cost in the transaction of these products includes time plus income forgone. Consider the following example: In the money market, borrowing and lending is backed by real valuables (gold, silver and land related property) to avoid nominal bubbles. Further, profit and losses are shared by both

[9] Maloney et al. (2010) define religion as a good having three components:
(1) private satisfaction, which includes hope for an afterlife;
(2) public camaraderie, which includes joint consumption of public goods, especially charitable works; and
(3) reputation, respect and social networking.

parties in the transaction to minimize moral hazard and adverse selection.[10] These transactions not only involve time but also money in exchange. There are different prices available in the religious market, dependent on the nature of goods and services, i.e., tangible vs. non-tangible.

The rules and regulations applicable to the Islamic religious market depend on the interpretation of the Sharia law. For example, the Sunni jurisprudence explains the distribution of income (Zakat) through government, while the Shi'ite argues in favor of individual freedom in the distribution of resources (Talbot, 2009; Powell, 2009b). The former gives a major role to the government in distribution, while the later relies on the efficiency of market forces. Each and every individual compares the costs and benefits of different interpretations and decides which sect and sub-sect to follow.[11] The substitute for a product is the different commodity introduced by a competitive sect with slightly different characteristics.

2.3.3 The Religious Market in Pakistan

Violence and terrorism in Pakistan are often correlated with religious variables (sectarianism) rather than with socio-economic and political institutions (Zaman, 1998; Nasr, 2000b; Stern, 2000; Grare, 2007b; Asal et al., 2008; Fair et al., 2010, 2013). Although, sectarian conflict and terrorism are explained through religious intolerance and extremism in Pakistan, there is a dearth of scholarship about the structure and function of the religious market. Thus, this study is an attempt to provide an alternative explanation to extreme crimes from the religious market perspective.

The Constitutional Provision of Religion

Being a predominant Muslim country, the effects of religion can be seen in different constitutional articles and clauses of Pakistan (ARDA, 2014). However, the nature and structure of the religious market (free vs. monopolize) is ambiguous in the constitution. Article 2 explicitly states that, "Islam shall be the State religion of Pakistan." If one focuses only on this article, it could be interpreted that there should be a state sponsored monopolized religion. If we read like this, then

[10] For a detail discussion, see Kettell (2011).

[11] The preferences for a specific sect change overtime when a new interpretation of the Islamic jurisprudence comes to the market. People continuously compare the costs and benefits of their decisions about rituals and tangible products.

the question arises, which interpretation (jurisprudence) of the Sharia law should be implemented in Pakistan? What explanation (Sunni or Shi'ite) of the Sharia will be acceptable to the majority? As we know, there are different Muslim sects and sub-sects in Pakistan (see figure 2.1 at the end of this section). Although, the fundamental interpretation of Sharia is the same, they differ on various social, economic and religious issues. To clarify this ambiguity, the constitution further provides the provision that every sect is free to practice its religion according to its own interpretation. Thus, article 22 (2a) allows a free market for every religious denomination. According to the *Association of Religion Data Archives (ARDA)*, religious education is not regulated or controlled by the state of Pakistan (ARDA, 2014).

Does a Religious Monopoly Exist in Pakistan?

If we consider the proportion of followers of a belief, Islam seems to be the dominant religion in Pakistan. According to the 1998 census: 96.28% are Muslims, 1.59% are Christians, 1.60% are Hindus, 0.22% are Ahmadi, 0.25% are Scheduled Castes and 0.07% are others (Government of Pakistan, 1998). If we further analyze denominational shares in the total population, which will give us an idea about the proportion of followers of each sect. Figure 2.1 presents the schematic graph of different religious sects and sub-sects in Pakistan. According to different sources, the Sunni and Shi'ite constitute 70-75% and 20-25% of the total population, respectively. It shows that the Sunni has higher market shares follows by the Shi'ite. Around 95% of the customers belong to the two fractions which constitutes a duopoly market having unequal shares.

According to the basic microeconomic theory, a duopolist market leads to inefficient outcomes if the two players collude on prices or output. To correct the inefficiency, it needs government regulations. This is also similar in the case of the religious market, as pointed out by Barro and McCleary (2005): in an unregulated religious market, a natural monopoly can arise. Nevertheless, Bainbridge and Stark (1987) follow Smith's theory of competition and argue that a religious monopoly occurs only if a government involves in coercive behavior on behalf of the religion. Furthermore, a strong concentration of followers in a particular religion promotes a religious natural monopoly (Barro and McCleary, 2005). The collective nature of participation and religious beliefs are important reasons to create a religious monopoly (Iannaccone, 1992). When more individuals adhere to a religion,

the higher number of people are well disposed towards to its doctrine. Similarly, Bainbridge and Stark (1987) argue that a centralized authority of the state can use its legitimate power to enforce the state sponsored monopolized religion in a pluralistic market, the market if it is allowed without the intervention of the government.

Nonetheless, this is not the case in Pakistan. The political demand for an independent state led to the existence of a natural monopoly of the Muslims. After the independence of Pakistan in 1947, the natural distribution of different sects was such that it resulted in the monopoly of the Sunni jurisprudence.

A Hierarchical Religious Market?

The first tier of the hierarchy in figure 2.1 consists of four main sects, that is, the Sunni, Shi'ite, Salafi and Sufism. As mentioned above, the religious market in Pakistan is dominated by the Sunni and Shi'ite sects. Nevertheless, the Salafi has 4% adherents in the market. Due to the unequal shares of each sect, the market can be classified as oligopoly in the first tier of figure 2.1. The important feature of this oligopoly is that the players often collude with each other to extract rents from the political market.[12] The second tier is more competitive. The sub-sects under Sunni and Shi'ite in figure 2.1 shows that the number of sub-factions are increasing over time, thanks to different explanations of the Sharia law. Nevertheless, it may not still represent Smith's version of a perfectly competitive market.

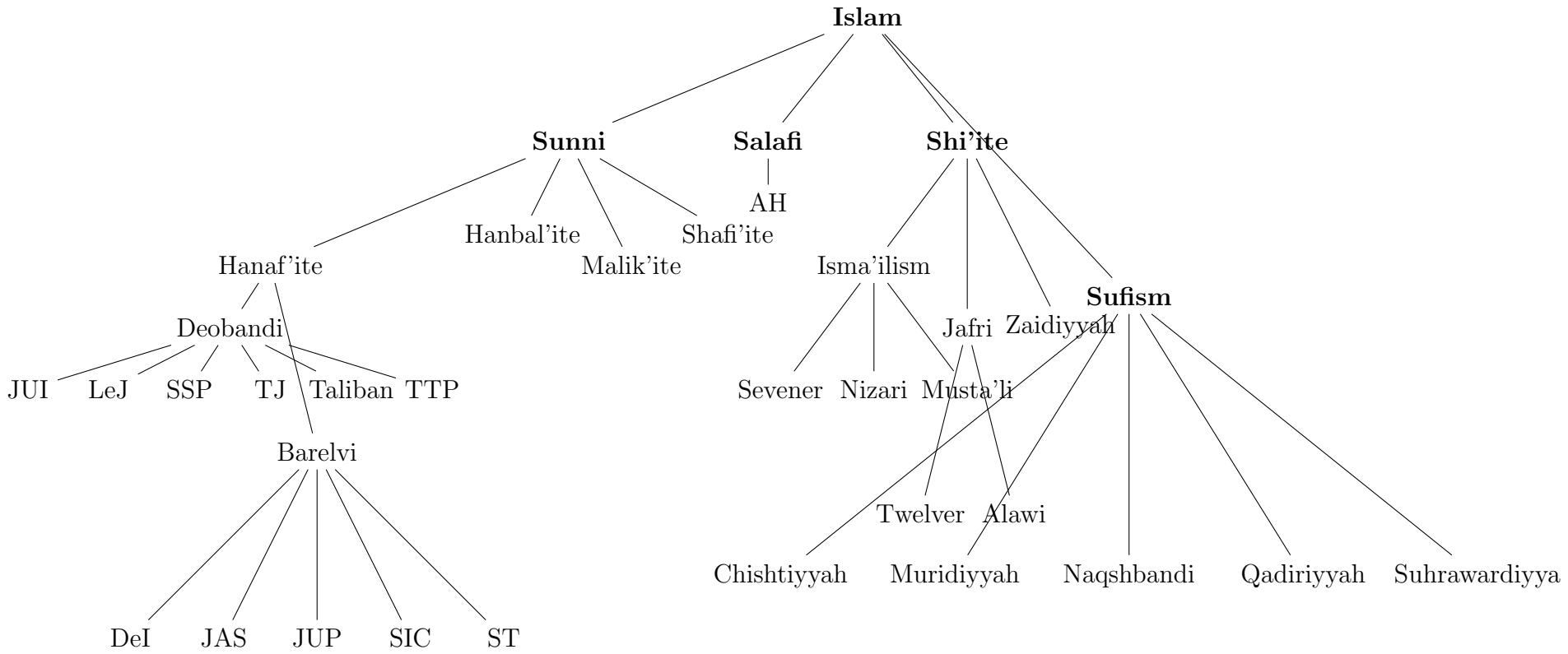
Although, there is variability in the information of different research organizations on the proportion of different sub-sects in the total population, the following numbers give a rough idea about their distribution. Global Security (2014) estimates that 50% of the Pakistani Muslims are Barelvi, 20% Deobandi, 18% Shi'ite, 4% Ahl-e-Hadith, 2% Ismaili and other 2%. Similarly, ICPVTR (2014) calculates that 60% are Barelvi, 15% Deobandi, 20% Shi'ite, 4% Ahl-e-Hadith and 1% other. Despite of discrepancies in two data sources, however, Barelvi dominates (50%-60%) the market followed by Deobandi and Shi'ite (20% each). It is evident from these facts that three producers (denominations) have 90% of the consumers which resembles the market of oligopoly.

[12] In the general elections of 2002, Sunni, Shi'ite and Salafi had formed a political alliance which won them 63 out of 272 general seats in the parliament (PILDAT, 2013).

One of the important features of this oligopoly is the barriers to entry. The main players do not allow the entry of a new player in the market. The prominent example is II Amendment in 1974. It declared Ahmadis, not to be Muslim. Article 260, clause 3(a) added to the constitution which states "a person who does not believe in the absolute and unqualified finality of the Prophethood of Muhammad (PBUH), the last of the Prophets or claims to be a prophet, in any sense of the word or of any description whatsoever, after Muhammad (PBUH), or recognizes such a claimant as a prophet or a religious reformer, is not a Muslim for the purposes of the Constitution or Law." After it became a law, it led to the widespread violent attacks against the Ahmadis' community (Khan, 2003).

If we further explore the second tier, it can be observed, that sub-sects are increasing under the umbrella of Sunni and Shi'ite. The market is more competitive in the second tier, thus, it converges to monopolistic competition. Each producer differentiates its product on the basis of its explanation of the Islamic jurisprudence. Similarly, each and every sub-sect brands its product *original* to attract customers. The fragmentation does not allow a single producer to control the whole market. There are barriers to entry for new sects. However, restrictions are lower if a faction gets the support of one of the main sects. For example, a new sub-sect can enter the market if it follows the fundamental ideology of one of the main sects, while being free to differentiate its goods on the basis of its own interpretation of the Sharia. Religious commodities in the second tier are not perfect substitutes and are therefore differentiated. The schematic presentation of the main sects and sub-sects is given in figure 2.1.

Figure 2.1: Schematic Analysis of Different Religious Sects in Pakistan



Note: **Abbreviations:** Under *Deobandi*, JUI stands for Jamiat Ulema-e-Pakistan, LeJ for Lashkar-e-Jhangvi, SSP for Sipah-i-Sahaba Pakistan, TJ for Tablighi Jamaat and TTP for Tehrik-i-Taliban Pakistan. Similarly, under the *Barelvi* sect, DeI abbreviated for Dawat-e-Islami, JAS for Jamaat Ahl-e-Sunnat, JUP for Jamiat Ulema-e-Pakistan, SIC for the Sunni Ittihad Council and ST for Sunni Tehrik. Finally, AH stands for Ahl-e-Hadith under *Salafi*.

Further sects and sub-sects: Other sects and sub-sects include in Shi'ite are Alevi, Akbari, Usuli, Shaykhi, Qaramita, Druze, Tayyibi and Bohras (Dawoodi, Jafan, Sulaimani, Alavi, Hebitahs, Atba-l-Malak and progressive Dawoodi). Similarly, other sub-sects of *Sufism* include Bektashi, Mawlawi, Oveyssi, Tijaniyyah and Shadhil. **Source:** Maloney et al. (2010) and the author's classification.

2.4 Legal Shocks to the Religious Market and Rent-Seeking

After defining the religious market, here, discussion turns to the second part of the research question, that is, the history of the government interventions and the economic incentives behind them in the religious market of Pakistan.

2.4.1 The Second Amendment

The 1973 constitution declared Pakistan a religious state and allowed a free market for every denomination. Nonetheless, the first regulation on religion was introduced within a year by the democratic government. It was imposed through the *Second Amendment*, that explicitly defines the word *Muslim*. The amendment declared the religious fraction *Ahmadis* to be non-Muslim and minority.[13]

Theologically, the Second Amendment might be correct, since one of the sects does not accept the most fundamental principle of the Islamic faith. However, it was the first attempt to regulate the market which provided a rent-seeking opportunity to different players. The amendment legalized and institutionalized violence against the Ahmadis' (Khan, 2003), which was the starting point of the sectarian violence in Pakistan.

At the time of the Second Amendment, the *de jure* political power with the religious denominations were insignificant, nevertheless, the *de facto* power with them was significantly high. The main reason was the religious homogenized society. There is considerable evidence that for the rent-seeking groups, a homogeneous polity is easier to exploit (Lipset, 1959).[14] Therefore, the religious players used their *de facto* power of persecution and violence which pulled out one of their

[13]To become a Muslim, one must accept that Muhammad (PBUH) is the last Prophet of God. Chapter 33, verse 40 of Qur'an explains "Muhammad is not the father of any of your men, but he is the (Prophetic) Messenger of Allah (God) and the Last of the Prophets; and Allah (God) has full knowledge of all things." However, the Ahmadis do not believe that Muhammad (PBUH) is the last Prophet of God and still declare themselves as 'Muslim.'

[14]Although, religion in Pakistan homogenizes the society, however, in the electoral history of Pakistan, religious parties never won a simple majority. In the 1970 general election, three religious parties (Jamaat-i-Islami (JI), Jamiat-i-Ulema-i-Islam (JUI) and Jamiat-i-Ulema-i-Pakistan (JUP) had won only 18 out of 300 general seats (PILDAT, 2013).

competitors from the market. Similarly, the intervention led to religious rent-seeking behavior in Pakistan. It was an example of the rent-seeking via non-price competition where the competitors, whose fundamental beliefs coincide with each other, forced the government to raise the barriers of entry into the market (Boudreaux, 1989). Furthermore, the implications and externalities of non-price competition have been observed within the few years in the form of dictator Zia-ul-Haq's *Islamization amendments*.

2.4.2 The Islamization Amendments

General Zia-ul-Haq (July 1977-August 1988) had promulgated a series of ordinances in 1979 to *Islamize* the legal, fiscal and monetary institutions of Pakistan. These amendments broadly included the provisions of the Hudood ordinance (punishment for serious crimes under the Sharia Law); the elimination of the Riba (interest-free banking); the introduction of profit and loss sharing schemes; the establishment of the federal Sharia Court and the Ushr and Zakat (Islamic taxes) ordinances. The detailed chronology of the amendments is illustrated in table 2.2 at the end of this section.

In these amendments, the most controversial is the *Hudood Ordinance*. Hudood[15] ordinances replaced Pakistan's Penal Code offenses based on the Common Criminal Law procedures with the laws based on the *Hanafi'ite* jurisprudence. As a consequence, punishment for theft, consumption of intoxicants (alcohol), extra-marital sex (rape) and making false allegations of adultery are replaced by so called the Islamic criminal laws.[16] The explanation of Hudood was limited to the jurisprudence of the Sunni scholar Abi-Hnifa which was rejected by the Shi'ite. A significant scholarship has been written in favor of and against the Hudood Ordinances (Kennedy, 1992; Cipriani, 1993; Polk, 1997; Quraishi, 1997; Hussain, 2006; Weaver, 2006; Lau, 2007; Mustafa and Cheema, 2008; Imran, 2013). Nevertheless, the basic purpose of the intervention was to achieve legitimacy for the dictator's government. To get the support of the Sunni sect and sub-sects, the then president, general Zia-ul-Haq had designed constitutional amendments based on the Hanafi'ite jurisprudence (Khan, 2013).

General Zia's intervention in the religious market is a case of two-way religious rent-seeking.

[15] Hudood is an Arabic word, literal meaning 'limit' or 'restriction.'

[16] Hudood includes Offenses Against Property Ordinance (prohibiting theft); Prohibition Order (prohibiting the consumption of intoxicants); Offence of Zina Ordinance (prohibiting adultery and fornication); and Offence of Qazf Ordinance (prohibiting false allegations of adultery) (Punjab Police, 1979).

From the government party, Zia was lobbying to remain in power undemocratically, which could have not been possible if the majority Sunni was not supporting him. From the producer side, the Sunnis were trying to expand their religious share to the political, fiscal and judicial institutions and markets. The Sunni sects exploited the opportunity while supporting the dictator in return for the constitutional amendments.[17] Once again, the Sunni denominations colluded with the dictator to restrict the influence of another player (the Shi'ite) in the market through legal intervention (Talbot, 2009). The government also violated the neutrality principle under Article 21 of the constitution.[18] The amendments would have required financial resources to implement them. However, it is ambiguous from the government documents that the cost of the implementation would only be borne by the Sunni sub-sects through higher taxation, as the interpretation of the amendments was limited to the Sunni jurisprudence. Hence, it is most probable that the 25-30% non-Sunni population revenue was also used in the formulation and enforcement of the amendments (Moj, 2015).

[17] In the 1977 general election, the three main religious parties had formed an alliance with six other parties. The alliance had secured only 36 seats out of 200. Again, the religious parties were unable to get *de jure* power in the parliament (PILDAT, 2013).

[18] Article 21 explains, "No person shall be compelled to pay any special tax the proceeds of which are to be spent on the propagation or maintenance of any religion other than his own."

Table 2.2: General Zia-ul-Haq Constitutional Amendments

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 Islamization 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 the Islamic Ideology
5.	Enforcement of Islamic Laws regarding rape, adultery and Prohibition of Wine (December, 1978)	Hudood ordinance	To transform the punishments for these crimes with those prescribed in Islamic Sharia
6.	The Establishment of Sharia Benches in Superior Courts (February, 1979)	Ordinance	To deal the cases in courts according to the laws in Sharia
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 Sharia
8.	Zakat and Usher Ordinance and the Elimination of Usury (June, 1980)	Ordinance	To empower the government to deduct 2.5% Zakat annually from mainly interest-bearing saving accounts and shares schemes
9.	The Establishment of the Federal Sharia 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 (Majlis-i-Shoora) 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 show disrespect for Muhammad (PBUH), Ahl-e-Bait (family of the Prophet), Sahaba (companions of the prophet) and Sha'ar-i-Islam (Islamic symbols) as offenses
13.	Article 58/2-B (November, 1985)	Constitutional amendment	To give 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 (8th Amendment)	All the above changes were passed by Majlis-i-Shoora (Parliament) and signed by the President

Source: Khan (2013)

2.5 Hazards of Government Regulations

After discussing the first and second parts of the research question, it is time to analyze the third part of it, that is, the externalities from interventions. Over the years, the religious amendments created a sense of confrontation among different religious sects and sub-sects. The confrontation in the religious space generated sectarian riots in the short run which transformed to sectarian violence in the medium term. Finally, sectarian violence is converted to terrorism between sects and within a sect in the longer period.

2.5.1 The Short Run Hazards

The immediate reaction in the religious market came from the Shi'ite sect and sub-sects who strongly objected to the Zakat tax. The Shias protested that it is against their beliefs that a state should be involved in the distribution of resources. They politically mobilized thousands of their customers/followers against government intervention. Although, Zia eventually withdrew and exempted Shias from the Zakat, this event accentuated the differences between the Shias and the Sunnis (Nasr, 2000a).

The Shias were suspicious of the state patronization and enforcement of a particular jurisprudence in the religious market, and came forward to protect their religious principles, norms and values. The producers of Sunni religion strongly reacted to the government's exemption of Shias' from the Zakat tax. Their hardcore sub-sect, the Deobandi, targeted Shias' religious processions, mosques, leaders and professionals. In reaction, the Shias formed their own anti-Sunni militant groups. The Shias' reaction with the formation of a radical militant group, unfortunately, led to competition on violence between the Sunnis and Shias in the religious market. Initially, it was converted to the market of violence. Thus, the future outcomes were sectarian conflict and terrorism (Jackson et al., 2009).

2.5.2 The Medium Term Hazards

The lobbying of the religious sects can be seen in the well-known case of the Hazoor Bakhsh vs. Federation of Pakistan, Pakistan Legal Decisions (PLD), 1981, Federal Sharia Court (FSC), 145.

The FSC had ruled that the sentence of *rajm* (stoning to death) for *zina* (fornication) is repugnant to the injunction of the Sharia Law. The FSC pointed out that the term *Hadd* is used in the Qur'an in a sense of restrictions (bounds set by Allah). None of these mean a fixed penalty. The court added that it appears from the traditions of the Prophet (PBUH), sayings of his Companions, that the word *Hadd* is used in the sense of punishment and not the 'fixed punishment.'

The court judgment was rejected by the religious producers of the Deobandi faction. They turned down the FSC 'interpretation' as being contrary to the Sharia Law and the judges were accused of being ignorant of law, the Islamic scripture and jurisprudence. The sects who were not satisfied with the decision, lobbied against the dictator with country wide riots and protests. It led to another constitutional amendment (President's Order 5 of 1981), which added three judges who were religious scholars and raised the number in the FSC bench to eight. The reason for the extra three judges was a direct consequence of complaints by the Sunni sect (Lau, 2004).

The government intervened in the judiciary institution due to the threat of riots and protests from a specific sect. General Zia had needed the support of the Sunni for the political legitimization, and thus, intervened and made amendments in the FSC. The regulation made the government once again non-neutral in the religious market. Both players, the Sunni and the government colluded to maximize rents from the collaboration. In the early 1980s, Zia needed the support of the Deobandi faction to get Jihadies in the Afghan War against the former Soviet Union[19] and the religious sects were struggling for their presence in formal institutions.

Religious Schools and Rent-Seeking

According to Article 22(2) of the constitution, "In respect of any religious institution, there shall be no discrimination against any community in the granting of exemption or concession in relation to taxation." Although, there is no explicit word for the subsidy in the above statement, however, one can interpret that the government will not discriminate against any religious institution in the provision of public goods. If the government provides concessions, it must treat all sects equally. But, it was not the case in Pakistan, where governments discriminated in religious concessions.

[19]For instance, these religious groups had provided and trained enough personnel for the Jihad in Afghanistan, aimed at defeating communism with the support of the United States (US), the Kingdom of Saudi Arabia (KSA) and the United Kingdom (UK) (Khan, 2013).

In the 1980s, one of the incentives of Zia's *Islamization* was the promotion of madrassas,[20] especially of the Deobandi sect, to get political benefits.[21] Moreover, the Deobandi was looking for long term investment in the promotion of its religious product and ideology. To get the initial liquid capital, the Deobandi, Barelvi and Ahl-e-Hadith schools turned to the dictator, Zia. Zia was also looking for investment, which could give him long term return. Investment in the promotion of a specific belief provided him with both short and long term returns and rents.

Firstly, he successfully prolonged his undemocratic regime, and secondly, he used the returns from religious investment as an instrument in his foreign policy in the Afghan War. Again, Zia kept aside Article 22(2) and intervened with his allies in the religious market. The US, UK and the Persian Gulf monarchies of Saudi Arabia and the United Arab Emirates supported him with financial resources. The government provided a share from allies funds for the promotion and construction of madrassas, and also enabled Islamic parties, social groups and religious scholars to do the same (Nasr, 2000a). Since the 1980s, Deobandi madrassas became notable recipients of the Zakat funds that the government collects. In 1984, for instance, 9.4% of the Zakat funds went to the support of religious schools, benefiting 2,273 madrassas and 111,050 students (Malik, 1989).

Rent-Seeking and Violence

At the end of 1979, the Soviet Union attacked Afghanistan. Some years later, Zia with the financial support of the US, UK and Arab monarchs intervened in the religious education market and supported religious schools. However, Zia linked the distribution of foreign rents to the provision of foot soldiers and sleeping cells to Afghan fighters who were fighting against the Soviet army. Therefore, the number of players in the religious market increased to three. The rent-seeking

[20] Pakistan's madrassas are traditionally linked with the vast network of religious schools that started in Baghdad in the beginning of the 11^{th} century. The process of the multiplication of madrassas continued with the passage of time owing to differences of the interpretation of the teachings of Qur'an and Hadith. The basic structure and system of education are more or less the same. However, since the 11^{th} century till the rise of capitalism, madrassas were like modern schools, where, apart from religious texts, science, philosophy, art, astronomy, etc., were taught to the students.

[21] Khan (2013) studied that Zia became the key ally of the US in the Afghan war. The West, especially the US and the Arab countries were against the Soviet Union's occupation of Afghanistan. Khan (2013) further explained that *Islamization* helped Zia in attaining domestic legitimacy through the support of religious groups where the clergies allowed to initiate and conduct *Jihadi activities whole heartedly.* However, Zia's *Islamization* policy had already started in November, 1977, while the Soviet Union had entered Afghanistan on December 24, 1979 (see table 2.2). Therefore, in our view, Zia's *Islamization* was to get domestic legitimacy through the support of religious groups, not through support for the Jihad.

players were the Sunnis denominational Deobandi sect, government and foreign countries. Murphy, Eamon (2012) studied that the rapid growth in madrassas during the Zia's regime led to a decline in the standard of training and scholarship.[22]

A major proportion of the state and allies funding went to the hardcore Deobandi and Ahl-e-Hadith madrassas (Murphy, Eamon, 2012). The concession created three way rent-seeking activities, everyone took its share. The international player achieved its share of rent when the Soviet Union was pushed back by the Afghan fighters, which led to the collapse of communism (Reuveny and Prakash, 1999). Zia's government received external legitimacy and financial assistance from his allies in the form of grants, aid and loans. Between 1972-1999, 48% of total US aid was given to Zia (USAID, 2014). The religious sects received unprecedented investment in madrassas, students and followers. The rent-seeking activities on the part of the three players created a social cost in the form of sectarian violence. Someone has to internalize this cost. Therefore, the general public of Pakistan in general and Shi'ite Muslims in specific were exposed to the hazards from interventions.

With the withdrawal of Soviet troops from Afghanistan (The Geneva Accord, 1988), the Deobandi sect who had accumulated financial and human resources went behind another competitor in the market. Since, it was not possible to stop the competitor through legal rules (the Shi'ites constitute 15-20% of the population), the Deobandi turned into violence and effectively utilized its past investment in madrassas against the Shi'ite.[23] These organized sects started to compete in the production of violence rather than in moral standards and values. In Zia's regime, the sects invested heavily in militant parties. Figure 2.2 (at the end of the section) presents the increase in the production of sectarian violence immediately after Zia's rule. Unfortunately, there is little information available on sectarian violence during Zia's period and this is limited to a specific province. However, theologians, historians and political scientists concluded that sectarian violence

[22]There were only 900 madrassas in 1971 in Pakistan, but increased to 33,000 (8,000 registered and 25,000 unregistered) by the end of Zia's era in 1988. One of the consequences of the large number of madrassas, especially the unregistered ones, was that they were strongly divided along sectarian rather than intellectual lines. The majority of the madrassas were built by the narrower sect Deobandi (65%), followed by the Barelvi (25%), Ahl-e-Hadith (6%) and Shi'ite (3%) (Murphy, Eamon, 2012).

[23]Most of the Jihadi organizations were established in the 1980s, the era dominated by Zia's regime. Here are some organizations with their dates of birth: the Shi'ite militant organizations in reaction to the Zia's policies are Tehrik-i-Nifaz-i-Fiqh-i-Jafriya (1979) and Tehrik-e-Jafaria Pakistan (1987-1988). The Deobandi militant organizations which were supported by Zia, the US, UK and the KSA include Harkat-ul-Jihad-i-Islami (1980); Harkat-ul-Mujahideen (1985); Sipah-i-Sahaba (1985); Lashkar-e-Taiba (1986) and Hizb-ul-Mujahideen (1989) (Howenstein, 2008).

was produced by Zia's interventions (Zaman, 1998; Nasr, 2000b; Stern, 2000; Grare, 2007b; Asal et al., 2008; Fair et al., 2010, 2013) to mention but a few.

2.5.3 The Long Term Hazards: Terrorism

Before 1979, there were 30 religious organizations of different denominations in Pakistan. These had included seven Deobandi, five Barelvi and four from each of the Shi'ite and Ahl-e-Hadith. After the Zia's Islamization amendments, a sharp increase in the growth of the religious organizations was observed. The number rose to 239 in 2002 (see table 2.3 at the end of this section). These figures take into account organizations at the national, regional and provincial levels. The number approaches the thousands if small local groups are considered as well.[24] Among the 239 organizations, 24 participated in electoral politics, 148 worked purely on the sectarian agenda, 24 became associated with the militant jihad, 12 were striving for the establishment of the renewalist/Khalifat movement and shunned democratic dispensations, 18 pursued missionary work, mainly preaching their sectarian ideas and 10 operated as charities (Rana and Ansari, 2006). For the first time in the history of the country, organized militant groups emerged in different religious sects and sub-sects, whose sole purpose was to compete for the market share through violence (Rana and Ansari, 2006; Murphy, Eamon, 2012). Almost all of the domestic terrorist groups surfaced during Zia's era which produced not only local negative spillovers but also created global negative externalities. For example, all of them have confirmed their affiliation with the Al-Qaida terrorist organization (Abdullah, 2014).

Zia's investment in different sects provided them with enough human resources to challenge not only competitive sects but also sub-sects of their own jurisprudence and even the government. The notorious militant groups (Sipah-i-Sahaba, Lashkar-e-Jhangvi and Tehrik-i-Taliban Pakistan), specifically, under the Deobandi denomination, converted initially into violent religious organizations, and gradually achieved the monopoly in violence. Their main objective was to capture the religious market through the production of extremism and violence. Figures 2.2 and 2.3 (at the

[24]There is a trend in Pakistan that every big mosque or madrassa has its own religious organization. They are mainly set up to gain influence in the area, collect donations and organize religious congregations. They often formally or informally merge and support the mainstream polity at the regional and national level which is in line with their schools of thought.

end of this section) show the sectarian and terrorism incidents in Pakistan. Figure 2.3 visualizes that the terrorist activities jump significantly to a positive integer in the late 1980s during the Zia's regime. Specifically, the terrorism threat is realized in the later part of his regime. In the years to follow, the extremists not only targeted their competitive sects but also the sub-sects of their own jurisprudence. Over time, they diversified their targets from the Shi'ite to the Barelvi and to Sufism. So far, more than 50,000 people have died in these attacks (Global Terrorism Database, 2013).

Due to the political instability in the 1990s, the government was unable to fully internalize the negative externalities which were created by Zia's interventions. To control the spillover effect of the 1980s policies, the Anti-Terrorism Act, 1997 was a major step forward in the quest for dealing with the menace of terrorism.[25] Nevertheless, at the end of the 1990s, the religious market was so polarized that mere laws were not enough to control the social costs of sectarian violence and terrorism. Although, there are divergences among the objectives of religious political, sectarian, militant and charitable organizations, however, the commonalities play a significant role in shaping the religious discourse in the country. All sects and sub-sects are part of a single discourse and share common objectives. Their discourse encourages Islamization and religiosity in society. These commonalities have led to the demand for the Sharia law (based on a narrow interpretation) by extreme violent and terrorist groups in Pakistan. For example, the terrorist group Tehrik-i-Taliban Pakistan (TTP)'s main objective and ideology is the enforcement of the Sharia based on its jurisprudence, which is also one of its main conditions in the recent peace negotiations with the government.[26]

[25]The Preamble of the Anti-Terrorism Act state, "Whereas it is expedient to provide for the prevention of terrorism, sectarian violence and for speedy trial of heinous offenses and for matters connected therewith and incidental thereto."

Section 6 of that Act defined a 'terrorist act' in the following terms: "Whoever, to strike terror in the people, or any section of the people, or to alienate any section of the people or to adversely affect harmony among different sections of the people, does any act or thing by using bombs, dynamite or other explosive or inflammable substances, or fire-arms, or other lethal weapons or poisons or noxious gases or chemicals or other substances of a hazardous nature in such a manner as to cause, or to be likely to cause the death of, or injury to, any person or persons, or damage to, or destruction of, property or disruption of any supplies of services essential to the life of the community or displays fire-arms, or threatens with the use of force public servants in order to prevent them from discharging their lawful duties commits a terrorist act."

[26]Interested readers can find the objectives and ideologies of different extremist and terrorist groups at SATP (2014).

Table 2.3: Religious Parties in Pakistan till 2002

School of Thought	Political	Sectarian	Militant	Educational/Missionary	Total
Deobandi	4	33	5	3	45
Barelvi	6	22	13	2	43
Ahl-e-Hadith	4	10	3	3	20
Shi'ite	3	16	3	1	23
Jamaat-i-Islami	3	–	4	7	17
Others	4	1	76	10	91
Total	24	82	104	26	239

Source: Rana (2011)

Figure 2.2: Sectarian Violence in Pakistan, 1989-2013 (PIPS, 2014; SATP , 2014)

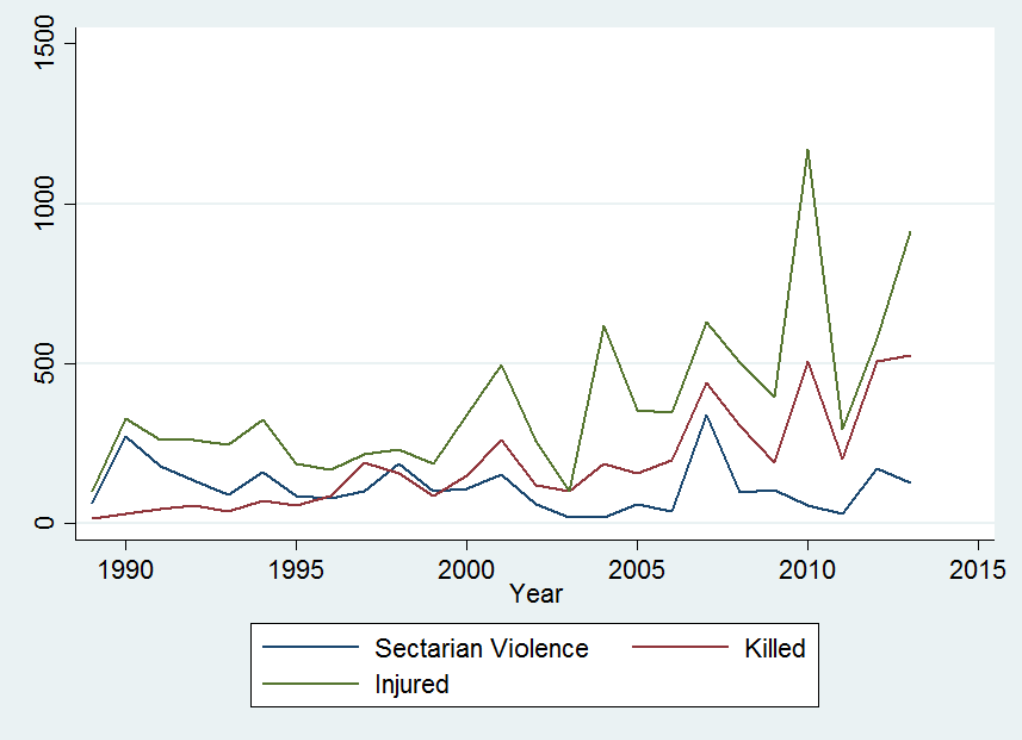
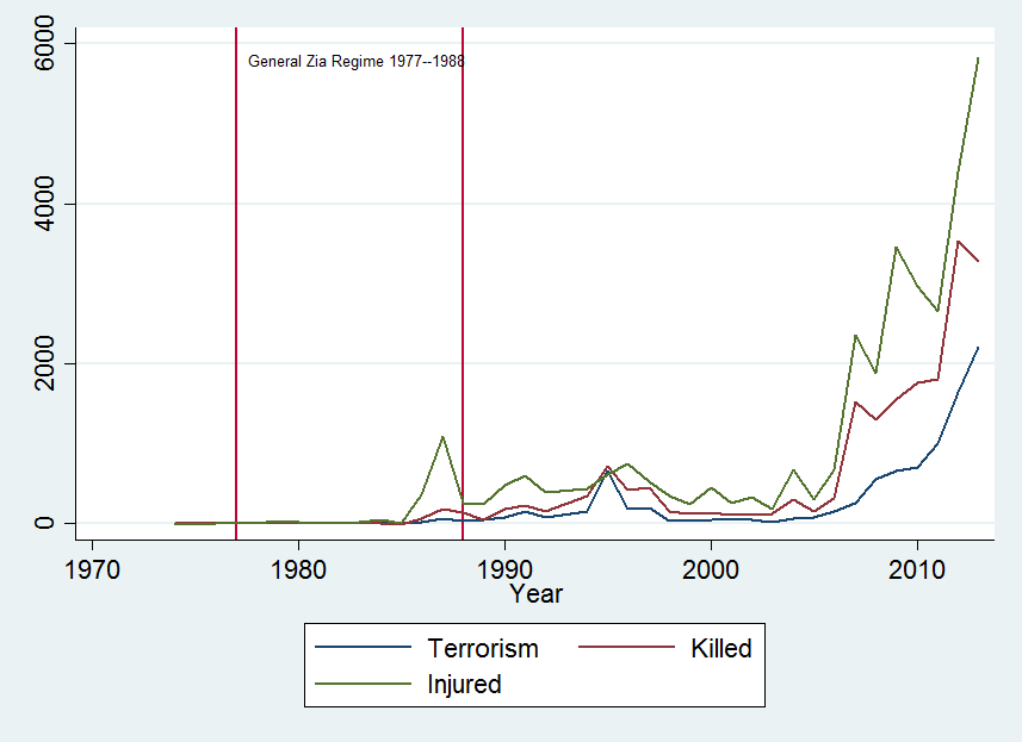


Figure 2.3: Terrorism in Pakistan, 1974-2013 (Global Terrorism Database, 2013)



2.6 Discussion & Conclusion

This chapter uses a market framework to analyze the implications of the government regulations in the religious market of Pakistan. To our knowledge, it is the first study to discuss violence and terrorism from a religious market perspective. We define a set of commodities which is available to customers in the religious market. The set includes both goods and services, i.e., rituals and prayers, financial markets and judicial institutions, monetary and fiscal policies, property rights and contract enforcement, etc. The religious product is differentiated on the basis of different interpretations of the Islamic jurisprudence. The commodity of one sect is an imperfect substitute for the comparative denomination. Producers in the market are different religious organizations and institutions which follow a specific interpretation to produce their products. Consumers are the general public who possess religious preferences and demand commodities which satisfy their religious taste. The price of a religious product includes the opportunity cost of time, that is, energy and resources use during the transaction and consumption processes.

The analysis further shows that a monopolistic structure exists in the religious market of Pakistan. This monopolistic competition is based on the different number of religious denominations which coexist in the market. The number of sects and sub-sects are increasing over time. To be specific, monopolistic firms compete over the quantities of mosques and madrassas provision, to attract more followers. Due to the monopolistic competition, the market forces are not efficient in providing different religious commodities, i.e., collection and distribution of Zakat, provision of interest free loans, etc. Thus, the government regulated it over the years to provide demanded religious products.

The analysis concludes that the appropriation of rent by three players played a significant role in the interventions of the religious market. These include the federal government, religious sects and cold war allies of Pakistan. From the government side, domestic legitimacy for political governance was the main factor to back the regulations in the religious market. Both democratic and non-democratic regimes tried to strengthen the domestic legitimacy of their respective governments, thus, limiting the regulations to Sunni (the larger community) jurisprudence. Religious sects, specifically, Sunni denominational Deobandi received rents in the form of investment in its madrassas, mosques and congregations in return for supporting the government in the cold war. Lastly, foreign allies provided funds for investment in the religious market to utilize the return against the former Soviet Union's invasion of Afghanistan. Over time, the regulations delivered returns to the relevant players of the market, i.e., government, religious sect(s) and international allies. However, they created a social cost to be borne by the society.

The social costs include riots and violent protests from the Shi'ite sect in the short run, sectarian violence from both the Sunnis and Shias in the medium term and terrorist attacks against each other and public resources in the long run. Over the years, the division among different sects has deeply polarized to the extent that they started competition in the production of violence against each other. This non-price negative competition still exists in Pakistan and is intensifying over space and time. Nevertheless, one particular sect of the Sunni (Deobandi) dominated the others in the production of violence (Global Terrorism Database, 2013; SATP , 2014).

The main contribution of this chapter is an alternative explanation of the prevailing sectarian conflict and terrorism in Pakistan from the religious market perspective. It discussed the structure

of the religious market and incentives and probable consequences of the government interventions in it. Furthermore, it analyzed how demand and supply of the religious product(s) interact in the religious market. Similarly, it defined the price of the traded religious product(s) from the opportunity cost perspective; nevertheless, further research is needed on price determination and its mechanism in the Islamic religious market.

Chapter 3

Terrorism Risk and Democratic Preferences in Pakistan

3.1 Introduction

Protecting individual life and property is among the most important responsibilities of states, and failure on this ground may lead to regime change. In the 21st century, an escalation of terrorism and violent conflicts, often originating in developing countries but also with negative effects on advanced economies, threatens citizens' security in large parts of the world. We investigate the institutional legacy of violent conflicts and terrorism. In particular, we enquire whether terrorism, which typically aims at creating fear and insecurity, triggers or hinders democratic change. To this purpose, we exploit detailed information on democratic attitudes and on terrorism incidence in Pakistan.

Pakistan is one of the most terrorism-plagued countries in the world.[1] Since its independence in 1947, a game of hide and seek prevails between democratic and military institutions to govern the country. Since 2008, it has an elected government, but it has oscillated between democracy and dictatorship with an approximately decade frequency.[2] To fight terrorism, both under dictatorship and under democracy the government has relied more on the armed forces than on the police.

[1] The estimated direct costs of terrorism in Pakistan amount to US$ 102.5 billion since the turn of the century (Economic Survey, 2013).

[2] The 2008 elections arrived after the Lawyer Movement, which in March 2007 protested against general Pervez Musharraf's dictatorship. Musharraf had unconstitutionally suspended the country's chief of justice Iftikhar Muhammad Chaudhry and he later imposed the emergency law and suspended the constitution. On November 3, 2007, the Supreme Court of Pakistan declared the state of emergency illegal and paved the way to the general elections.

Our investigation is based on a micro-level survey conducted by Blair et al. (2013) on the model of the one run by the Freedom House (Freedom House, 2011). For 6,000 respondents, we relate the importance they attribute in 2009 to being governed by elected representatives and to the civilian control over the military, to the incidence of terrorism in their district of residence between 2004 and 2008.

Our main finding is that persistent exposure to terrorism and violence decreases support for democratic values. A one-standard-deviation (one S.D.) increase in terrorist events reduces individual support for elected governments by 7-9%. Similarly, it reduces support for civilian control over the military by 6-9%.[3] These results are robust to different empirical specifications, such as heterogeneous samples based on gender, urbanization and education level, as well as to the use of alternative measures of risk exposure. They are also robust to controlling for endogeneity, which might be an issue. On the one hand, endogeneity would reinforce our results if terrorists target more frequently areas with higher support for democracy. On the other hand, our findings are robust to instrumenting terrorist attacks with the distance from the Pak-Afghan border (the Durand Line) and violence with religious fractionalization.

Our investigation is related to the economic literature on political transition, which has proposed different channels through which negative shocks might affect democracy and democratic preferences (Acemoglu and Robinson, 2001; Brückner and Ciccone, 2011; Ramsay, 2011). For instance, according to Acemoglu and Robinson (2001), bad economic conditions lower the opportunity cost of revolt, which incentivizes the state to provide rights in equilibrium. Our approach differs from Brückner and Ciccone (2011) and Ramsay (2011) on two main grounds: first, we focus on persistent exposure to terrorism rather than on transitory shocks; second, we investigate its effects on individual attitudes and preferences rather than on aggregate behavior.

Our study is also related to Voors et al. (2012) and Bellows and Miguel (2009), who, among others, find that individuals exposed to violence are more altruistic towards their neighbors, are more risk seeking, have higher discount rates, and are more likely to engage in political groups, vote in elections, attend community meetings and contribute to local social services. As it is

[3]Of course, the effect of a one S.D. varies depending on the econometric specification; however, in most cases, it moves around 6-9%.

far from clear how these effects on civic engagement and risk and time preferences translate into democratic attitudes, our findings can be seen in line with those of Blanco and Ruiz (2013) and Blanco (2012), who explore the negative impact of crime victimization and insecurity on satisfaction with democracy and on trust in institutions in Colombia and Mexico, respectively.

The rest of the paper is organized as follows. Section 3.2 expands on the related literature; Section 3.3 presents the data; the identification strategy is explained in Section 3.4; Section 3.5 presents the baseline empirical analysis; the transmission mechanism from terrorism risk to democratic attitudes is discussed in Section 5.6; Instrumental Variable (IV) results are reported in Section 5.7; and Section 3.8 concludes.

3.2 Terrorism, Violence and Individual Preferences

The literature on political economy discovers both optimistic and pessimistic results while exploring the impact of civil wars, violence, conflict, organized crimes and terrorism on institutional and democratic developments. It has tested the following hypotheses in different times and places: what is the democratic and institutional legacy of violence and conflict? Can perpetrators and victims become productive citizens once violence is over? In this section, we limit our focus to the exogenous impact (if any) of civil war, violent conflicts and terrorism on social and political institutions including social capital, norms, democratic values and political participation.

To start with the optimistic view, psychologists analyzed that victims of civil war and violent conflicts are resilient in general. They studied that victims of violence experience more personal growth than distress (Tedeschi and Calhoun, 2004); greater collective action (Wood, 2003); greater awareness and political participation (Bellows and Miguel, 2006, 2009) as the aftermath of a violent trauma.

Similarly, the political economy literature shows that violent conflicts and civil wars lead to the development of democratic institutions. For example, Cramer (2006) reports that violence can "produce institutional changes, amendments to the rules of the game. In retrospect, many changes that come to be seen as progressive have their origins in social conflicts that have taken a violent turn. Herein lies a paradox of violence and war: violence destroys but is also often associated

with social creativity." Following these arguments, Blattman (2009) argues that past abductions of citizens by rebels in northern Uganda have led to increased political engagement of victims. Similarly, Bellows and Miguel (2009) find a positive correlation between conflict and socio-political behavior in Sierra Leone. In line with this literature, Bateson (2012) collects evidence from five continents which shows that individuals who are recently victimized, participate more in politics as compared to nonvictims. They become more engaged in political and civic life.

The optimistic view is further explored by political economists to analyze the correlation between violent conflicts and social capital. The relationship between conflict and social capital can be bi-directional. At one hand, asymmetric violence and terror increase tension, decrease cooperation, collective actions and trust (Colletta and Cullen, 2000). Studying comparative case studies, Colletta and Cullen (2000) found that violence weaken the social fabric, and wreck the social capital of a community, undermine interpersonal trust and collective action, divide community members, destroy values and norms, and if not solved, can lead to more communal conflict. However, on the other hand, individuals living under violent events are uncertain about their lives and economic opportunities, therefore, social interactions and capital might be formed on the solidarity basis to face a common external threat.

In line with the optimistic results, a significant number of studies have explored that violent conflicts and civil wars improve social capital, instead of destroying it. It is observed that few African countries have witnessed a rapid post-war recovery which was not predicted by the Solow growth models. Social scientists have attributed this surge in growth to a change in social capital generated by violence itself. Analogous to this literature, Voors et al. (2012) study "that conflict affects preferences: individuals exposed to violence display more altruistic behavior towards their neighbors, are more risk seeking, and have higher discount rates." Similarly, Bellows and Miguel (2009) show that individuals who exposed to violence in Sierra Leone were more likely to participate in political groups and social community; vote in local elections, attend community meetings and contribute to local public goods. Also, Gilligan et al. (2010) find that individuals who were exposed to violence and conflict during Nepal's war are more likely to exhibit higher levels of social capital.

Nevertheless, significant number of studies have also discovered pessimistic results. They include the 2003 World Bank report (World Bank, 2003: 32) that claims "[t]he legacy effects of civil war

are usually so adverse that they cannot reasonably be viewed as social progress....[Civil war] has been development in reverse" (Collier and Others, 2003). Similarly, terrorism, violence, conflict and civil wars are typically linked to the destruction of physical infrastructure and temporary drops in income. It has been studied, for example, by Davis and Weinstein (2002), Brakman et al. (2004) and Miguel and Roland (2011) for the economies of Japan, Germany and Vietnam, respectively. If one agrees with the above inferences, then the rebuilding of society after violent conflicts and terrorism may be more challenging and unlikely, and can contribute to the well known 'conflict trap' (Collier, 2007).

It is a well established fact that terrorism and violent conflicts adversely affect physical capital which drops incomes temporarily according to a simple Solow-style growth model. Nevertheless, researchers ignore their effects on institutional development, social norms, social capital, social organizations and preferences, while studying the income effect of a conflict. If asymmetric terrorism and warfare destroy physical capital and also lead to the erosion of social capital, social and cultural institutions, political and democratic processes, raise the level of impatience, then adverse level and growth effects can eventuate. The opposite can happen if exposure to violence invites institutional improvement including democratic processes.

Analogously, there are some studies which analyze negative associations between violent conflicts and electoral participation. For example, Bratton (2008) shows that violence negatively affects electoral participation in Nigeria, and that the most significant effect on turnout is the "experience of the threat of violence." Similarly, Collier and Vicente (2014) argue that voter intimidation in violent circumstances is effective in reducing voter turnout. In line with these results, Pinchotti and Verwimp (2007) has analyzed that exposure to conflict decrease perceptions of fairness and trust within communities in the post-war Tajikistan. Nevertheless, the literature on the correlation and causation between asymmetric warfare and social capital is new and not matured yet.

Asymmetric warfare, like violent conflicts, terrorism and civil wars, will probably have significant effects on both individual and community level preferences, behavior and social capital. Individual exposure to conflict is different from the community and his level of democratic preferences are likely to change relative to preferences within a community.

3.3 Data

We have utilized multiple data sources to collect information on variables of interest to us, i.e., (i) individuals' opinions/preferences on democratic values; (ii) the number of terrorist incidents at the district level; (iii) individual and district level measures of income, wealth and inequality; and (iv) individual and district level geographic and socio-religious characteristics. Tables 3.1-3.3 provide summary statistics of all relevant variables used in the following analysis.

3.3.1 The Survey

We derive individuals preferences on democratic and institutional features from a micro-level survey conducted by Blair et al. (2013) in collaboration with the Pakistani non-governmental organization, Socio-Economic Development Consultants (SEDCO). Blair et al. (2013) have fielded a 6,000-households national level survey to measure individual level socio-economic, political and religious attitudes. They used the sample framework designed by the Federal Bureau of Statistics (FBS) Pakistan to draw a stratified random sample of adult Pakistani men and women. Similarly, they chose randomized sample from the four main provinces of the country: Punjab, Sindh, Khyber Pakhtunkhwa (KPK) and Baluchistan. Following the rural/urban breakdown in Pakistan's census, they randomly selected respondents within 500 primary sampling units (PSU): 332 in rural and 168 in urban areas. The data is oversampled in the smaller provinces (Baluchistan and KPK) to ensure the collection of sufficient information in these sparsely populated and less developed provinces. Post-stratification survey weights were calculated which are derived from the last population census. A face-to-face questionnaire was fielded by six mixed-gender teams between April 21 and May 25, 2009. Males surveyed males and females surveyed females, consistent with the Pakistan's cultural values and norms to facilitate the interviewees. We derive our dependent variable from this survey which is discussed below.

Democratic Attitudes

It is a challenging task to measure people's opinion on civil liberties, human rights, institutional and democratic values in risky areas.[4] However, Blair et al. (2013) tried to measure these opinions at the individual level in Pakistan, which is under the spiral of terrorism since the 1980s. They followed Freedom in the World (FIW) (Freedom House, 2011), that uses different institutional features to measure the extent of liberal democratic values. Blair et al. (2013) selected six institutional characteristics from the FIW survey while using questions to measure their support in Pakistan. The survey focuses on the specific institutional qualities of liberal democratic values. These include: governance by elected representatives, the freedom of assembly, free speech, civilian control over the military, property rights and independent courts. This study considers two values of a liberal democracy, given their importance in the democratic struggle of Pakistan. These are 'governance by elected representatives and civilian control over military.' The public opinion on the above two democratic values is represented by the following questions: *i) how important is it for you to live in a country that is governed by representatives elected by the people? and ii) the 1973 Constitution of Pakistan says civilians should control the military. This means the military cannot take action without orders from civilian leaders. In your opinion, how much control should civilians have over the military.* Appendix 3.9 presents the structure of questions that were asked from the respondents to measure their socio-economic and political preferences.

To minimize between-subject variation due to respondent-specific beliefs about the democratic situation, the survey focuses on the specific institutional characteristics rather than on behavioral outcomes (i.e., perceptions about the legitimate action of the country) (Fair et al., 2013).

Since the Lawyer Movement in March, 2007, which resulted in the restoration of democracy in Pakistan in February, 2008, democratic norms have gained currency in the Pakistani political economy discourse. At the same time, this debate has also included the critical analysis of government policies against continuous terrorism, which raised few questions on the deterrence level of democracy against terrorism in Pakistan.

This study explores the relationship between exposure to terrorism and the preferences for lib-

[4]Responses can be expressive in the survey data. Hillman (2010) notes that "response in a survey is a low-cost action that allows people to obtain expressive utility from the answer that they give, without consequences for any actions they need to undertake."

eral democratic values, that is, 'governance by elected representatives' and 'civilian control over military.' The former institutional characteristic is measured on a five-point scale (extremely important, very important, moderately important, slightly important and not important at all), while the latter is measured on a different five-point scale (complete control, a lot of control, a moderate amount of control, a little control and no control at all). Respondents were asked to select one option from the five categories for each question. As shown in figures 3.1 and 3.2, about 50% of the households selected the first two options for the 'elected representatives' and about 31% for the 'civilian control' values . Accordingly, we construct a dummy variable of two categories: the respondents who select the first two options is equal to '1' otherwise '0'. Table 3.1 shows the distribution of preferences by respondents for the two proxies of democratic values.

Some scholars criticized the use of specific feature of democratic institutions as measure of democratic development. In this context, Blair et al. (2013) have mentioned limitations of their institutional measure. Similarly, Munck and Verkuilen (2002) noted the challenges in the measurement and definition of 'democratic values.' Nevertheless, given these complexities, Blair et al. (2013) study those institutional characteristics that are considered as the requisite parts of democracy, formulated by the international organizations like Freedom House.

Table 3.1: Summary Statistics of Democratic Preferences (2009)

Variable	Mean	Std. Dev.	Min	Max
	Original Measure			
Elected Representatives	1.90	1.01	1	5
Civilian Control over Military	3.20	1.35	1	5
	Dummy Measure			
Elected Representatives	0.75	0.43	0	1
Civilian Control over Military	0.31	0.46	0	1

Note: The original measure for the 'elected representatives' is designed as: 1=extremely important, 2=very important, 3=moderately important, 4=slightly important and 5=not important at all. And for the 'civilian control over military' is formulated as: 1-complete control, 2=a lot of control, 3=a moderate amount of control, 4=a little control and 5=no control at all. Dummy measure is equal to '1' if individual preferences are either 1 or 2, otherwise '0' for both proxies.

Figure 3.1: Preferences for the Elected Representatives

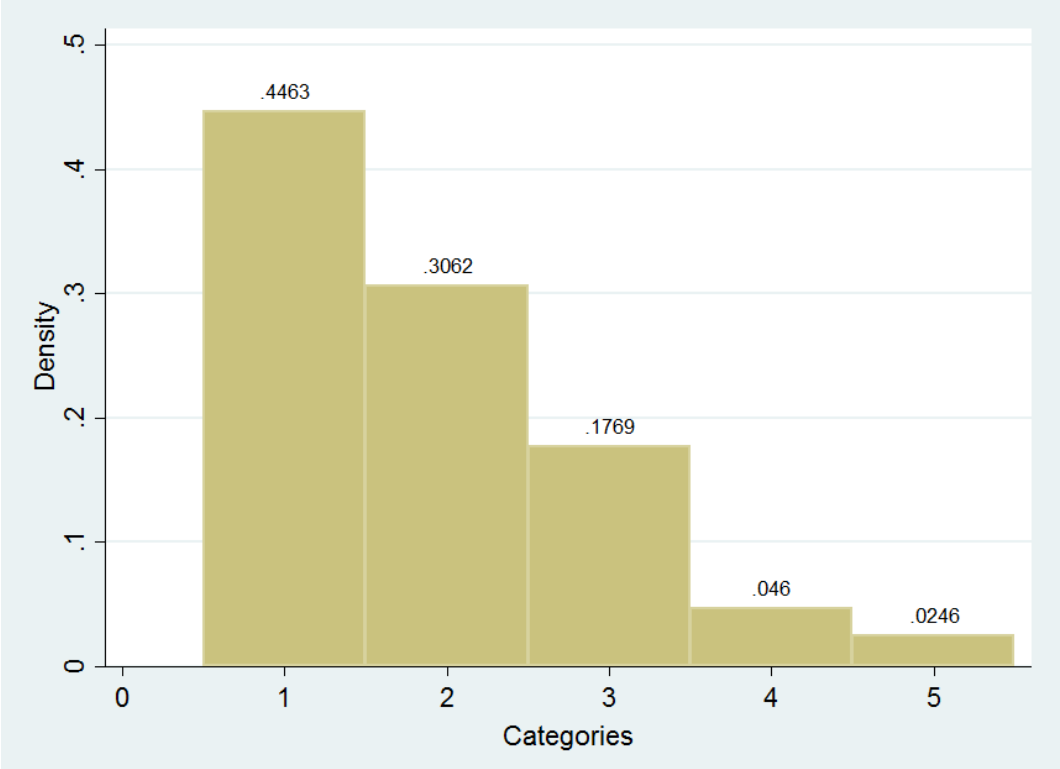
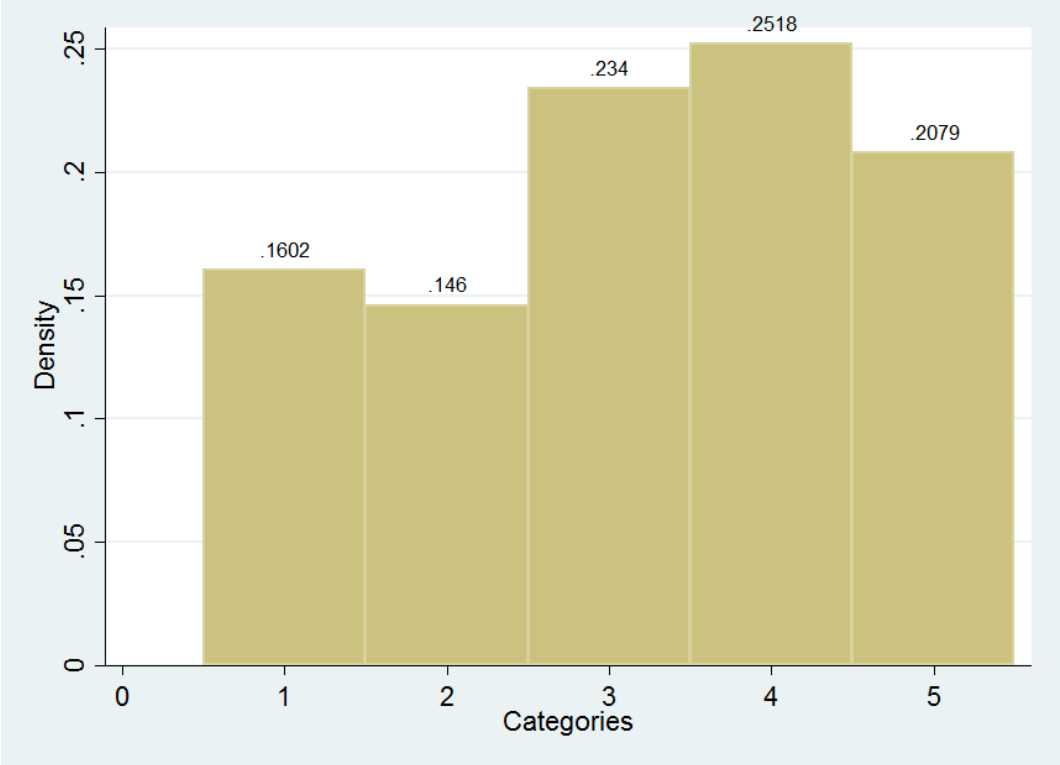


Figure 3.2: Preferences for the Civilian Control over Military Institution



3.3.2 Terrorism and Violence

The most important control variable of our study is the number of district level terrorist attacks in Pakistan. The Global Terrorism Database (GTD) defines terrorism as, "a terrorist attack which fulfills the following three criterion: i) The incident must be intentional; ii) The incident must entail some level of violence or threat of violence and iii) The perpetrators of the incidents must be sub-national actors. In addition, at least two of the following three criterion must be present for an incident to be included in the GTD: i) The act must be aimed at attaining a political, economic, religious or social goal; ii) There must be evidence of an intention to coerce, intimidate or convey some other message to a larger audience (or audiences) than the immediate victims and iii) The action must be outside the context of legitimate warfare activities." As mentioned in the above definition, one of the main objectives of a terrorist organization is to coerce and intimidate a larger audience than the immediate victims. Hence, a terrorist incidence could also affect the political and economic attitudes and preferences of the larger audience than the immediate victims. Table 3.2 reports descriptive statistics of total number of terrorist events and acts of different kinds of violent conflicts (violence)[5] between 2004-2008[6], while figures 3.3-3.6 visualize district level terrorist attacks and violence over time and space, respectively. We use different kinds of violence events as an alternative indicator of 'exposure to risk' and analyze its impact on the public opinion about democratic norms. The correlation between terrorism and violence is 0.70, which can be observed from figures 3.5 and 3.6. Although terrorism in Pakistan is not a new phenomenon, but the marginal change in terrorist attacks is positive and increasing since 2004-2005 (see figure 3.3). The increasing number of terrorism and violence since 2004-2005 demands attention to explore their impact on individual preferences toward democratic norms.

[5]Violence include assassination, extortion, target killings, violent political demonstrations, communal, sectarian and ethnic clashes.

[6]Although, we have district level terror attacks from 2001-2012, we use terrorist attacks only from the period 2004-2008, because there has been a surge in terrorism in Pakistan since 2004. We also tested our baseline results for the terrorist attacks from 2001-2008, however, the results do not change. These results are available on reader's request.

Figure 3.3: Monthly Terrorist Attacks (2001-2012)

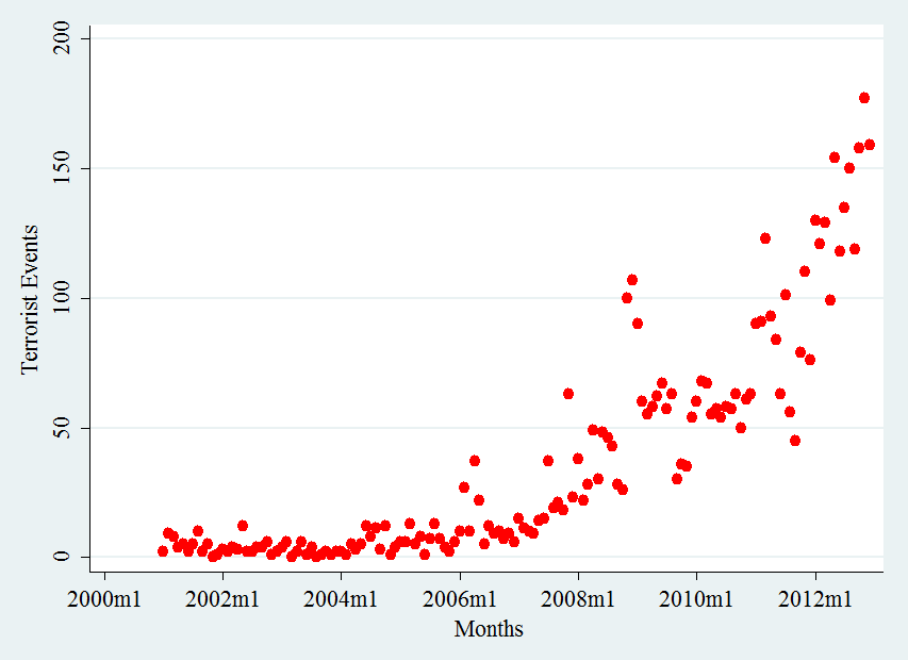


Figure 3.4: Monthly Violence Incidents (2001-2011)

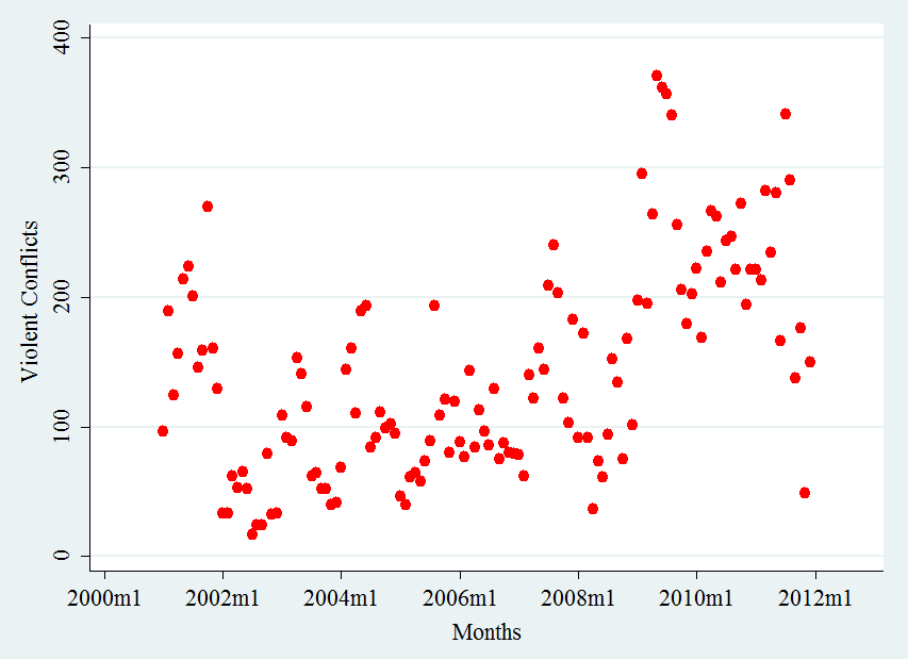


Figure 3.5: Geographic Distribution of Terrorist Attacks (2004-2008). Bigger the Circle, Higher the Terrorist Attacks.

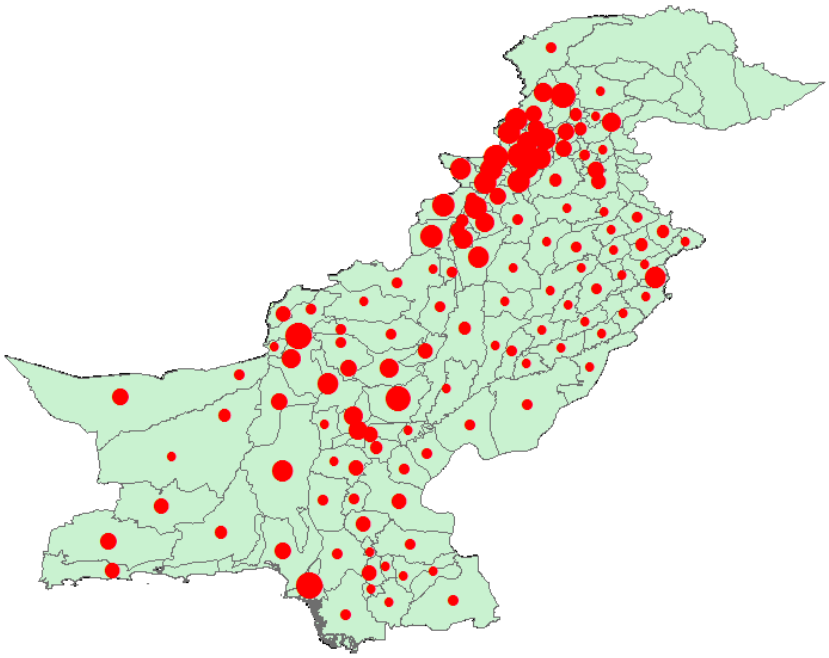


Figure 3.6: Geographic Distribution of Violence Incidents (2004-2008). Bigger the Circle, Higher the Violence.

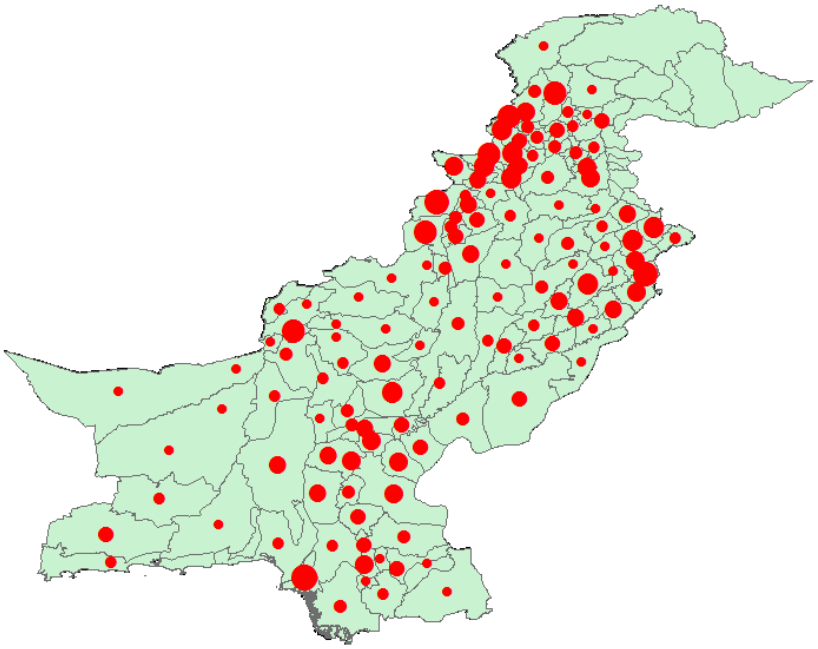


Table 3.2: Summary Statistics of District Level Terrorist Attacks and Violence Incidents (2004-2008)

Variable	Mean	Std. Dev.	Min	Max
Terrorism	52.004	82.04	1	365
log(Terrorism)	2.87	1.53	0	5.90
Violence	246.87	367.20	1	1278
log(Violence)	4.61	1.41	0	7.15

Source: De Mesquita et al. (2013) and Global Terrorism Database (2013).

3.3.3 Control Variables

Other control variables include demographic, socio-economic and religious characteristics. Demographic controls are rural/urban belonging, gender, age, language, education level, marital status, population density and share of urban population. Socio-economic characteristics include nominal income at individual and district level, profession, individual level economic opinions about relative income overtime and space, inequality and land reforms. The additive asset index is calculated from the possession of the following assets at individual level: television, air conditioner, street lamps, home outdoor area, computer, cell phone, car, newspaper and internet. Socio-economic controls also include multiple deprivation index which is constructed from district level education, health and housing variables. Lastly, religious controls include sect type, religious fractionalization, recitation of the holy book, frequency of recitation and role of the Sharia law in the current legal framework. Table 3.3 presents the descriptive statistics of other control variables. The definitions of dependent and control variables are given in Appendix 3.9.2.

3.4 Empirical Strategy

This section presents the econometric strategy to explore the effect of terrorism and violence on support for democratic values. As discussed above, we use individual perception and preferences about specific institutional features as a proxy for democratic values. To get the individual preferences, we rely on a micro level survey of 6,000 respondents. The number of terrorist attacks and violent incidents are time-variant but the survey is time-invariant, which constraint us to rely only on the cross-sectional dimension. We argue that district level terrorist attacks are exogenous to

Table 3.3: Summary Statistics of Demographic, Social, Economic and Religious Controls

Variable(s)	Mean	Std. Dev.	Min	Max
Individual Level Demographic, Social, Economic and Religious Controls				
Urban	0.34	0.47	0	1
Female	0.48	0.50	0	1
Language	2.85	1.48	1	7
Pushto Language	0.16	0.37	0	1
Age	33.50	11.35	18	88
Age Squared	1251.48	895.64	324	7744
Marital Status	0.77	0.42	0	1
Education (all categories)	*4.22*	*2.23*	*1*	*7*
Primary	0.13	0.33	0	1
Middle	0.14	0.35	0	1
Matric	0.19	0.39	0	1
Intermediate	0.13	0.33	0	1
Graduate	0.06	0.25	0	1
Professionals	0.02	0.14	0	1
Illiterate	0.33	0.47	0	1
Occupation	4.11	1.97	1	11
Nominal Income	9.64	6.85	0.10	100
Asset Index	0.43	0.19	0	1
Earn Less	0.36	0.48	0	1
Earn More	0.18	0.39	0	1
Better Financial Situation	0.30	0.46	0	1
Worse Financial situation	0.50	0.50	0	1
Land Reforms	0.40	0.49	0	1
Inequality	0.54	0.50	0	1
Sunni	0.96	0.18	0	1
Recitation of the Holy Book	0.57	0.50	0	1
Frequency of Recitation	0.20	0.40	0	1
Role of Sharia Law	0.73	0.26	0	1
District Level Demographic, Social, Economic and Religious Controls				
Multiple Deprivation Index (MDI)	32.89	14.04	12.77	75.29
Population Density	2161.52	5878.87	20.64	33014
Urbanization Rate	38.28	26.29	5.3	100
Instrumental Variable(s)				
Distance from the Durand Line	460.92	208.48	137.38	912.25
Herfindahl–Hirschman Index (HHI)	0.50	0.17	0.25	0.92

Note: Nominal income is in rupees which is standardized by dividing on 1000; asset index is an additive index of assets like TV, air conditioning, cell phone, car, outdoor area, etc.; earn less and earn more are economic opinions compare to past period; better financial and worse financial situations are economic opinions compare to neighbors. HHI is a district level index of religious fractionalization.

individual level political preferences, thus, the probability of reverse causality is low.[7] Similarly, we separate samples on the basis of gender, urbanization and education level to assess heterogeneous responses to terrorism. Nonetheless, we include socio-economic and religious controls to our baseline regressions in order to minimize the extent of reverse causality, measurement errors and omitted variable biases. As a robustness test, results based on Instrumental Variable identification strategy are reported in section 5.7.

Our baseline estimating probit equation is:

$$P_{id} \equiv Pr(y_{id} = 1|X, Z) = \beta\, terrorism_d + \gamma^{'}\, X_i + \delta^{'}\, Z_d + \phi_p + \epsilon_i \tag{3.1}$$

where

$$y_{id} = \begin{cases} 1 & \text{with probability } P \text{ if an individual } i \text{ supports democratic values in district } d, \\ 0 & \text{with probability 1-}P \text{ otherwise} \end{cases}$$

y_{id} are the preferences of individual i on democratic values in 2009 in district d; terrorism is the indicator for district level terrorist attacks as discussed above; X_i is a set of individual control variables; Z_d is a set of district level controls; ϕ_p are province-fixed effects and finally ϵ_i is an error term. The set of observable X_i and Z_d comprises of demographic, religious and socio-economic determinants of individual preferences on democracy.

3.5 Democratic Attitudes and Terrorism

3.5.1 Baseline Evidence

Regression estimates on equation 3.1 are reported in table 3.4.[8] At first, we estimate the raw correlation between the democratic values $\in$ [0,1] and number of terrorist events, then we progressively add the set of control variables to our baseline specification. Table 3.4 presents results on the two proxies of institutional values. The results in the upper part of the table 3.4 show that

[7] For example, in figure 3.5, the terrorist attacks are random except the North-West part along the Durand Line. However, the survey did not include respondents from that part due to security risk.

[8] Regression results including all control variables are available on reader's request.

the number of terrorist attacks significantly affect the likelihood of individual preferences toward elected legislatures. The absolute value of the estimated coefficients of the terrorism variable varies between -0.123 and -0.169 in different specifications, which shows that individuals living in districts, relatively more exposed to the expected threat of terrorist attacks, are likely to have less support for democratic values like elected representatives. This correlation is robust across alternative specifications of determinants and controls of democratic attitudes.

The estimated parameters provide information only on the correlation between the likelihood of terrorist attacks and individual opinions. To be comprehensive in the interpretation of the coefficients, we calculate a one S.D. effect of terrorism shocks. For example, a one S.D. increase in exposure to terrorism is more likely to decrease an average individual preferences for democratic governance by 8% in specification (1); 6% in specification (2); 8% in specification (3); 6% in specifications (4), (5) and (6).

Our main result supports the pessimistic argument that exposure to terrorist attacks is more likely to decrease support for democratic values. Nonetheless, the following might be the probable reasons for this negative relationship. First of all, the survey was conducted in the regime of the 2009 democratic government, which had failed to supply public goods in sufficient quantity that could save lives and property of its citizens or helped to reduce future risk of terrorism. The results could be a natural response from the respondents to show their disapproval for democratic values, if the elected legislators were unable to protect their basic human rights. Secondly, the above argument is strengthened by the prevalent civil-military imbalance in Pakistan's political landscape. The military dictators were more successful than elected legislatures to transfer power at the local level, giving elected representation more weightage in conducting affairs than relying on inefficient bureaucratic administration. This gives an impression that democratic governments lack the will to decentralize resources and power from central structure to the micro level.[9] Hence, the lackluster administrative performance of democratic institutions at local level further adds to

[9]The Discretionary Development Fund (DDF) allocates resources in the annual budget for the parliamentarians. The basic purpose is to channel money from the central government directly to the electoral constituencies for local infrastructure projects. In Pakistan, each National and Provincial Assembly member receives US$ 240,356 and 60,089, respectively (Tshangana, 2010). If power transfers at the municipality level, the municipality representative has to spend resources on the local development projects. Parliamentarians can no longer exploit these resources. Due to the rent-seeking opportunity, democratic government does not want to transfer power at the local level (ICG, 2013).

the failure of service delivery and loss of confidence in democracy by the people. Thirdly, Pakistan has a rich history of democratic struggle which started from her inception in 1947 till the Lawyer Movement in 2007; therefore, a specific dictator could not rule for more than a decade, giving way to mixed feelings by the populace for both substitutable regimes (democracy vs. dictatorship).

However, questions can be raised on the use of proxy for the institutional values. Therefore, we also perform an alternative test and use another proxy for the individual's political attitude about democratic support. In liberal democracies, the military institution is constitutionally constrained under the parliament, i.e., the military institution is not independent in taking political decisions. Nevertheless, military coups have happened frequently in Pakistan in spite of institutional restrictions and sanctions. Therefore, in the survey, the following question is also included to test democratic support in an alternative way. The wordings of the question are "The 1973 Constitution of Pakistan says civilians should control the military. This means the military cannot take action without orders from civilian leaders. In your opinion, how much control should civilians have over the military?" Consequently, we also use this question as a proxy to measure the support for democratic values. The lower part of the table 3.4 reports these regressions under alternative specifications.

The signs and significance of our main independent variable 'terrorism' are the same with the regressions in the upper part. However, the negative correlation of terrorist events with 'civilian control over the military' proxy has an opposite interpretation than our first measure of democratic support. The interpretation of the negative sign is that additional terrorist attacks decrease the probability of having civilian and parliament control over the military institution. For instance, a one S.D. change in the aggregate terrorist attacks on political attitudes vary between 6% in specification (1); 8% in specification (2) and 6% in specifications (3), (4), (5) and (6).[10]

The probable explanation for the peoples opinions about the low level of control of the parliament over the military may be the following. The army as an institution is the only law enforcement agency which is effectively engaged against domestic terrorists since 9/11.[11] Therefore, people may

[10]The regression results for all the democratic values asked in the survey are given in table 3.15 in Appendix 3.9.2.

[11]A report submitted to the Supreme Court of Pakistan by top spy agencies about the total number of casualties caused by terrorist attacks since 9/11. According to the report, the armed forces have suffered 15,681 casualties while fighting domestic terrorists in the tribal areas since 2008, with 2009 being the deadliest

consider the army institution to safeguard their lives and property.

Table 3.4: Terrorism and Democratic Values

	(1)	(2)	(3)	(4)	(5)	(6)
Preferences on Elected Representatives						
Terrorism (log)	-0.169***	-0.123***	-0.148***	-0.143***	-0.144***	-0.138***
	[0.0117]	[0.0169]	[0.0225]	[0.0229]	[0.0235]	[0.0241]
Marginal Effect	-0.05	-0.04	-0.05	-0.04	-0.04	-0.04
One S.D. Effect	-0.08	-0.06	-0.08	-0.06	-0.06	-0.06
Pseudo R-Square	0.03	0.10	0.10	0.11	0.11	0.17
Preferences on Civilian Control over Military						
Terrorism (log)	-0.125***	-0.203***	-0.166***	-0.151***	-0.146***	-0.143***
	[0.0126]	[0.0180]	[0.0281]	[0.0285]	[0.0293]	[0.0296]
Marginal Effect	-0.04	-0.05	-0.04	-0.04	-0.04	-0.04
One S.D. Effect	-0.06	-0.08	-0.06	-0.06	-0.06	-0.06
Pseudo R-Square	0.02	0.08	0.10	0.11	0.11	0.13
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives (N=5891) & civilian control over military (N=5770)). Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

3.5.2 Democratic Attitudes and Violence

In this section, we use *violent conflicts (violence)* as an alternative indicator of exposure to risk, which we believe, might affect the political opinion of an ordinary citizen. The intuition is that violence may impose negative externalities at the local rather than the national level, due to mass media coverage of terrorism than violence.

Religious, ethnic and nationalistic violence has escalated in Pakistan since 1980s, which is continuing till to date. We assume that consistent and long-term conflicts also create negative

year for them. http://tribune.com.pk/story/527016/pakistani-victims-war-on-terror-toll-put-at-49000/

sanctions and externalities on the life and property of a common individual just like terrorism. Consequently, we argue that violence can change the risk preferences of an individual towards his expected life and property, which in turn may determine his democratic perceptions.

We measure violence as an aggregation of sectarian, ethnic and nationalistic conflicts. The correlation between violence and terrorism is 0.70. The results obtained while using violence as a main regressor are presented in table 3.5. The sign and statistical significance of the estimated coefficients for the *violence* regressor are similar with the base line specifications of terrorism in table 3.4. Except for specification (1), effect of a one S.D. increase in violence on preferences for elected legislators are about the same with those observed in table 3.4.

Similarly, the parameter estimates in table 3.5 are also consistent with our baseline estimates when we consider the correlation between violence and democratic support (civilian control over the military). Although, estimated coefficients of violence have lower absolutes values, nevertheless, they are robust in sign and significance.

3.5.3 Sensitivity Check

While exposure to terrorism is likely to affect preferences, nevertheless, current terrorism incidents are more likely to shape democratic attitudes than the lag attacks. To capture the memory effect of terrorist risk on political attitudes, we analyze the response of individuals to terrorist attacks between January-May, 2009. The reason is that the survey is conducted around this time interval from which we derive our proxies of democratic preferences. The regression results based on terrorism between January-May, 2009 are reported in table 3.6.

The estimated parameters of exposure to terrorism on preferences 'governance by elected representatives' are negative and statistically significant across different specifications. The critical point to explain here is that a one S.D. effect of terrorism on preferences is significantly lower in table 3.6 than table 3.4. The plausible explanation may be that continuous terrorist attacks over the years cause people to adjust their attitude to the average level of terrorism per week/month. Due to the convergence of expectations to the mean value of terrorism, recent attacks may not significantly shift political values. Nevertheless, long-term and consistent exposure to terrorism risk alter individuals support for institutions which perceive to effectively deter terrorism. Similar results are

Table 3.5: Violence and Democratic Values

	(1)	(2)	(3)	(4)	(5)	(6)
Preferences on Elected Representatives						
Violence (log)	0.012	-0.135***	-0.206***	-0.204***	-0.203***	-0.181***
	[0.0126]	[0.0199]	[0.0302]	[0.0308]	[0.0325]	[0.0311]
Marginal Effect	0.003	-0.04	-0.06	-0.06	-0.06	-0.05
One S.D. Effect	0.004	-0.06	-0.08	-0.08	-0.08	-0.07
Pseudo R-Square	0.0001	0.10	0.10	0.11	0.12	0.17
Preferences on Civilian Control over Military						
Violence (log)	-0.145***	-0.159***	-0.120***	-0.101***	-0.0975***	-0.104***
	[0.0149]	[0.0200]	[0.0294]	[0.0298]	[0.0306]	[0.0302]
Marginal Effect	-0.04	-0.04	-0.03	-0.03	-0.03	-0.03
One S.D. Effect	-0.06	-0.06	-0.04	-0.04	-0.04	-0.04
Pseudo R-Square	0.02	0.07	0.09	0.11	0.11	0.12
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives (N=5891) & civilian control over military (N=5770)). Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

observed when we consider civilian control over the military institution as a proxy of democratic value. The absolute magnitude of the one S.D. effect under all econometric specifications is lower than the comparable estimates in table 3.4.

Table 3.6: Terrorism (January-May, 2009) and Democratic Values

	(1)	(2)	(3)	(4)	(5)	(6)
Preferences on Elected Representatives						
Terrorism (log)	-0.170***	-0.0856***	-0.0779***	-0.0667***	-0.0673***	-0.0599**
	[0.0120]	[0.0195]	[0.0241]	[0.0245]	[0.0248]	[0.0252]
Marginal Effect	-0.05	-0.03	-0.02	-0.02	-0.02	-0.02
One S.D. Effect	-0.07	-0.04	-0.03	-0.03	-0.03	-0.03
Pseudo R-Square	0.03	0.09	0.09	0.11	0.11	0.17
Preferences on Civilian Control over Military						
Terrorism (log)	-0.0552***	-0.194***	-0.0918***	-0.0765**	-0.0617**	-0.0622**
	[0.0125]	[0.0211]	[0.0300]	[0.0308]	[0.0313]	[0.0316]
Marginal Effect	-0.02	-0.05	-0.02	-0.02	-0.02	-0.02
One S.D. Effect	-0.03	-0.07	-0.03	-0.03	-0.03	-0.03
Pseudo R-Square	0.003	0.07	0.09	0.10	0.11	0.12
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives (N=5891) & civilian control over military (N=5770)). Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

3.5.4 Heterogeneous Effects

Male Vs. Female

In this section, we analyze the heterogeneous effects of terrorism risk on democratic attitudes, based on gender separated samples. The basic purpose is to compare disaggregated preferences with the aggregate estimates of table 3.4. Due to cultural and religious constraints on women in Pakistan, female labor force participation is significantly lower than male. In 2009, the female participation

rate in the job market was 24.1% as compared to 81.7% by their male counterpart (WDI, 2015). Similar sanctions also put constraints on the electoral turnout of women.[12] Hence, it can be argued that males vis-à-vis females are more exposed to the threat of terrorism, which may lead to a negative political attitude towards democratic values. To test this heterogeneous effect on the basis of gender, the regression results are given in table 3.7 for both democratic proxies.

Compare to the base line estimates in table 3.4, the gender separated sample results for males relative to females are consistent in statistical significance and signs for both democratic proxies. The important information that we can get from male-female heterogeneous samples in table 3.7 is that the absolute value of a one S.D. effect of terrorism is significantly higher in magnitude for males vis-à-vis females.

Urban Vs. Rural

There exists significant heterogeneity between rural-urban proximity based on socio-economic and religious characteristics across Pakistan. For example, about 65% of the total population live in rural municipalities. Rural agriculture sector provides employment to about 43.7% of the total labor force (Economic Survey, 2013). Similarly, 45% of the total terrorist attacks targeted districts with 100% urbanized municipalities. It may be argued that terrorists preferred targets are urban municipalities having higher population density and media coverage. Further, it can be argued that urban residents are more exposed to the risk of terrorism than rural inhabitants. Thus, it would be intriguing to analyze separately their democratic attitudes amid terrorism risk.

Table 3.8 shows regression results based on urban-rural distribution of population. The estimated regression coefficients and corresponding one S.D. effect are approximately similar between rural-urban distribution, when we consider the first measure of liberal democratic norm (elected representatives). Similarly, a one S.D. effect of terrorism is also analogous to the baseline regressions coefficients given in table 3.4.

An important conclusion can be drawn from the rural-urban classification when we compare democratic preferences on the 'civilian control over military.' One can clearly see in table 3.8 that

[12]The Election Commission of Pakistan (ECP) did not disintegrate yet the electoral turnout on the basis of gender, however, media reports during the election days show that female participation is generally lower then the male (Freedom House, 2014).

Table 3.7: Terrorism and Democratic Values: Male Vs. Female Preferences

	(1)	(2)	(3)	(4)	(5)	(6)
	Preferences on Elected Representatives					
	Male Sample (N=3134)					
Terrorism (log)	-0.175***	-0.229***	-0.310***	-0.295***	-0.307***	-0.266***
	[0.0168]	[0.0233]	[0.0337]	[0.0342]	[0.0359]	[0.0364]
Marginal Effect	-0.05	-0.07	-0.09	-0.09	-0.09	-0.08
One S.D. Effect	-0.08	-0.11	-0.14	-0.14	-0.14	-0.12
Pseudo R-Square	0.03	0.08	0.10	0.12	0.14	0.19
	Female Sample (N=2866)					
Terrorism (log)	-0.162***	-0.0139	-0.022	-0.0449	-0.0428	-0.0606*
	[0.0163]	[0.0254]	[0.0315]	[0.0328]	[0.0336]	[0.0345]
Marginal Effect	-0.05	-0.004	-0.006	-0.01	-0.01	-0.02
One S.D. Effect	-0.08	-0.006	-0.009	-0.02	-0.02	-0.03
Pseudo R-Square	0.03	0.15	0.16	0.18	0.18	0.22
	Preferences on Civilian Control over Military					
	Male Sample (N=3134)					
Terrorism (log)	-0.216***	-0.252***	-0.241***	-0.199***	-0.203***	-0.199***
	[0.0186]	[0.0248]	[0.0405]	[0.0413]	[0.0442]	[0.0446]
Marginal Effect	-0.06	-0.07	-0.06	-0.05	-0.05	-0.05
One S.D. Effect	-0.09	-0.11	-0.09	-0.08	-0.08	-0.08
Pseudo R-Square	0.05	0.13	0.17	0.20	0.22	0.23
	Female Sample (N=2866)					
Terrorism (log)	-0.0289*	-0.154***	-0.0947**	-0.0937**	-0.0905**	-0.0845**
	[0.0174]	[0.0262]	[0.0394]	[0.0403]	[0.0405]	[0.0407]
Marginal Effect	-0.007	-0.04	-0.02	-0.02	-0.02	-0.02
One S.D. Effect	-0.01	-0.06	-0.03	-0.03	-0.03	-0.03
Pseudo R-Square	0.001	0.07	0.08	0.09	0.09	0.11
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives & civilian control over military). Demographic controls include marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

the predicted values of the terrorism regressor and corresponding effects of a S.D. are 3-4 percentage points larger in magnitude than those observed in the baseline table 3.4, when we consider urban sample. In between comparison, the magnitude of a one S.D. change for urban sample is 8-10 percentage points larger than the rural.

A plausible explanation of significantly larger support for the military institution in urban areas is the consistent threat of terrorism. As mentioned above, urban population is more exposed to terrorism risk than rural residents, therefore, their preferences are relatively skewed towards military institution than parliament to protect their life and property.

Low, Medium and High Education

We extend the heterogeneous analysis to explore the disaggregated effect of education level on democratic norms amidst fear of terrorism. Literature on the relationship between education attainment and support for democratic values has explored positive, both statistically significant and insignificant, effects. Different studies analyzed the impact of education on civic participation, including voting behavior and participation (Acemoglu et al., 2005a; Glaeser et al., 2007; Spilimbergo, 2009), to mention few. Specifically, Lipset (1959) argues that "Education presumably broadens men's outlooks, enables them to understand the need for norms of tolerance, restrains them from adhering to extremist and monistic doctrines, and increases their capacity to make rational electoral choices ..."

Therefore, to explore democratic attitudes of educated individuals in the presence of terrorism hazard, tables 3.9 presents evidence based on three different categories of education. The first category (Edu 1) includes those observations which are either illiterate or completed primary level (five years of education). The estimated values of terrorism variable for both proxies of democratic values are approximately similar to our baseline regression specifications given in table 3.4.

The second category (Edu 2) consists of education level above primary (five years) till 10 years of schooling. Again, the results are in line with the baseline specification in signs, significance and magnitudes.

Finally, the third group (Edu 3) categorizes individuals whose education level is above 10 years of schooling. Compare with the baseline regressions, the coefficients of terrorism are relatively

Table 3.8: Terrorism and Democratic Values: Rural Vs. Urban Preferences

	(1)	(2)	(3)	(4)	(5)	(6)
	Preferences on Elected Representatives					
	Urban Sample (N=2028)					
Terrorism (log)	-0.186***	-0.0643**	-0.158***	-0.150***	-0.167***	-0.194***
	[0.0206]	[0.0297]	[0.0540]	[0.0554]	[0.0593]	[0.0611]
Marginal Effect	-0.06	-0.02	-0.05	-0.05	-0.05	-0.06
One S.D. Effect	-0.09	-0.03	-0.08	-0.08	-0.08	-0.09
Pseudo R-Square	0.04	0.09	0.09	0.11	0.13	0.19
	Rural Sample (N=3972)					
Terrorism (log)	-0.195***	-0.158***	-0.169***	-0.154***	-0.153***	-0.152***
	[0.0161]	[0.0246]	[0.0261]	[0.0269]	[0.0276]	[0.0282]
Marginal Effect	-0.06	-0.05	-0.05	-0.05	-0.05	-0.05
One S.D. Effect	-0.09	-0.08	-0.08	-0.08	-0.08	-0.08
Pseudo R-Square	0.03	0.11	0.11	0.13	0.13	0.19
	Preferences on Civilian Control over Military					
	Urban Sample (N=2028)					
Terrorism (log)	-0.170***	-0.222***	-0.250***	-0.233***	-0.207***	-0.198***
	[0.0207]	[0.0297]	[0.0678]	[0.0690]	[0.0679]	[0.0693]
Marginal Effect	-0.06	-0.07	-0.08	-0.08	-0.07	-0.06
One S.D. Effect	-0.09	-0.11	-0.12	-0.12	-0.11	-0.09
Pseudo R-Square	0.03	0.13	0.14	0.16	0.18	0.22
	Rural Sample (N=3972)					
Terrorism (log)	-0.0237	-0.0603**	-0.102***	-0.0724**	-0.0600*	-0.0506
	[0.0176]	[0.0257]	[0.0303]	[0.0308]	[0.0322]	[0.0328]
Marginal Effect	-0.006	-0.01	-0.02	-0.02	-0.01	-0.01
One S.D. Effect	-0.009	-0.02	-0.03	-0.03	-0.02	-0.02
Pseudo R-Square	0.001	0.05	0.07	0.08	0.08	0.08
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives & civilian control over military). Demographic controls include gender, marital status, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

unstable in signs, significance and absolute values. Two possible reasons may explain this volatile behavior of coefficients. First, the sample size of this category is low compare to the first two, which might affect the robustness of coefficients. Second, educated individuals may not be satisfied from the public good provision of parliament and legislatures, nevertheless, they also want the military institution under the control of democratic representatives.

Table 3.9: Terrorism and Democratic Values: Educational Heterogeneity

	(1)	(2)	(3)	(4)	(5)	(6)
	Preferences on Elected Representatives					
	Five Years of Education (N= 2682)					
Terrorism (log)	-0.211***	-0.105***	-0.122***	-0.142***	-0.139***	-0.139***
	[0.0192]	[0.0284]	[0.0340]	[0.0355]	[0.0366]	[0.0370]
	Six-Ten Years of Education (N= 1942)					
Terrorism (log)	-0.189***	-0.129***	-0.168***	-0.157***	-0.163***	-0.164***
	[0.0199]	[0.0290]	[0.0377]	[0.0384]	[0.0389]	[0.0397]
	Above Ten Years of Education (N=1259)					
Terrorism (log)	-0.0965***	-0.0710*	-0.121**	-0.0999*	-0.094	-0.0927
	[0.0233]	[0.0363]	[0.0586]	[0.0586]	[0.0606]	[0.0619]
	Preferences on Civilian Control over Military					
	Five Years of Education (N=2682)					
Terrorism (log)	-0.0466**	-0.0918***	-0.184***	-0.173***	-0.160***	-0.158***
	[0.0202]	[0.0296]	[0.0411]	[0.0421]	[0.0435]	[0.0437]
	Six-Ten Years of Education (N= 1942)					
Terrorism (log)	-0.106***	-0.202***	-0.137***	-0.124***	-0.126***	-0.128***
	[0.0214]	[0.0316]	[0.0476]	[0.0478]	[0.0484]	[0.0496]
	Above Ten Years of Education (N=1259)					
Terrorism (log)	-0.246***	-0.249***	-0.114*	-0.0842	-0.105	-0.0951
	[0.0263]	[0.0375]	[0.0692]	[0.0727]	[0.0733]	[0.0717]
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives & civilian control over military). Demographic controls include gender, marital status, rural/urban, age and age-square. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

3.6 Transmission Mechanisms: Terrorism to Democratic Attitudes

Exposure to terrorism shocks and consequent risk to life and property affects individuals democratic preferences through several transmission mechanisms (see section 3.2). Here, we can only explore the income and information flow channels, due to the availability of individual level records on nominal income and mediatic exposure in the survey data.[13]

3.6.1 The Income Channel

Economic literature has explored that terrorism and civil conflict impose a significant economic cost on different sectors of the economy. Terrorism and violence reduce tourism, foreign direct investment, trade, transportation and telecommunication, etc. (Abadie and Gardeazabal, 2003; Chen and Siems, 2004; Frey et al., 2007; Guidolin and La Ferrara, 2007; Sandler and Enders, 2008), to mention few. Similarly, statistically, both significant and insignificant positive correlations have been analyzed between economic development and liberal democratic norms. For instance, the positive statistical association between higher income per capita and democracy is the cornerstone of the influential modernization theory (Lipset, 1959). The hypothesis that higher income per capita causes a country to be democratic is also supported by (Rueschemeyer et al., 1992; Huntington, 1993; Barro, 1999). Nevertheless, Acemoglu et al. (2005b) studied that controlling regression for country fixed effects removes the statistical association between income per capita and various measures of democracy.

3.6.2 The Information Flow Channel

Social scientists, political economists and defense analysts argue that exposure to media through its various instruments (electronic and print media, social media and communicative devices like cell phone) play a significant role in the promotion of terrorist activities (Nacos, 2002; Lewis, 2005; Rohner and Frey, 2007; Seib and Janbek, 2010; Hoffman, 2013) among others. For instance,

[13] We repeat the same exercise while considering district level economic development, multiple deprivation index (MDI). The regression results do not change significantly and available on reader's request.

Hoffman (2013) argues that, "without the media's coverage, the act's impact is arguably wasted, remaining narrowly confined to the immediate victim(s) of the attack, rather than reaching the wider 'target audience' at whom the terrorists' violence is actually aimed." Correspondingly, research revealed a significant positive relationship between the use of media and political mobilization and knowledge, particularly during election campaigns (Berelson, 1954; Drew and Weaver, 1998; Tolbert and McNeal, 2003; Eveland Jr et al., 2005; Dalrymple and Scheufele, 2007). For this analysis, media exposure means that an individual has an access to at least one of the sources of information flow including TV, radio, newspaper (print and electronic), internet (social media) and cell phone.

3.6.3 The Empirics

Table 3.10 presents regression estimates on nominal income and mediatic exposure through which terrorism risk may change political preferences. In the upper part of table 3.10, income does not have consistent effect on preferences for elected representatives when it is interacted with terrorism variable. The coefficient of media exposure changes its sign but statistically significant when interacted with terrorism. The negative effect of mediatic exposure given high level of terrorism risk shows that media coverage of terrorism plays a significant role in the transition of political preferences. Similar results are observed in the lower part of table 3.10 for preferences on civilian control over military.

3.7 An Instrumental Variable Approach

3.7.1 Instrument(s)

In our empirical analysis, we control the baseline regression with several demographic, socioeconomic and religious characteristics at both individual and district level. Specifically, we emphasized the determinants that might influence, both, the individual preferences about democratic values and the number of terrorist events, in order to minimize the likelihood of spurious correlation in the econometric analysis. Similarly, we separated samples on the basis of gender, urbanization and education level to assess heterogeneous effects. We also argue that district level terrorist at-

Table 3.10: Income, Media Exposure and Democratic Values

	(1)	(2)	(3)	(4)
	Preferences on Elected Representatives			
Nominal Income	0.0236***	0.0348***	0.0239***	0.0365***
	[0.00610]	[0.0118]	[0.00607]	[0.0119]
Media Exposure	0.213***	0.214***	0.438***	0.448***
	[0.0691]	[0.0692]	[0.126]	[0.127]
Terrorism (Log)	-0.148***	-0.112***	-0.104***	-0.0617
	[0.0319]	[0.0430]	[0.0348]	[0.0463]
Nominal Income*Terrorism (Log)		-0.00387		-0.00434
		[0.00322]		[0.00321]
Media Exposure*Terrorism (Log)			-0.0848**	-0.0881**
			[0.0357]	[0.0359]
R-Square	0.13	0.13	0.13	0.13
	Preferences on Civilian Control over Military			
Nominal Income	0.0204***	0.00504	0.0217***	0.00888
	[0.00450]	[0.00716]	[0.00453]	[0.00739]
Media Exposure	0.460***	0.454***	1.019***	0.998***
	[0.0618]	[0.0620]	[0.107]	[0.108]
Terrorism (Log)	-0.105***	-0.109***	-0.0931***	0.0328
	[0.0350]	[0.0387]	[0.0352]	[0.0439]
Nominal Income*Terrorism (Log)		0.00657***		0.00545**
		[0.00242]		[0.00242]
Media Exposure*Terrorism (Log)			-0.229***	-0.223***
			[0.0328]	[0.0330]
R-Square	0.16	0.17	0.17	0.17
Province Fixed Effects	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y
Language Controls	Y	Y	Y	Y
Religious Controls	Y	Y	Y	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms (govern by elected representatives (N=4071) & civilian control over military (N=4035)). Demographic controls include gender, marital status, rural/urban, age and age-square. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

tacks are exogenous to individual level political preferences. Nevertheless, a perception prevails that terrorists do not believe on the democratic system, thus, target districts with higher liberal norms. If it is the case, the estimated coefficient of terrorism should be positive, which is not the case. And if attacks are caused by democratic values, then, the parameter coefficient of terrorism in this analysis is under estimated and bounded from below. It could have been even larger, if attacks were explicitly exogenous. However, we still utilize an instrumental variable identification strategy, as we suspect that there may be endogeneity in our specification due to omitted variables or measurement error.

We use *distance of a district from the Durand Line* as an instrument as we believe that most of the terrorist organizations have safe havens in the impervious mountainous terrain of the Pak-Afghan border due to high cost of state policing (Jones and Fair, 2010; Johnston and Sarbahi, 2013). Intuitively, districts closer to the Pak-Afghan border are easy targets for terrorists as compared to distant districts (see figure 3.5). The identifying assumption is that the variable of distance affects only the distribution of terrorism, and does not have an impact on democratic preferences. If this assumption is considered further, we can argue that distance from the Durand Line can affect political preferences through socio-economic and religious heterogeneity across districts. However, there are variations within a province irrespective of the distance from the Durand Line. All the provinces and districts are governed by the same laws, have Muslim majority population and speak different languages, irrespective of any distance variable. Yet, we still control our first stage regression with the provincial fixed effects.

We also use *religious fractionalization* as an instrument when we analyze the correlation between violent conflicts (alternative to terrorist attacks) and support for democratic values. Apparently, there exists a large number of religious Muslim sects and subsects in Pakistan, due to different interpretations of the Sharia. It is argued that in districts with more religious fractionalization, there is a higher probability of religious and communal conflict (Esteban and Ray, 2008, 2011; Esteban and Mayoral, 2011; Esteban et al., 2012). Similarly, this instrument can be excluded from the second stage regression, since different interpretations of the Sharia law do not explicitly discuss modern political and democratic processes. Hence, we believe that sect affiliation does not directly affect political and democratic preferences other than through *violent conflicts*. We

construct the Herfindahl–Hirschman Index (HHI) of religious concentration based on district level different religious sects and subsects within Islam. The summary statistics of HHI is given in table 3.3 and percentage distribution of religious fractionalization is reported in table 3.14 in appendix 3.9 .

3.7.2 IV Regression Results

As discussed in the previous section, the negative relationship we estimated between terrorism/violence and democratic values, for different reasons, might be due to endogeneity. To control for this, we use an instrumental variable identification strategy while instrumenting terrorist incidents by the *distance from the Durand Line* and violent conflicts by *religious fractionalization*. Table 3.11 reports IV regression results of terrorism for the two proxies of democratic values. The first stage regression provides evidence of a statistically significant negative association between distance from the Durand Line and frequency of terrorist attacks. Similarly, the second stage coefficients of terrorism variable are similar in sign and significance, except specification (1). The magnitudes of the terrorism coefficients are higher than the baseline regressions in table 3.4. A one S.D. change in terrorist attacks decreases support for the elected legislatures by 5-11%. Similarly, a one S.D. increase in terrorist attacks raises the support for military institutions by 8-11% in different econometric specifications.

Similar IV exercise is also repeated to analyze the impact of aggregate violent conflicts on democratic norms, which are given in table 3.12. The first stage regression validates that *religious fractionalization* could be one of the major cause of violence in Pakistan. The regression estimates of the violence regressor in the second stage has the same signs, magnitude and statistical significance under different specifications, when compare with the baseline specifications in table 3.5. A one S.D. increase in the aggregate violence lowers preferences for elected parliament by 4-11%. Similarly, a one S.D. rise in the aggregate violence likely to increase support for military institutions by 6-7%.

Table 3.11: Terrorism and Democratic Values: IV Estimations

	(1)	(2)	(3)	(4)	(5)	(6)
First Stage Instrument						
Distance from the Durand Line (log)	-0.531***	-0.373***	-0.318***	-0.316***	-0.400***	-0.419***
	[0.0433]	[0.0670]	[0.0659]	[0.0649]	[0.0585]	[0.0579]
Wald test (p-value)	0.0001	0.741	0.071	0.111	0.011	0.003
F test	37.68	30.99	23.62	23.99	47.30	51.48
Preferences on Elected Representatives						
Terrorism (log)	0.00831	-0.118***	-0.207***	-0.196***	-0.229***	-0.238***
	[0.0174]	[0.0215]	[0.0382]	[0.0393]	[0.0396]	[0.0406]
Marginal Effect	0.003	-0.03	-0.06	-0.06	-0.07	-0.06
One S.D. Effect	0.005	-0.05	-0.09	-0.09	-0.11	-0.09
Preferences on Civilian Control over Military						
Terrorism (log)	-0.233***	-0.247***	-0.260***	-0.238***	-0.196***	-0.211***
	[0.0181]	[0.0209]	[0.0442]	[0.0448]	[0.0446]	[0.0448]
Marginal Effect	-0.06	-0.06	-0.07	-0.06	-0.05	-0.05
One S.D. Effect	-0.09	-0.09	-0.11	-0.09	-0.08	-0.08

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. IVProbit regressions predicting preferences for institutional norms (govern by elected representatives (N=5891) & civilian control over military (N=5770)). Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

Table 3.12: Violence and Democratic Values: IV Estimations

	(1)	(2)	(3)	(4)	(5)	(6)
First Stage Instrument						
HHI of Religious Fractionalization	0.363***	0.902***	0.809***	0.702***	0.291***	0.280***
	[0.0471]	[0.0711]	[0.0726]	[0.0733]	[0.0706]	[0.0704]
Wald test (p-value)	0.26	0.16	0.66	0.76	0.09	0.02
F test	59.06	158.77	125.14	91.69	18.30	16.62
Preferences on Elected Representatives						
Violence (log)	0.0212	-0.116***	-0.223***	-0.216***	-0.274***	-0.278***
	[0.0154]	[0.0216]	[0.0449]	[0.0467]	[0.0487]	[0.0505]
Marginal Effect	0.007	-0.03	-0.06	-0.06	-0.08	-0.08
One S.D. Effect	0.01	-0.04	-0.08	-0.08	-0.11	-0.11
Preferences on Civilian Control over Military						
Violence (log)	-0.224***	-0.231***	-0.255***	-0.237***	-0.245***	-0.270***
	[0.0141]	[0.0205]	[0.0502]	[0.0521]	[0.0534]	[0.0539]
Marginal Effect	-0.06	-0.06	-0.07	-0.06	-0.06	-0.07
One S.D. Effect	-0.08	-0.08	-0.10	-0.08	-0.08	-0.10

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. IVProbit regressions predicting preferences for institutional norms (govern by elected representatives (N=5891) & civilian control over military (N=5770)). Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

3.8 Conclusion

Terrorism and violence produce not only direct damages, but also a modification of individual attitudes in a number of domains, including risk, altruism and impatience (Voors et al., 2012). In this paper, we investigate the institutional legacy of persistent exposure to terrorism by studying its impact on individual attitudes towards democracy. We exploit information on political attitudes from a micro survey conducted on 6,000 respondents in Pakistan in 2009, together with district level information on exposure to terrorism between 2004 and 2008. We find that, controlling for a number of individual and district characteristics, persistent exposure to terrorism is associated to a significantly lower support for democratic values. A one-standard-deviation increase in terrorist attacks in a district is associated to an individual support for elected legislators that is lower by 7-9% (depending on the specification). Very similar results hold for district level exposure to violence (more broadly defined) and for individual support for civilian control over the military. These results are robust to the inclusion of different sets of control variables, as well as to different sample splits based on gender, urbanization and education level. This attenuates omitted variable concerns.

We further argue that the correlation we document is likely to reflect a causal impact of terrorism exposure on political preferences. First, our measure of exposure to terrorism is predetermined relative to the measure of political attitudes. This attenuates endogeneity concerns, but per se it is not enough to rule out reverse causation, which might drive the results if political preferences are persistent and affect the choice of terrorists' targets. Yet, if terrorists attack more frequently more democratically oriented districts, for instance with the aim of undermining democratic systems whose outcomes they do not like, one should expect a positive correlation, so that our results would be reinforced. More troublesome for the causal interpretation of our findings would be the possibility that terrorists preferentially target less democratic districts. To deal with this possibility, we consider an instrumental variable strategy based on instrumenting terrorism and violence by the distance from the Pak-Afghan border and by religious fractionalization. Such analysis confirms our baseline results, suggesting that persistent exposure to terrorism and violence reduces support for democracy and thus has a negative institutional legacy in terms of a country's chances to keep

a democratic system. To the extent that results from Pakistan can be applied to non-democratic countries threatened by terrorism, one might conclude that exposure to terrorism also reduces the chances of a transition to democracy.

In the words of Voors et al. (2012), "while exposure to violence encourages risk-taking and increases the weight people attach to their fellow community members' welfare, arguably positive features for development (at least within certain bounds), it also seems to trigger impatience." Our contribution highlights the institutional legacy of persistent exposure to terrorism and violence by showing that they decrease support for democratic institutions. An interesting avenue of future research is to investigate how these different effects interact with one another and shape a country's economic and institutional response to terrorism.

3.9 Chapter 3 Appendix

3.9.1 Question Wordings

Democratic Preferences

How important is it for you to live in a country that is governed by representatives elected by the people?
-Extremely important
-Very important
-Moderately important
-Slightly important
-Not important at all

The 1973 Constitution of Pakistan says civilians should control the military. This means the military cannot take action without orders from civilian leaders. In your opinion, how much control should civilians have over the military?
-Complete control
-A lot of control
-A moderate amount of control
-A little control
-No control at all

Demographic Controls

Are you married?
-Yes

-No

What is your age in years?

What was the highest class you completed?
-Primary
-Middle
-Matriculate
-Intermediate (F.A/F.Sc)
-Graduate (B.A/B.Sc)
-Professionals (M.A, M.Sc, Ph.D or other professional degree)
-Illiterate

Can you read in any language with understanding?
-Yes
-No
-If yes, what language?

Can you write in any language, more than signing your name?
-Yes
-No
-If yes, what language?

Can you solve simple math (addition, subtraction) problems? Like 10 plus 7, or 30 divided by 5?
-Yes
-No
-Not sure

Sex:
-Male
-Female

Religious Controls

Do you attend dars-e-Quran?
- *Yes*
- *No*

How many times do you go to dars-e-Quran per week on average? (Open-ended, post-code as daily or otherwise).

Are you Sunni or Shi'ite?
-Sunni
-Shi'ite
-Non-Muslim

Seeing the current situation in Pakistan, do you think that Shari'a should play a much larger role in Pakistan law, a somewhat larger role, about the same role, a somewhat smaller role or a much smaller role?
- Much larger role
- Somewhat larger role
- About the same role
- Somewhat smaller role
- Much smaller role

Economic Controls/Opinions

How much money in cash did you and your family earn in the last month?

What is the approximate monthly income in your household?
-Less than 3000 rupees
-3000 to 10,000 rupees
-10,001 to 15,000 rupees
-15,001 to 25,000 rupees
-More than 25,000 rupees

Do you have the following?
-Television
-Air conditioning
-Lives on street with street lamps
-Whether home has its own outdoor area

Do you have a personal vehicle (car, tractor, motorcycle, etc.)?
-Yes
-No

Do you ever go on line to access the internet, do web site browsing or to send and receive email?
-Yes
-No

Do you have a personal cell phone?
-Yes
-No

Compared to your neighbors, did you and your family earn much more, a little more, about the same, a little less or much less?
- Much more
-A little more
-About the same
-A little less
-Much less

Now thinking about your personal financial situation, would you say that over the past year

it has gotten much better, gotten a little better, stayed about the same, gotten a little worse or gotten much worse?
-Gotten much better
-Gotten a little better
-Stayed about the same
-Gotten a little worse
-Gotten much worse

How big of a problem is economic inequality in Pakistan?
-Extremely big
-Very big
-Moderately big
-Slightly big
-Not big at all

Some people say Pakistan needs land reform because of the feudal system in some areas. How much is land reform needed in Pakistan?
-Very much needed
-Needed to a considerable extent
-Needed to some extent
-Not needed at all

3.9.2 Definition of Variables and Data Sources

Table 3.13: Description of Variables and Data Sources

Variable	Description	Source
Terrorism	The Global Terrorism Database (GTD) defines a terrorist attack as the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious or social goal through fear, coercion or intimidation. The district level (2004-2008) aggregate values are calculated.	Global Terrorism Database (2013)
Violence	The Empirical Studies of Conflict Project (ESOC) defines a violent conflict which involves one of the following types of violence. Sectarian, ethnic, communal, tribal, assassination, target killing and violent riots. The district level (2004-2008) aggregate values are calculated. Violence is defined as any publicly reported act that: (1) is aimed at attaining political, economic, religious or social goals; (2) entails some level of violence or threat of violence including property violence as well as violence against the people; and (3) intentional– the result of a conscious calculation on the part of a perpetrator.	De Mesquita et al. (2013)
Governance by Elected Representatives	How important is it for you to live in a country that is governed by representatives elected by the people?	Survey
Civilian Control over Military	The 1973 Constitution of Pakistan posits civilian control of military, not vice versa. This means the military cannot take action without orders from civilian leaders. In your opinion, how much control should civilians have over the military?	Survey
Distance of a District from the Pak-Afghan border	Distance is calculated in kilometers from the centroid of Pak-Afghan border which is also called the 'Durand Line.'	Google Maps Distance Calculator, http://www.daftlogic.com/projects-google-maps-distance-calculator.htm
Herfindahl–Hirschman Index (HHI)	We construct (HHI) for religious concentration based on district level different religious sects and subsects within Islam.	
Population Density	Population per unit area or unit volume.	Ministry of Finance (2014)
Urbanization	FBS defines urbanization as places with municipal corporation, town committee or cantonment.	Ministry of Finance (2014)
Multiple Deprivation Index (MDI)	MDI is calculated at district level from education, health, housing quality and congestion, residential housing services and employment variables. MDI varies between (0-100), where '0' representing no deprivation and '100' representing maximum degree of deprivation.	Jamal and Khan (2007)
Socio-economic Controls	Nominal income and wealth index (average of 10 assets held by a respondent).	Survey
Economic Opinions	Opinions on inequality, land reforms, current financial situation relative to time and space, etc.	Survey
Demographic Controls	Residential status, gender, age, marital status and education.	Survey
Religious Controls	Sect type, recitation of the holy book (Quran), frequency of recitation and role of Sharia in the current legal system.	Survey

Table 3.14: District wise distribution of religious fractionalization

	Religious Sect	Percent (%)
1	Ahl-e-Sunnat	63.19
2	Jamaat-e-Islami	10.23
3	Ahl-e-Hadith	9.10
4	Deobandi	9.33
5	Barelvi	4.41
6	Shi'ite	3.75

Source: Blair et al. (2013) and Ministry of Finance (2014).

Table 3.15: Terrorism and Democratic Values

	Elected Rep.	Freedom of Expression	Freedom of Assembly	Property Rights	Military Control
Terrorism (log)	-0.138***	-0.225***	-0.188***	-0.052	-0.143***
	[0.024]	[0.037]	[0.041]	[0.042]	[0.0296]
Pseudo R^2	0.17	0.19	0.20	0.24	0.13
Province Fixed Effects	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y	Y
Economic Controls	Y	Y	Y	Y	Y
Language Controls	Y	Y	Y	Y	Y
Religious Controls	Y	Y	Y	Y	Y

Note: Dependent variable is a dummy which captures individual political attitudes for liberal democratic values. Probit regressions predicting preferences for institutional norms. Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include nominal income, occupation, assets, multiple deprivation index, perceptions on land reforms, inequality, future financial expectations and financial comparison with the neighborhood. Language controls for five main languages speak across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, the frequency of recitation and the current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets. $***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

Chapter 4

Deterrence Through Monopolized Violence: The Frontier Crimes Regulation of Pakistan

4.1 Introduction

Since 1960, more than half of the countries in the world have experienced violent civil conflicts. During the more recent period of the 1990s, over 20% of the nations were exposed to internal conflicts and violence (Blattman and Miguel, 2010). To understand the longstanding history of violence and conflicts throughout the world, previous studies on topics of political economy find various social, economic and political factors of internal violence and conflicts. For instance, (Grossman, 1991; Collier and Hoeffler, 2007; Dal Bó and Dal Bó, 2011) observe a high correlation between poverty and civil conflict; (Miguel et al., 2004; Miguel and Satyanath, 2011) discuss that economic growth (instrumented by variation in rainfall), has a negative impact on conflict; and (Murshed, S Mansoob and Gates, Scott, 2005; Humphreys and Weinstein, 2008) analyze the relationship between economic development (proxied by different indicators) and violence. Furthermore, a country might be exposed to frequent violence and conflict if it lacks Max Weber's famous proposition of a state capacity, that is, "a human community that (successfully) claims the monopoly of the legitimate use of physical force within a given territory Weber (1946)" (Powell, 2013).

However, in some territories of the developing world, the capacity of states in establishing a monopoly of violence in a society is still missing or remains ineffective; which is a defining feature of a modern state according to Max Weber's proposition. In this context, several hypotheses have

been presented and tested to understand the choice of (un)governed territories during colonial times and afterwards. More specifically, the literature investigates the reasons why some institutions were put in a given place, while others were not. Some of these hypotheses include: (i) The initial set of institutions, that is, the availability and cost of extracting resources (Diamond, 1997; Gallup et al., 1999; Acemoglu et al., 2001; McArthur and Sachs, 2001). For British Colonizers, it was cost effective and optimal to set up extractive institutions in some areas as opposed to settling in the colonies. (ii) Difficult geography (Herbst, 2014), rough terrain (Fearon and Laitin, 2003), tribal culture and history (Ginsburg, 2011; Benson and Siddiqui, 2014) and military advantage with indigenous groups, made complete colonization costly and impractical (Fearon and Laitin, 2003; Nunn and Puga, 2012). (iii) It was easier and more efficient to maintain law and order in some regions through indirect governance in compliance with the local culture, tradition and norms (Scott, 2009; Padr I Miquel and Yared, 2012).

Currently, ungoverned territories where a state does not have an effective presence exist in many developing countries. For instance, the Republic of the Congo, Liberia, Rwanda, Somalia and Sierra Leone collapsed due to a lack of proper institutions and infrastructure, which made them incapable of effectively taking up responsibilities that are associated with a modern state. Similarly, Colombia, Peru, Guatemala, El Salvador and Nicaragua in Latin America have been experiencing prolonged civil conflicts, due to the absence of the writ of the state in large parts of the country (Acemoglu et al., 2013). As a result, it provides a space for criminals, smugglers, drug manufacturers and terrorists to operate and produce negative externalities not only locally, but has also led to its proliferation at the global level due to international integration. A classical example of ungoverned space and its local and global negative spillovers is the Federally Administered Tribal Areas (FATA) in the North-West of Pakistan, which is ruled under the Frontier Crimes Regulation (FCR) of 1901, a system under which governance is largely left under the control of tribal chiefs and elders, who are called Malak in the local language.[1] Since the British rule, FATA has been governed under the FCR, which has more ingredients of the customary law than the contemporary civil and criminal laws. Before the incident of 9/11, state provision in FATA was limited to a few services including education, health and a road network but lacked modern law enforcement institutions

[1]Malak is a Pushto word, literally means elder.

like the judiciary, police and military due to its tribal setup and traditions. Consequently, over the years, FATA transformed from a sanctuary of criminals to a safe haven for terrorists who poured in and found refuge there.

Due to the absence of formal law enforcement institutions, the residents of FATA were exposed to tribal violence, honor killings[2], sectarian and ethnic conflicts, violence related to drug dealings and illegal control of natural resources due to weak property rights. In some instances these conflicts would continue for months or even years between different tribes but it never became a security threat, in the form of civil violence, to the country. As a result, the legislators in the federal government had never considered the preferences of the residents of FATA to provide them with public goods such as access to formal institutions.

After the incident of 9/11 and the subsequent NATO[3] attack against Al-Qaida leaders in Afghanistan, the Government of Pakistan was compelled to police its border with Afghanistan (Durand Line) to the North-West to apprehend the militants who would try to enter into FATA. It was for the first time, since Pakistan's independence from British rule in 1947, that the military entered into FATA to contain the infiltration of militants into the tribal territory. Initially, military personnel were deployed in two districts (North and South Waziristan) of FATA that were considered the sanctuary shelter of Taliban and Al-Qaida extremists. However, with the passage of time, the military troops were also permanently deployed in two more districts (Kurram and Orakzai). It is important to note that the military intervention in FATA was exogenous to different types of tribal violence and conflicts.[4] It's main objective was to search for Al-Qaida terrorists in Pakistan's mountainous Waziristan districts and launch an offensive against them to drive them out. By similar argument, it was exogenous to domestic terrorism until 2007 when military intervention was aimed at domestic terrorist groups. The exogenous variation in the intervention will help to identify the causal impact of the presence of the military institution on tribal violence and conflicts in FATA during 2001-2011.

The selective intervention of the military over time and districts allows the use of the Difference-

[2]A traditional practice in some countries of killing a family member who is believed to have brought shame on the family.

[3]NATO stands for North Atlantic Treaty Organization.

[4]Throughout this text, the terms violence and violent conflicts are used interchangeably.

in-Differences (DID) empirical strategy to compare average treatment effects before and after the intervention in the treated and control districts. It uses district-level violence and terrorism monthly data from 2001-2013 to empirically test the effects of the military intervention on violence and terrorism outcomes. The DID estimates show that the military intervention as a law enforcement institution has a significant long run deterrence effect on violence and conflicts in the treated districts. The decreasing effect is robust and consistent in sign and significance in different time periods, specifications and measures of violence. A similar exercise is repeated for terrorism as the outcome variable. Due to the partial exogeneity of intervention to terrorist attacks, the DID results in this case may or may not be interpreted as causal. However, the results of different specifications show a decreasing but inconsistent effect of the intervention against terrorist attacks in the treated group. In short, there is compelling evidence that state capacity in the form of monopolized violence decreases violent conflicts.

The rest of the chapter proceeds as follows: Section 4.2 discusses the history of the FCR as a criminal justice system in FATA. Identification strategy to explore causal effects of the intervention is explained in section 4.3. Relevant data and its statistical properties are presented in section 4.4. Section 4.5 provides empirical results based on the identification while section 4.6 concludes the chapter.

4.2 Institutional Setup

4.2.1 The Frontier Crimes Regulation

Until the 1840s, British rulers were successful in implementing the modern day institutions in major parts of the Indian sub-continent. These institutions included the contemporary legal system, police, tax institutions and other bureaucratic structures. Nevertheless, they were resisted by the local tribes in the North-West Frontier Provinces (NWFP) of Pakistan, comprised of the present day Khyber Pakhtunkhwa (KPK) and province of Baluchistan. A large portion of the NWFP was demarcated as Federally Administered Tribal Areas (FATA) and was given a semi-autonomous status. The legal system of the British, which was implemented throughout their ruled territory,

was codified through the 1860 Indian Penal Code and the Code of Criminal Procedure. It was, however, rejected by the local tribal leaders in favor of their existing legal system based on customs, traditions and social norms. It was an incentive for the elite tribes to reject the British legal system in favor of the customary legal institutions (Tanguay Renaud, 2002).

Due to the defiant and resisting behavior of the Pashtun, difficult geography and rough terrain in the NWFP, the British Raj finally decided against including FATA in their legal administrative system. Similarly, they eventually decided to stop fighting against the implementation of the customary legal system in the NWFP, but rather appropriating it in what would be codified in 1901 as Frontier Crimes Regulation (FCR). The main idea of the FCR is to appoint a single 'political agent' in charge of the entire region who was to be selected by the local Governor. In criminal trial cases, FCR gives more weight to the decisions make by the 'Jirga,' which is an informal local council of elders. However, the final decision was given to the political agent who could either approve of the Jirga's ruling or overturn it. The convicted criminals were not allowed to appeal, and neither were they given the right to legal representation nor the right to present reasoned evidence. FCR was based on collective punishment where a political agent and Jirga could pass collective judgment either on the relatives of the convict or on the whole tribe. Clearly, the procedure and ruling of the FCR were highly customary, and contrary to the structure of the British legal system.

After the independence of Pakistan in 1947, FCR was gradually either revoked or modified over time. Till 1977, FCR was rolled back from the majority of districts with the exception of FATA, which is spread out over an area of about 27,224 square kilometers and forms approximately 3% of Pakistan's area.[5] Over the years, the unequal system led to the lack of other modern institutions, including tax collection, police, army and public services in FATA compared to the rest of the country. Even in the 21st century, the FCR region does not have a modern judicial system, a police force, an independent legislative body and a formal bureaucratic structure. It is under the control of a political agent who is appointed by the Governor of KPK province. Before the deployment of the army, political agents in the respective districts were the sole law enforcement entities.

[5]Administratively, FATA comprises seven agencies (districts) including Bajaur, Mohmand, Khyber, Orakzai, Kurram, North Waziristan and South Waziristan. Similarly, it includes Fronter Regions (sub districts) named FR. Peshawar, FR. Kohat, FR. Bannu, FR. Lakki Marwat, FR. Tank and FR. Dera Ismail Khan.

FATA became the territory of Pakistan under Article 1 of the 1973 Constitution and under Articles 51, 59 and 247 of the same Constitution; it remains under the direct executive authority of the president. This means that laws formulated by the lower house are not applicable in FATA, unless ordered by the president. It is represented in the lower house (National Assembly) and the upper house (Senate) by 12 and 8 members, respectively. This is equal to 3.5% of the total elected representatives in the lower house and about 8% in the upper house.

Figure 4.1 below shows how the function of FCR declined over the years starting from 1901. It can be seen that the territory under FCR almost remained unchanged after 1977 and to this date FATA does not have a formal legal system and other institutions. In figure 4.2, the shaded area represents FATA, which is under the FCR even today. Figure 4.3 portrays the geographic location of FATA.

The following section will discuss how 9/11 caused the establishment of a military institution in FATA as the law enforcement alternative and its impact on different types of tribal violence, including ethnic and sectarian conflicts, clashes over natural resources and terrorism.

Figure 4.1: FCR Application over Time (Callen et al., 2014)

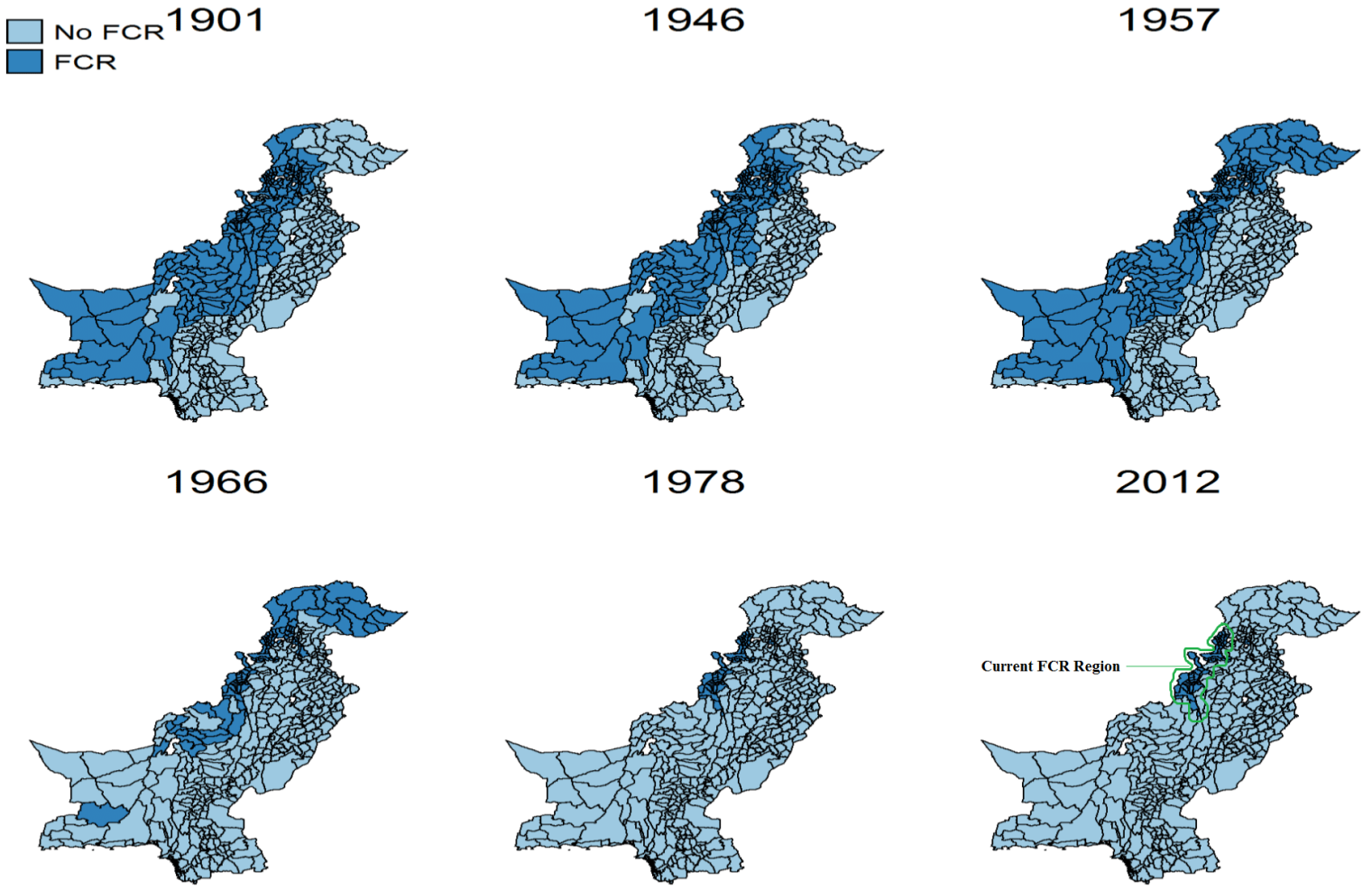


Figure 4.2: The Shaded Area is the Current FCR Region

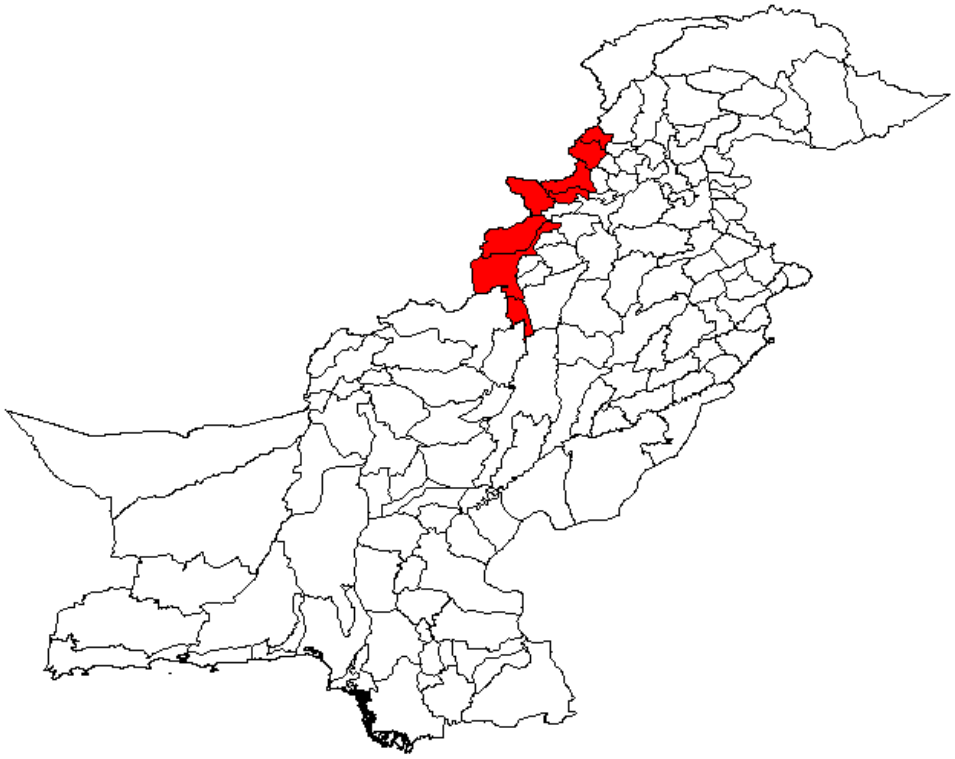


Figure 4.3: FCR Region and its Geographic Location

4.2.2 Law Enforcement through Monopolized Violence

After the 9/11 terrorist attacks, the United Sates and its allied forces entered into a military war against the Taliban government in Afghanistan to target Al-Qaida leadership. Pakistan being a neighbor of Afghanistan and an ally of the US, permitted landing rights to the US Intelligence and Military units, allowed access to some air and sea bases, and provided immigration and intelligence information (Musharraf, 2006). For the first time in the history of the country, Pakistan's armed forces entered into the ungoverned space along the Durand Line, FATA. The intervention was initially limited to two districts to deter the infiltration of Taliban/Al-Qaida militants from Afghanistan to Pakistan. Nevertheless, it provided an opportunity to the government to exercise Weber's 'monopoly of violence' in FATA, where the tribal leaders and chiefs have been historically resisting the introduction of formal institutions like police, military and the judicial system.

Although, state capacity is a multi-faceted concept and is not only limited to the phenomenon of monopolized violence, it certainly relies on Weber's famous proposition. According to him, the state: [c]laims the *monopoly of the legitimate use of physical force* within a given territory (....) Specifically (....) the right to use physical force is ascribed to other institutions or individuals only to the extent to which the state permits it. The state is considered the sole source of the 'right' to use violence (....) (Weber, 1946). Nevertheless, 'difficult geography' (Herbst, 2014), 'rough terrain' (Fearon and Laitin, 2003) and 'tribal history' (Ginsburg, 2011; Benson and Siddiqui, 2014) raise the cost of policing in the whole ungoverned space in a given time. Therefore, the right to exercise the monopoly of violence was initially limited to two out of the seven districts in FATA.

Yet, the case of FATA is different from Weber's notion of the state capacity. First and foremost, the voter preferences of FATA are mainly determined by tribal chiefs and do not include any type of law enforcement institutions, although, public goods like education, health and different kinds of infrastructure are supplied in limited quantities over time. Secondly, over the course of history, tribal chiefs have been fighting against each other for control of natural resources but they never became anti-state armed actors. Thirdly, they have been given a Constitutional right of representation in the lower house of the parliament. Thus, FATA is ungoverned by the state institutions but it is still represented by members in the lower and upper houses at the federal level. Again, it is pertinent to assume that the military intervention in FATA is caused by the geo-political shocks in

the neighboring country of Afghanistan, rather than the ungoverned status of the FATA itself.

After 2007, the militants from Afghanistan not only infiltrated into most of the FATA but were also able to get human resources for recruitment into their ranks. As a result, several splinter groups in FATA formed an organization named 'Movement of Pakistan's Taliban (TTP).'[6] The government declared it a non-state armed group of actors (militants/terrorists) who have started 'defensive war' against the law enforcement institutions. In order to fight and drive out militants, military personnel in FATA has been increased to 140,000 ever since the offensive was started.

This study aims to examine the short and long run effects of the military institution on the dynamics of different categories of violence. Given this objective, the following propositions are presented:

H_1: Enforcement of monopolized violence decreases both short and long run violent conflicts.

Historically, FATA has been plagued by conflicts among different local tribes. The basic objective of the adversary is to get different economic and political benefits. A significant share of these conflicts is related to control over natural resources, sectarian violence, target killings and revenge. Similarly, FATA was a sanctuary for drug dealers and criminals. In the absence of a formal criminal justice system and enforcement institutions, drug dealers and criminals also thrived in this area and other day-to-day conflicts remained unresolved for months and years. It is hypothesized that with the intervention of the army institution as a law enforcement entity, different types of tribal conflicts will decrease over time, in both the short and long term.

H_2: Enforcement of monopolized violence causes different short and long term paths of terrorism.

It is assumed that military force imposes significant sanctions on terrorist behavior. Therefore, a terrorist responds dynamically differently to incentives created by the legitimate use of force. In the short run, the monopoly of violence might create a backlash from terrorist groups (Rosendorff and Sandler, 2004); however, in the long run, it may deter terrorist attacks altogether. Thus, the

[6]TTP is an abbreviation of Tehrik-i-Taliban Pakistan, which means the Movement of Pakistan's Taliban. TTP is inspired from the ideology of Afghanistan's militants.

dynamic response of a terrorism offender may be different over the short and long terms.

4.3 Identification Strategy

To isolate the effect of the law enforcement institution from confounding factors, this will exploit the within-district variation induced by the fact that some districts were treated by military intervention between 2001-2013. To disintegrate the effect of the intervention in treated districts relative to control districts, we use a Difference-in-Differences (DID) identification strategy, which takes into account whether outcome variable changes more in districts exposed to military intervention compared to those districts which were not exposed. DID model provides information on between-districts differences by comparing within-districts changes over time.

To be more specific, an estimate of fixed effects panel data models is used,, where we use separately the number of violent conflicts and terrorist attacks as response variables. The fixed effects ordinary least squares (OLS) is:

$$Outcome_{it} = \alpha\, Military_{it} + \beta\, X_{it} + \gamma_i + \tau_t + \epsilon_{it} \tag{4.1}$$

where $Outcome_{it}$ is a measure of violent conflicts and terrorism in district i and month t. Violent conflicts include all instances of sectarian and ethnic violence, conflict on natural resources, honor and target killings, etc. The variable $Military_{it}$ is a binary indicator which takes value '1' in the month of an intervention (t) as well as months thereafter (t_{+1}, t_{+2}, . . . , t_{+n}), and '0' otherwise. It is a treatment variable that represents the presence of military institutions as a law enforcement organization in the month t (from 2004:M3 for districts North and South Waziristan and from 2007:M12 for districts Kurram and Orakzai) in district i. An important point to mention is that the armed force is deployed permanently to maintain the law and order in FATA and police the Durand Line. The coefficient of interest in equation 4.1 is α, which captures the deterrence effect of the military intervention. X_{it} is a vector of control variables. γ_i controls for the time-invariant determinants (like tribal culture, geography, mountainous terrain, and so on) of violence, while, τ_t accounts for months with unusually low and high episodes of violence, captured by the time fixed effects. Equation 4.1 is controlled with time-varying determinants, X_{it}, that could affect the level

of conflicts within districts. These include the literacy rate, electoral turnout and season-specific trends. The seasonal trends capture the effect of higher temperature on violence.[7]

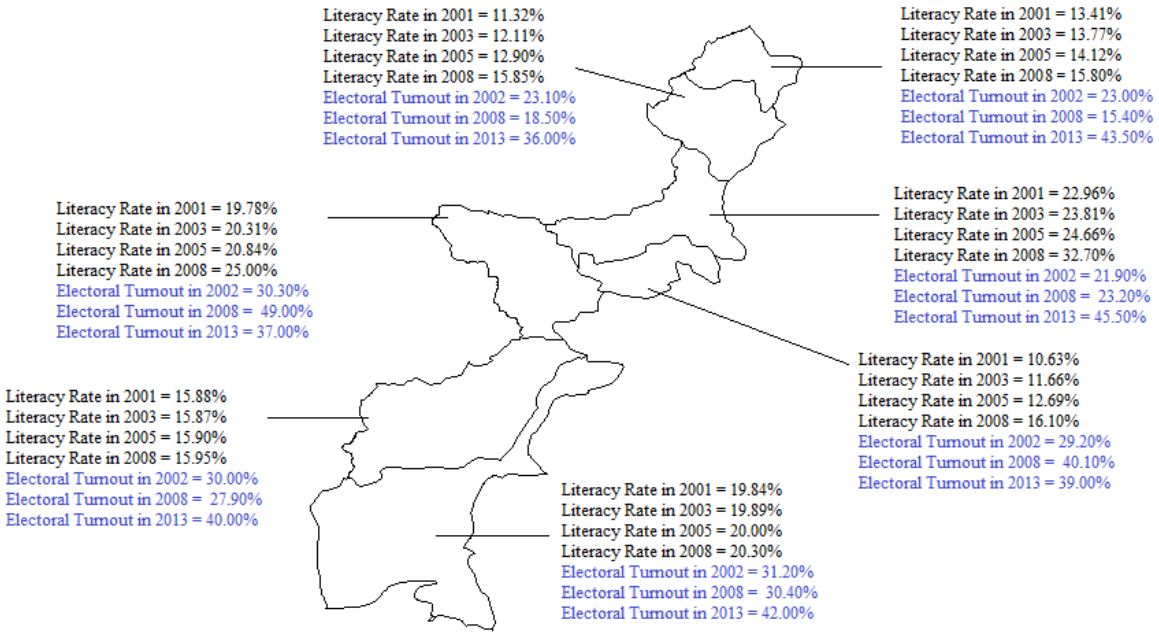
The estimated results of the DID can be interpreted as causal, if the timing of the treatment is exogenous to violence, conditional upon the control variables in the regression. Given the timing and history of treatment and control districts in FATA, it can safely be argued that the timing of the intervention was exogenous to different types of violent conflicts. Similarly, the intervention was initially exogenous to terrorism incidents since it was undertaken in some districts of FATA to deter the inflow of militants from Afghanistan to Pakistan after the military attack of NATO forces in Afghanistan. However, DID identification strategy mitigates the problem of reverse causality due to its quasi-experimental assumptions (Bertrand et al., 2004). Furthermore, one of the identifying assumptions of DID is that, at the time of the intervention, the social, economic, political and religious determinants of violent conflicts should move smoothly over time in treated and control groups. Social and religious factors change slowly over time. Therefore, DID cancels them out while controlling for group and time fixed effects. Following this argument, the residents in FATA speak Pushto language; the majority are Muslims following either of the two sects of Islam, Sunni and Shi'ite; and follow the same culture, traditions, norms and social institutions with a small degree of heterogeneity. Similarly, all the districts share a boundary with Afghanistan; have a rough terrain and mountainous geography and agriculture is the main source of income (FATA Secretariat, 2015).

The political and economic factors that could affect violent conflicts also vary slowly over time in FATA. Nevertheless, this considers whether time-varying factors of violence are orthogonal to the within-district variation in military intervention. The political and economic factors should not change more over time in treated, rather than non-treated, districts under the DID identifying assumption. If this assumption is violated, DID estimates would not be interpreted as causal. Lack of information on economic and political factors due to security concerns in the region enabled the presentation of information only on two indicators; the literacy rate and turn-out in the general elections. Figure 4.4 shows that there is no significant jump in literacy rate between and within-districts. Nevertheless, there is a variation in electoral turnout within-districts, mainly due to the

[7]For a detail overview on the relationship between climate and conflict, interest readers refer to Burke et al. (2014).

security situation at the time of the election.[8]

Figure 4.4: Literacy Rate and Electoral Turnout in the FCR Districts



4.4 Data and Descriptive Statistics

For the estimation purposes, cross-districts longitudinal data in FATA over the period 2001:M1-2013:M12 is exploited. Two measures of conflicts, i.e., violence and terrorism are used separately as an outcome variable. Violence is defined as a conflict between individuals to get socio-economic and political objectives and it includes tribal conflicts over natural resources and sectarian conflicts among different sects of Sunni and Shi'ite Muslims. It also includes the target killing of opposition members for the sake of revenge and honor. One of the major challenges is to get reliable data on violence in FATA, where accessing data on these outcomes can be risky for media persons due to the prevailing security situation. Nevertheless, the information on violence is collected from the major English language daily in Pakistan, *The Dawn*. The incidents are also cross-validated

[8]The p-values of the balancing test for the control variables are statistically greater than 0.1.

with the largest Urdu language daily, the *Daily Jang*, in Pakistan. These incidents were reviewed by a team operating in the Lahore University of Management Sciences under the supervision of De Mesquita et al. (2013). The detailed information of an event includes the location of violence (province and district), day, month and year of an incident, the number of casualties and type of violence, the target of violence, parties involved, duration of violence, etc.

Similarly, data on terrorist attacks are collected from the *Global Terrorism Database (GTD)*, which compiles information on attacks from leading English and Urdu language newspapers in Pakistan, and defines terrorism as, "a terrorist attack which fulfills the following three criterion: i) The incident must be intentional; ii) The incident must entail some level of violence or threat of violence; and iii) The perpetrators of the incidents must be sub-national actors. In addition, at least two of the following three criteria must be present for an incident to be included in the GTD: i) The act must be aimed at attaining a political, economic, religious or social goal; ii) There must be evidence of an intention to coerce, intimidate or convey some other message to a larger audience (or audiences) than the immediate victims; and iii) The action must be outside the context of legitimate warfare activities." GTD also collects information on location, day, month, year, casualties, the target of attack, etc., (Global Terrorism Database, 2013). Table 4.1 presents the descriptive statistics of violence and terrorism in FATA between 2001:M1-2013:M12, respectively; while, figures 4.5 & 4.6 visualize violence and terrorism incidents in the treated and control districts of FATA. The data on violence is available up to 2011:M11, while terrorism information is available up to 2013:M12.

The intervention variable *Military* is a binary indicator which captures the intervention of the military institution in some districts (treatment) compared to other districts (control). The similarity of the social, economic, cultural and political factors in FATA allow an increase step-by-step in the number of control groups in the DID identification.

Finally, control of the equation 4.1 is made with the several available time-varying control variables, which include literacy rate, electoral turnout and health units.

Table 4.1: Descriptive Statistics

Violence (N = 4997)					
Variable	Months	Mean	Std. Dev.	Min.	Max.
Violence	917	5.45	6.21	0	47
Casualties	917	21.06	52.90	0	665
Terrorism (N = 2417)					
Variable	Months	Mean	Std. Dev.	Min.	Max.
Terrorism	1092	2.21	3.56	0	30
Casualties	1092	8.88	26.75	0	308

Source: De Mesquita et al. (2013) & Global Terrorism Database (2013)

Figure 4.5: Violence in Seven Districts of FATA between 2001:M1-2011:M11

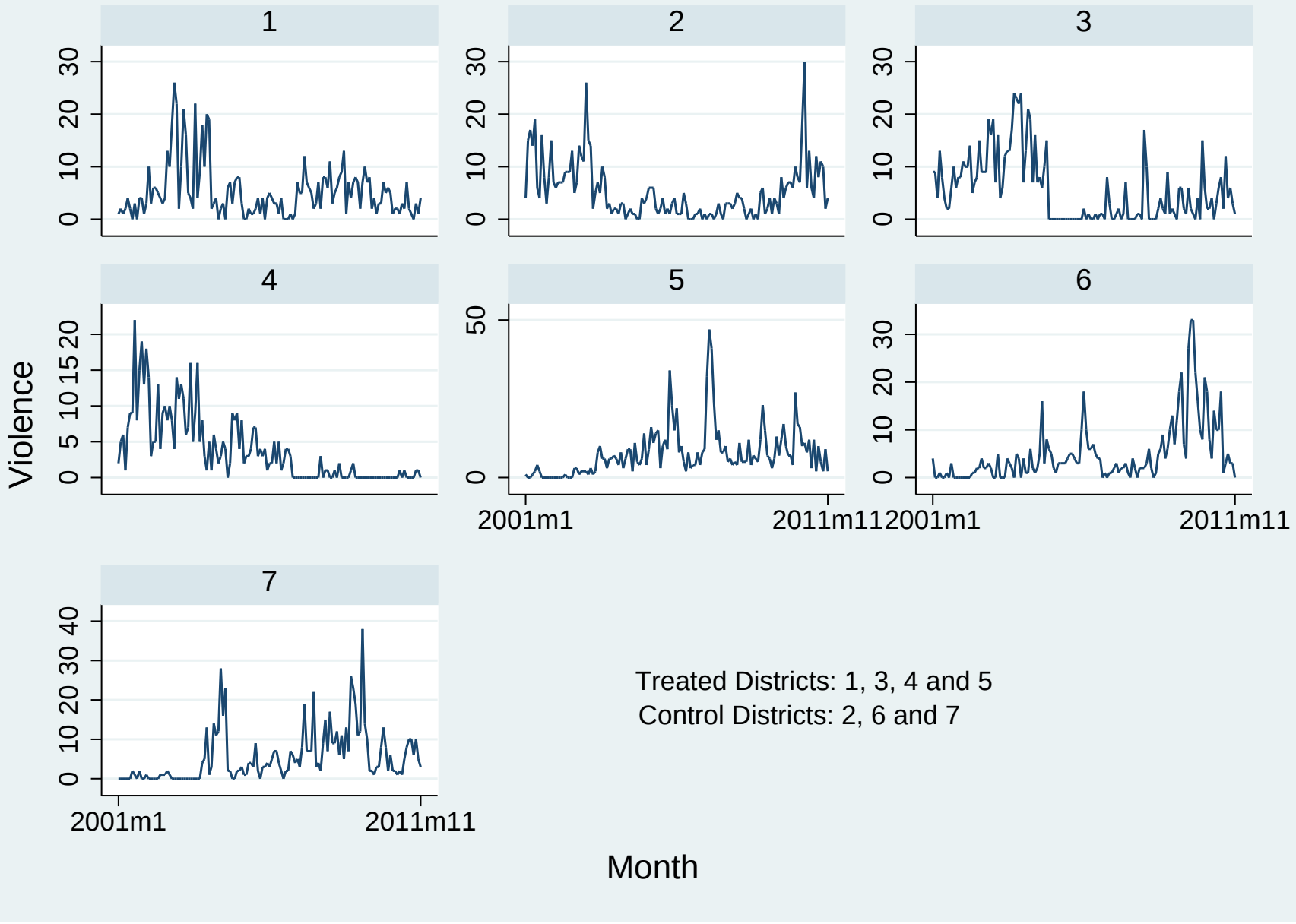
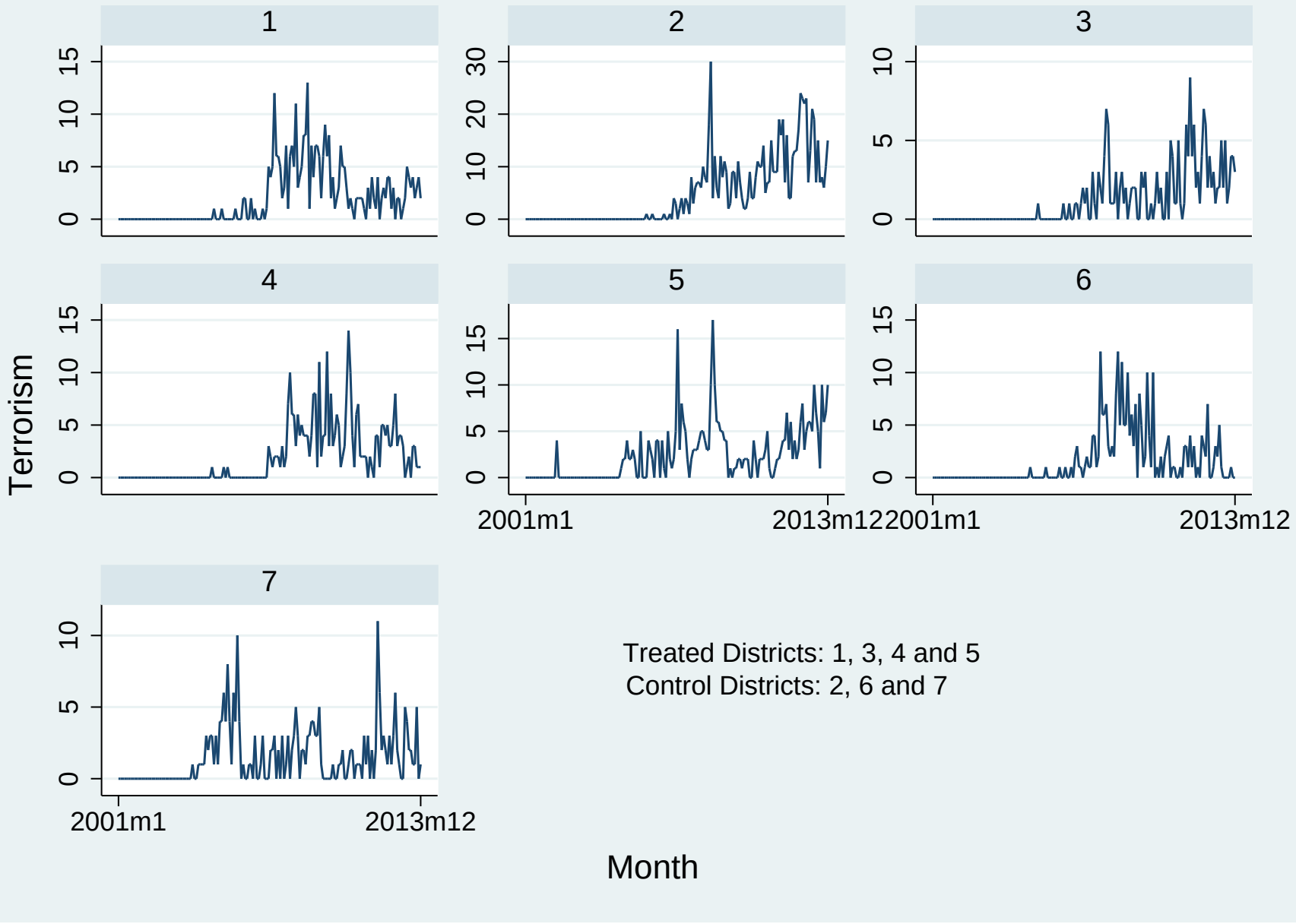


Figure 4.6: Terrorism in Seven Districts of FATA between 2001:M1-2013:M12



4.5 Results and Discussion

4.5.1 Violence in 2001-2007

First, regression estimates are presented for the period 2001-2007, the time-interval when military institution intervened in FATA, exogenous to both violence and terrorism incidents. Furthermore, the intervention was limited to only two out of seven main districts. This period will help us to analyze the exogenous effect of law enforcement intervention on violence and terrorism in the treated relative to the control group, while increasing the number of control districts.

Districts with Shared Border as a Control Group

Initially, the military operation was carried out in two districts (treatment group) of FATA starting in March 2004. Accordingly, two districts can be considered as a control group that share a border with the subjected group. The regression estimates are reported in table 4.2. All the regression specifications include the time fixed-effects and district-fixed effects. The first two columns report estimated coefficients with and without time-varying control variables, while they consider monthly aggregate violence as a response variable. Similarly, the last two columns, present estimates for the casualties per month as a dependent variable which are caused by violent conflicts. The coefficients of the $Military$ in the first two columns show that relative to the control group, the presence of military as a law enforcement institution reduces violence by 5 incidents per month in treated districts. Analogously, the last two columns report that intervention, $Military$, decreases the number of casualties in the treated group by 28 per month. All the coefficients are robust in sign and significance with and without time-varying control variables and seasonal trend.

FATA as a Control Group

To check the robustness of the estimates, the number of control districts to the whole region of FATA was increased. The DID estimates become more consistent and efficient with the increase in the number of relevant control units. Incorporating several districts in the control group is beneficial since it provides a hedge against idiosyncratic shocks in a control district, which may otherwise impair the common trend assumption (Bertrand et al., 2004). Table 4.3 reports the

Table 4.2: The Effect of the Military Institution on Violent Conflicts

	Violence	Violence	Casualties	Casualties
Military	-5.403***	-5.365***	-27.905***	-27.568***
	[0.796]	[0.779]	[5.645]	[5.453]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.25	0.26	0.16	0.16
Observations	336	336	336	336

Note: Response variables are aggregate violent conflicts and corresponding casualties per month, respectively. The DID estimations are based on two treated and two control districts in 2001-2007. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

regression estimates on the impact of military intervention on violent conflicts. It shows that the presence of a military institution significantly decreases violent conflicts by 1 incident per month in the treated group relative to the control districts. Similarly, it decreases the corresponding number of casualties by 7 per month. All the estimates are statistically significant with and without control variables.

To provide further robustness on the causality of the law enforcement intervention on violence in FATA, weighted violence and corresponding casualties are considered as response variables. The weights are a measure of distance in kilometers from the subjected district to the control district; results of which are presented in 4.4. The coefficients of $Military$ variable show that it significantly decreases the number of violent conflicts and corresponding casualties in the treated districts relative to the comparison units.

4.5.2 Violence in 2001-2011

Over the years, the government of Pakistan expanded the role of the military as a law enforcement authority to counter the threat of proliferation of terrorism into the remaining districts of FATA. Thus, a continuous and sustained intervention of military is considered for this analysis rather than one time intervention in a district. Again, the deployment was mainly in response to the infiltration of Afghan militants in Pakistan's territory. In line with this discussion, table 4.5 shows that a

Table 4.3: The Effect of the Military Institution on Violent Conflicts

	Violence	Violence	Casualties	Casualties
Military	-1.288**	-1.292**	-6.556**	-6.568**
	[0.543]	[0.543]	[3.364]	[3.368]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.07	0.08	0.04	0.05
Observations	588	588	588	588

Note: Response variables are aggregate violent conflicts and corresponding casualties per month, respectively. The DID estimates are based on two treated and five control districts in 2001-2007. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

Table 4.4: The Effect of the Military Institution on Violent Conflicts

	W_violence	W_violence	W_casualties	W_casualties
Military	-0.022***	-0.022***	-0.121**	-0.122**
	[0.006]	[0.006]	[0.048]	[0.048]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.08	0.08	0.04	0.05
Observations	588	588	588	588

Note: Response variables are weighted violent conflicts (W_violence) and corresponding weighted casualties (W_casualties) per month, respectively. Distance in kilometers from the treated to control group is used as a weight. The DID estimates are based on two treated and five control districts in 2001-2007. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

continuous intervention has a statistically significant negative effect on violence and corresponding casualties. Law enforcement intervention decreases violence by 3-5 incidents per month in treated districts and also lowers the number of casualties per month by 32-38.

Table 4.5: The Effect of the Military Institution on Violent Conflicts

	Violence	Violence	Casualties	Casualties
Military	-3.102***	-4.552***	-38.131***	-31.673***
	[0.536]	[0.741]	[6.912]	[7.206]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.18	0.20	0.14	0.14
Observations	910	910	910	910

Note: Response variables are aggregate violent conflicts and corresponding casualties per month, respectively. The DID estimates are based on four treated and three control districts in 2001-2011. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

4.5.3 Controlling for the Past Violent Conflicts

To study the persistence and recurrence property of violent conflicts, the equation 4.1 can be modified as:

$$Violence_{it} = \lambda\, Violence_{i,t-k} + \alpha\, Military_{it} + \beta\, X_{it} + \gamma_i + \tau_t + \epsilon_{it} \tag{4.2}$$

where $k = 1, 2, 3$ & 4.

Incidents of violence in previous time periods might be a relevant omitted variable from the baseline specification, keeping in view the customary justice system of the tribal residents. Acts of violence may remain unresolved for months or years and feelings of revenge between warring tribes may thus make violence more likely to recur and persist in the present period. Every player who is strategically involved in violence waits for a suitable time to strike back; civil violence and conflicts are, thus, often recurrent as observed by Blattman and Miguel (2010). In this backdrop, the occurrence of past violence until fourth lag is included in order to observe the effect of one quarter.[9]

[9] All the specifications show that past violence ($Violence_{t-k}$) change signs and statistical significance till

Tables 4.6 and 4.7 report that the first lag of violence has a statistically significant positive effect on future violence. The coefficients of the military have the same signs and significance as observed in baseline specifications. To be more specific and concise, the evidence on the persistence of violence for two different periods and two different control groups is presented. Table 4.6 reports regression results based on the sample size where control districts share a border with the treated districts (like table 4.2). Similarly, table 4.7 controls for lagged violence given the time period and control group in table 4.5. The long-run (steady state) effect in the equation 4.2 can be calculated as $\frac{\alpha}{1-\lambda}$. For example, the long-run effect of the law enforcement intervention on violence while controlling for lagged violence in table 4.6 is $\frac{-2.121}{1-0.601-0.104-0.010--0.150}$ = -4.88 (calculated from the first column), which is approximately similar to the corresponding steady state value in the first column of table 4.2, that is, -5.40.

Table 4.6: The Effect of the Military Institution on Violent Conflicts: Controlling for Past Violence/Casualties

	Violence	Violence	Casualties	Casualties
Military	-2.121**	-2.136**	-12.026**	-12.168**
	[0.536]	[0.543]	[3.798]	[3.859]
Violence/Casualties$_{t-1}$	0.601***	0.599***	0.392***	0.388***
	[0.088]	[0.089]	[0.057]	[0.058]
Violence/Casualties$_{t-2}$	0.104	0.104	0.235***	0.234***
	[0.113]	[0.112]	[0.028]	[0.027]
Violence/Casualties$_{t-3}$	0.01	0.009	0.26	0.258
	[0.039]	[0.039]	[0.176]	[0.175]
Violence/Casualties$_{t-4}$	-0.15***	-0.151***	-0.393*	-0.395
	[0.008]	[0.010]	[0.186]	[0.192]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.56	0.56	0.44	0.44
Observations	320	320	320	320

Note: Response variables are aggregate violent conflicts and corresponding casualties per month, respectively. The DID estimates are based on two treated and two control districts in 2001-2007. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

the fourth lag. Therefore, we include lagged violence till the fourth order.

Table 4.7: The Effect of the Military Institution on Violent Conflicts: Controlling for Past Violence/Casualties

	Violence	Violence	Casualties	Casualties
Military	-1.618***	-2.201***	-16.913**	-14.637**
	[0.528]	[0.758]	[6.980]	[6.722]
Violence/Casualties$_{t-1}$	0.502***	0.496***	0.361***	0.360***
	[0.084]	[0.086]	[0.101]	[0.102]
Violence/Casualties$_{t-2}$	0.057	0.055	0.119	0.117
	[0.060]	[0.061]	[0.076]	[0.076]
Violence/Casualties$_{t-3}$	0.091	0.088	-0.007	-0.008
	[0.061]	[0.061]	[0.066]	[0.066]
Violence/Casualties$_{t-4}$	0.002	-0.003	0.01	0.01
	[0.043]	[0.043]	[0.052]	[0.051]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.45	0.46	0.29	0.29
Observations	889	889	889	889

Note: Response variables are aggregate violent conflicts and corresponding casualties per month, respectively. The DID estimates are based on four treated and three control districts in 2001-2011. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

4.5.4 Terrorism in 2001-2007 & 2001-2013

This section investigates how military intervention affects terrorism in the treatment group relative to the control group. Table 4.8 reports that the military intervention decreases 1 incident in a district per month; however, the coefficients are marginally significant. Moreover, there is a statistically insignificant effect of the intervention on the casualties caused by terrorist attacks.

The same exercise was repeated for an extended period of time to observe the effects of the intervention over the longer horizon. These regression estimates are reported in table 4.9. It shows that the military intervention decreases terrorist incidents and casualties significantly. In the treated districts, the intervention reduces the number of attacks and casualties by 1 and 11 per month, respectively.

Table 4.8: The Effect of the Military Institution on Terrorism Incidents

	Terrorism	Terrorism	Casualties	Casualties
Military	-0.868**	-0.793*	-1.478	-1.322
	[0.414]	[0.424]	[1.907]	[1.935]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.18	0.24	0.09	0.12
Observations	336	336	336	336

Note: Response variables are aggregate terrorist attacks and corresponding casualties per month, respectively. The DID estimates are based on two treated and two control districts in 2001-2007. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

4.5.5 Controlling for the Past Terrorism

To control for the recurrence and persistence in terrorism incidents, table 4.10 presents the effect of intervention in the treated group while controlling the baseline specification up to the fourth lag of terrorism. The lag estimates show that there is a significant trend in terrorist attacks that persists for all the time periods. Nevertheless, there is no consistent trend in casualties over time. Again, the coefficients of the *Military* variable are statistically significant in various specifications; terrorist attacks are significantly decreased in districts that are subjected to military interventions.

Table 4.9: The Effect of the Military Institution on Terrorism Incidents

	Terrorism	Terrorism	Casualties	Casualties
Military	-0.471**	-0.861***	-11.217***	-10.819***
	[0.204]	[0.304]	[2.025]	[2.212]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.34	0.39	0.10	0.14
Observations	1085	1085	1085	1085

Note: Response variables are aggregate terrorist attacks and corresponding casualties per month, respectively. The DID estimates are based on four treated and three control districts in 2001-2013. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

Table 4.10: The Effect of the Military Institution on Terrorism Incidents: Controlling for Past Terrorism/Casualties

	Terrorism	Terrorism	Casualties	Casualties
Military	-1.393***	-1.387***	-8.349***	-8.938***
	[0.279]	[0.305]	[1.889]	[2.170]
Terrorism/Casualties$_{t-1}$	0.36***	0.347***	0.052	0.023
	[0.069]	[0.067]	[0.037]	[0.038]
Terrorism/Casualties$_{t-2}$	0.18***	0.172***	0.155**	0.126**
	[0.053]	[0.053]	[0.064]	[0.064]
Terrorism/Casualties$_{t-3}$	0.123**	0.116**	0.087*	0.058
	[0.058]	[0.058]	[0.047]	[0.047]
Terrorism/Casualties$_{t-4}$	0.099*	0.087	0.041	0.013
	[0.056]	[0.054]	[0.041]	[0.042]
Control Variables		Y		Y
Month FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
R^2	0.59	0.59	0.13	0.16
Observations	1064	1064	1064	1064

Note: Response variables are aggregate terrorist attacks and corresponding casualties per month, respectively. The DID estimates are based on four treated and three control districts in 2001-2013. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

4.5.6 Robustness Checks

To test the robustness of the regression estimates, a placebo test is performed on lead values of the intervention. If the results truly capture the effect of the intervention in the ungoverned space, an insignificant impact of lead values on violent conflicts should be found. If the intervention is indeed causing the effects in the outcome variable, then the leads should not be significant (otherwise they will capture anticipatory effects or pre-existing trends).

Similarly, a robustness test was run based on the effect of lagged terrorism on current violence. The intuition for doing so is that, after 2007, the government responded to intensive episodes of terrorism in FATA with a delay of one to two months.[10] Therefore, violence is expected to respond inversely to higher incidents of terrorism with lags of two to three months.

Placebo Test

Tables 4.11 and 4.12 report the regression results of the falsification test based on the lead values of military intervention for two different time periods. Both the tables show that there is no pre-existing trend in violence in FATA, and, correspondingly, there is no anticipatory effect of the military institution on violent conflicts. The coefficients of the leads are statistically insignificant in both periods of analysis. Therefore, tables 4.11 and 4.12 confirm that the results are not drawn by anticipatory or trend effects.

Controlling Current Violent Conflicts for Lagged Terrorism

The identification assumption is that the intervention of the military is exogenous to different types of violent conflicts and initially exogenous to terrorist attacks in FATA. To further test the validity of this assumption, the lags of terrorist attacks are included as an explanatory variable in the equation 4.1. The regression estimates in the first column of table 4.13 show that violence is inversely related to lagged terrorism $(t-2)$. The lagged effect of terrorism on violence is statistically significant. Following this result, columns 3 and 4 present evidence on the interaction effect of intervention-to-

[10] A political thought exists in Pakistan which favors negotiations, dialogs and bargaining with the terrorists to solve the problem of terrorism through political processes. Thus, military response is always delayed for one to two months to develop the political consensus for the military intervention (NAP, 2014).

Table 4.11: Placebo Test: The Lead Values of the Military Intervention in 2001-2007

	1 Month	2 Months	3 Months	4 Months	5 Months	6 Months
Military	-1.129	-0.995	-0.825	-0.583	-0.387	-0.198
	[1.842]	[1.867]	[1.835]	[1.732]	[1.587]	[1.483]
Control Variables	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y	Y
R^2	0.09	0.08	0.08	0.08	0.08	0.08
Observations	581	574	567	560	553	546

Note: Response variable is the aggregate violent conflicts per month. The DID estimates are based on two treated and five control districts in 2001-2007. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

Table 4.12: Placebo Test: The Lead Values of the Military Intervention in 2001-2011

	1 Month	2 Months	3 Months	4 Months	5 Months	6 Months
Military	0.200	0.322	0.155	-0.113	-0.519	-0.652
	[1.137]	[1.063]	[1.111]	[1.222]	[1.432]	[1.710]
Control Variables	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y	Y
R^2	0.21	0.20	0.20	0.21	0.22	0.23
Observations	910	903	896	889	882	875

Note: Response variable is the aggregate violent conflicts per month. The DID estimates are based on four treated and three control districts in 2001-2011. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

terrorism on violent conflicts and corresponding casualties, respectively. It further confirms that the military institution has a robust and consistent deterrence effect on violence in FATA.

Table 4.13: The Effect of the Military Institution on Violent Conflicts: Controlling for the Past Terrorism

	Violence	Violence	Casualties
Military	-4.474**		
	[1.599]		
Military X Terrorism$_{t-2}$		-0.485**	-6.122**
		[0.222]	[2.794]
Terrorism$_t$	0.08	0.005	-0.158
	[0.095]	[0.070]	[0.741]
Terrorism$_{t-1}$	0.071	-0.002	0.528
	[0.058]	[0.072]	[0.854]
Terrorism$_{t-2}$	-0.078***		
	[0.018]		
Control Variables	Y	Y	Y
Month FE	Y	Y	Y
District FE	Y	Y	Y
R^2	0.21	0.16	0.12
Observations	899	899	899

Note: Response variables are aggregate violent conflicts and corresponding casualties per month, respectively. The DID estimates are based on four treated and three control districts in 2001-2011. Standard errors are clustered on district-month. * significant at 10%; ** at 5%; *** at 1%.

4.6 Concluding Remarks

This study is an attempt to analyze the deterrence effect of a law enforcement public institution on violence in an area that had not been exposed to formal institutions like the judiciary, police, military and bureaucracy. To date, FATA is governed under the FCR, which is based on customary laws and norms. However, after 9/11 and the consequent presence of the NATO forces in Afghanistan, the Government of Pakistan decided to police and monitor FATA through the institution of the army. This uniquely governed region thus provides an opportunity to study the role of government capacity in terms of law enforcement ability in the context of Max Weber's 'monopolized violence.'

Utilizing a district-level longitudinal dataset on violent conflicts collected from multiple sources, a Difference-in-Differences identification strategy, based on the selective intervention across districts, is used to show that the military intervention as a law enforcement measure has a significant decreasing effect on violence.

Monthly panel data on violence between 2001:M1-2011:M11 and exogenous intervention of military institution to different types of violence events are used for the empirical analysis. The results indicate that the intervention decreases violence by 1-5 incidents in treated districts in a given month. Similarly, it reduces the number of casualties caused by different types of violent events by 7-38. The effect varies within the given range due to the various numbers of treated and control districts, the time period of the intervention and control of lagged violence. Nevertheless, the observed results are robust across different specifications while controlling for time and district fixed effects, time-varying determinants and seasonal trends.

The same process was repeated to analyze the deterrence effect of the military on terrorist attacks. It is argued that the intervention was initially exogenous to terrorism. Utilizing within-district variation in terrorism between 2001:M1-2013:M12, the results conclude that intervention has a deterrence effect on terrorist attacks in the treated group. However, terrorism estimates are not consistent with sign and significance.

With respect to policy recommendations, the results suggest that law enforcement bodies, such as the military, have a significant deterrence effect on violence. Given this outcome, it may be the right time for the government to expand and invest in the role of other formal institutions like judiciary and police in FATA.

Chapter 5

The Spatial Analysis of Terrorism in Pakistan

5.1 Introduction

Pakistan has witnessed intense episodes of conflict, asymmetric violence and terrorism in the last decade, making it the third most affected country in 2014 (Killelea, 2014). The increase in these conflicts has permeated through the pulsating issue of sectarianism and terrorism in Pakistan, giving birth to a major political and religious discourse in the country. After 9/11, terrorism and situational terrorism prevention resulted in the public cost of about 50,000 casualties, including 15,700 security personnel; and monetary cost equivalent to 102.5 billion dollars to the Pakistan economy (Economic Survey, 2013). According to the Pew research survey, terrorism, crime and extortion are considered the foremost challenges in Pakistan (Kohu, 2012).

The deterrence effect of counter terrorism has been under study since the late 1970s (Landes, 1978). Researchers tested the deterrence hypothesis, both theoretically and empirically. However, the scope of this literature is limited to the analysis of transnational terrorism over time (Sandler et al., 1983; Enders and Sandler, 1993, 2004; Sandler and Enders, 2004; De Mesquita, 2005; Powell, 2007, 2009a; Sandler and Enders, 2005; Santifort et al., 2013).[1] Very few studies have analyzed the deterrence effect of anti-terrorism policies over geographic space and cross sectional units (Rusnak et al., 2012; Johnston and Sarbahi, 2013; Neumayer, 2014).

Similarly, criminologists observe no difference between crime and terrorism. For example, Clarke

[1] "Domestic terrorism is home directed and homegrown involving victims, perpetrators, and target venues from a single country; transnational terrorism is a multi-country affair involving victims, perpetrators, or target venues from two or more countries (Santifort et al., 2013)."

and Newman (2006) describe the similarity between crime and terrorism in their book as "terrorism is crime with a political motive." They argue that spatial displacement and diffusion of terrorism control benefits could be observed just like in different types of crime. Assuming this similarity, the aim of this study is to empirically test the displacement, diffusion and vengeance behavioral responses of terrorists to terrorism prevention efforts in Pakistan.

To deter domestic terrorism, Pakistan opted for different types of situational terrorism prevention strategies. These include continuous preventive efforts like (search operations, curfews, crackdowns, raids and air strikes by armed forces) and defensive strategies like (laws, bargaining and negotiations). Despite these measures, terrorism increased significantly over space and time. The Global Terrorism Database (2013) collected different information about 7157 terrorist incidents in Pakistan between (1970–2012). Figures 5.1 and 5.3 show the frequency of the total number of terrorist attacks over time and space, which are discussed in detail in the section 5.4. They visualize that terrorism is not only increasing over time but also spreading over a wide area.

Immediate spatial displacement of terrorism could be one of the reasons for the continuous rise in terrorism despite terrorism prevention interventions across the country. To elaborate it further, policy intervention in a specific spatial unit raises the opportunity cost of terrorist activities, and therefore it could displace terrorism to neighborhoods where the opportunity cost of terrorism activity is lower. Similarly, intervention can increase the opportunity cost in a given district and neighborhood simultaneously, thus, decreasing total terrorism. These outcomes of intervention are called *displacement* and *diffusion of terrorism control benefits*, respectively. Moreover, non-discriminatory intervention often results in collateral damage of innocent individuals, for example, military intervention through a non-discriminatory approach creates public cost in the form of civilian casualties and destruction of social, political and economic infrastructure, and may attract new recruits to the terrorists, which, in turn, can result in a wider conflict. It is called the *vengeance/backlash effect* in the economics of terrorism.

Significant literature is available on the displacement, diffusion of crime benefits and incapacitation effects of policing on different types of crime.[2] However, few studies have tested these effects

[2]Weisburd et al. (2006) provide a detailed literature review on the displacement and diffusion of crime control benefits in their study.

for different types of terrorism. Similarly, few researchers considered the spatial distribution and nature of domestic terrorism.[3] This study is designed to narrow this gap.

The chapter uses district level variations in terrorism incidents and terrorism prevention interventions to empirically test the aforementioned propositions; specifically, to examine the net effect (displacement vs. diffusion) of a policy intervention. Under different specifications, we find that terrorism prevention efforts cause substantial and significant displacement to the nearest neighboring districts. This spillover effect is consistent for both periods of analysis, that is, 2001-2006 & 2007-2002. The results show that terrorism prevention interventions displaced on average 2-3 terrorist incidents in the period 2001-2006 and 14-32 in the later years, 2007-2012. The derived empirical results are statistically robust to the endogeneity consideration of the spatial lag of the dependent variable, pooled average and the total number of terrorist attacks, spatial regression discontinuity design and counter factual estimations.

Regarding the control variable, our regression estimates show that the spatial difference in the legal framework regarding the conviction and punishment of a terrorist also matters significantly for the occurrence of expected terrorist incidents. The districts where 1997 Anti-terrorism Act is implemented as the legal framework against terrorist activities, experience 2-33 times fewer attacks than the districts with Frontier Crimes Regulation (FCR) as the legal protection against crimes related to terrorism; depending on the period of analysis and various econometric specifications.

The rest of the study is structured as follows: the next section gives a brief review of literature; the historical evolution of terrorism is discussed in section 5.3; section 5.4 illustrates the data and descriptive statistics of the study; empirical and identification strategy is explained in section 5.5; results are discussed in section 5.6 and section 5.7 draws some conclusions.

5.2 Related Literature and Hypotheses

Clarke and Newman (2006) argue in their book 'Outsmarting the Terrorists' that the only difference between terrorism and crime is the objective of the offender. Terrorism is a crime with a 'political motive.' The objectives and motivations of two offenders may differ, but however, the actual

[3]For the detailed analysis on the spatial distribution of terrorism, see the literature review in the section 5.2.

mechanics, contingencies and operational constraints for carrying out a terrorist attack are the same, no matter what extremist ideology, political goal or socio-religious-economic agenda they follow (Freilich and Newman, 2009). Similarly, Garoupa et al. (2006) reviewed the existing literature on criminal law and economics, and the applicability of criminal models to terrorism. Based on the similarity between terrorism and crime, here, this sections discusses the literature on the spatial distribution of crime and spillover effects of situational crime prevention, which is followed by terrorism studies.

5.2.1 Spatial Consistency/Randomness in Crime

The hypothesis that 'distance matters' for offenders to commit a crime has its scientific basis in environmental criminology-more specifically-in the routine activity theory (Felson and Cohen, 1980) and crime pattern theory (Brantingham and Brantingham, 1984, 1993, 1995). These scholars argue that offenders commit crimes in geographic proximity to areas that are familiar to them from their daily routine. These spots are along the routes between their homes and the places they regularly work, shop and enjoy recreation. These theories are supported by significant empirical evidence which includes (Mustaine and Tewksbury, 1999; Pratt et al., 2010; Franklin et al., 2012) to mention a few. Similarly, criminologists observed that offenders respond to sanctions and incentives imposed through crime preventive measures. Criminals not only switch their targets but also where they look for an opportunity. The spillover of situational crime prevention is called displacement and diffusion of crime control benefits. Guerette and Bowers (2009) provided an extensive survey for 102 assessment of crime prevention projects to determine the magnitude of crime displacement and diffusion of crime control benefits.

5.2.2 Spatial Consistency/Randomness in Terrorism

The scholarship on the economics of terrorism and counter terrorism significantly developed in the post 9/11 scenario. However, the history of research on the (in)effectiveness of terrorism prevention efforts goes back to the late 1970s. Landes (1978) used the methodology of Becker (1974) on *the economics of crime and punishment* to study hijacking events in the United States. He analyzed

that the installation of metal detectors in US airports successfully deterred airplane hijackings. Similarly, Enders and Sandler (1993) observed that the metal detectors increased other types of hostage incidents through substitution/displacement effect, thus, caused a high number of kidnappings and assassinations.[4,5] Furthermore, anti terrorism strategies may create a paradox between short and long term effectiveness. In the short run, terrorism prevention raises the deterrence level, but may diminish it in the long run through a non-discriminatory approach which creates a public cost in the form of civilian casualties and destruction of social, political and economic infrastructure and capital (De Figueiredo Jr and Weingast, 2001; Rosendorff and Sandler, 2004; De Mesquita, 2005).

Despite the increasing number of publications on the political economy of terrorism and counter terrorism, empirical research is limited to the time dimension and the transnational nature of terrorism. Few studies have analyzed the geographical characteristics of terrorism and situational terrorism prevention, as, both, time and space may alter the cost-benefit analysis of a rational terrorist. Therefore, the neighborhood may be a significant factor in determining terrorist activities.

In this context, 'spatial consistency/randomness' in terrorism and other types of civil conflicts is studied by Townsley et al. (2008). For example, Townsley et al. (2008) found the clustering of attacks over space and time in Iraq. They argue that attacks would cluster because it was an efficient way to operate; efficiency, based on the least effort principle, suggested that combatants would conduct attacks within close proximity to one another to decrease their probability of apprehension while maintaining familiarity with the target location. Analogously, Siebeneck et al. (2009) studied the geographic and temporal behavior of terrorist incidents between 2004-2006 in Iraq. Using spatial tools on terrorist attacks, the study finds that terrorist events are random, and not predictable. Furthermore, Braithwaite and Li (2007) observed the hot spots of transnational terrorism in different regions of the world. The study showed that countries which are in the range of hot spots are expected to experience high terrorist attacks in the near future.

Studying the spatial features of asymmetric violence and terrorism, Johnston and Sarbahi

[4]For the policy induced substitution among potential terrorist targets, interested readers refer to (Im et al., 1987; Frey and Luechinger, 2003; Enders and Sandler, 2004; Anderton and Carter, 2005; Bier et al., 2007).

[5]De Mesquita (2008) provides a comprehensive overview on the political economy of terrorism and counter terrorism.

(2013) conducted a detailed study on the effectiveness of drone strikes in Pakistan and Afghanistan. Assuming different neighborhoods (kilometers) from the drone hit region, they concluded that drone strikes are an effective counter terrorism instrument which decreases the lethality and incidence of terrorist events in the given range. Given this debate, the hypotheses to explore the 'spatial consistency/randomness' and 'displacement/diffusion' of terrorism prevention in Pakistan will now be presented.

5.2.3 Hypotheses on the Spatial Consistency/Randomness of Terrorism in Pakistan

H_1: There is a 'spatial consistency' in terrorism

As discussed previously, terrorists think like ordinary criminals. Therefore, there is a high likelihood that terrorists target close and familiar spatial units where the opportunity cost of potential targets is low. However, there is a higher probability that 'spatial consistency' or 'systematic patterns' of violence occur when two strategic players interact with each other for territorial control (Kalyvas and Kocher, 2009).

H_2: Terrorism prevention creates 'spatial randomness' in terrorism

One of the objectives of a terrorist criminal is to create an environment of uncertainty and insecurity among the larger audiences, with the effect progressing from the individual level to the general public. To create an environment of insecurity, terrorists diversify their attacks over space, thus, leading to 'spatial randomness' rather than 'spatial consistency.' 'Spatial randomness' increases the future bargaining power of the terrorist group with the government, initiating the effect through voter preferences for higher security.

It should be noted that H_1 and H_2 are mutually exclusive; however, to elaborate them, they are separately discussed. Similarly, we are not sure which one is tenable in the empirical analysis.

H_3: Terrorism prevention like the use of military and police forces creates public cost/benefit in the form of displacement/diffusion of terrorism

Terrorism prevention in a given space raises the marginal cost and lowers the marginal probability of an additional attack. Thus, it may cause public cost/spillover of higher terrorism in the contiguous space. 'Spatial displacement' is probable when offenders search for potential targets in the contiguous neighborhood where the opportunity cost of offense is low. Similarly, 'spatial diffusion' would be the case if terrorism prevention deters offenders from crimes not only in the given spatial unit but also in the neighborhood.

H_4: Terrorism prevention creates 'vengeance' from terrorists

Similar to the H_1, when the government imposes sanctions on terrorists through military and police forces, there is higher likelihood that the adversary will retaliate.

5.3 Historical Evolution of Terrorism in Pakistan

Since 9/11, Pakistan is regarded as the epicenter of asymmetric conflict, including sectarian violence and terrorism, in the world. Currently, Pakistan has waged a bitter war against domestic terrorist groups. In Pakistan, sectarian violence between extremists from the majority Sunnis and the minority Shias sects has involved assassinations, kidnappings, attacks on religious processions and places of worship, and, most deadly of all, suicide bombings. Similarly, extremists from the Sunnis (Tehrik-i-Taliban Pakistan, Lashkar-i-Jangvi, Sipah-i-Sahaba, etc.) have also assassinated moderate/liberal Sunnis, and have carried out suicide bombings in their worship places, shopping centers, sport events and educational institutions. The Sunni extremists have also attacked the human and physical resources of the government, which include attacks on police, army personnel, judges, legislators, teachers, doctors, schools, hospitals, railway tracks, bridges, gas pipelines, etc., (SATP , 2014).

The roots of modern terrorism in Pakistan can be traced back to the 1980s. Domestic political events (martial law in 1977) coupled with the developments in the neighboring countries (religious revolution in Iran and the Soviet invasion of Afghanistan in 1979) helped to create such a geopolitical environment that gave birth to asymmetric sectarian violence and terrorism in Pakistan. The Pakistan-USA nexus and their support for the Afghanistan Jihadies against the Soviet invasion

resulted in the spillover of the militant behavior and militant politics to Pakistan.[6] Hence, in the 1980s, most of the militant organizations were formed on sectarian lines by Sunnis and Shias. From 1980 to 1990, Pakistanis were exposed to an average of 26 terrorist attacks, causing 61 casualties every year.

However, in the following decade of the 1990s, a major proportion of violence and terrorist activities were carried out by the ethno-nationalist extremists in Karachi, the financial hub of the country, and by sectarian fundamentalists in the province of Punjab. For instance, 52% of the total terrorist attacks carried out in the city of Karachi, were by ethno-nationalist-separatists and 33% of the total terrorist incidents occurred on sectarian lines between the majority Sunnis and minority Shias denominations.

Since 9/11, and following Pak-US collaboration in the 'war on terror,' terrorism and related violence and conflict have significantly increased. Figure 5.1 visualizes the continuous upward trend in terrorism after 9/11. From 1991 to 2000, Pakistan is exposed to an average of 174 terrorist attacks, causing 202 casualties every year. Similarly, from 2001 to 2012, those numbers rose steadily to 441 average attacks killing an average of 1,313 people per year.[7]

5.4 Data and Descriptive Statistics

To test the hypotheses, the variables of interest are terrorist incidents per district and terrorism prevention interventions. Table 5.1 presents the spatial auto-correlation of terrorist attacks among districts and table 5.2 reports the summary statistics of the response and control variables.

5.4.1 Time Series Trend of Terrorism in Pakistan

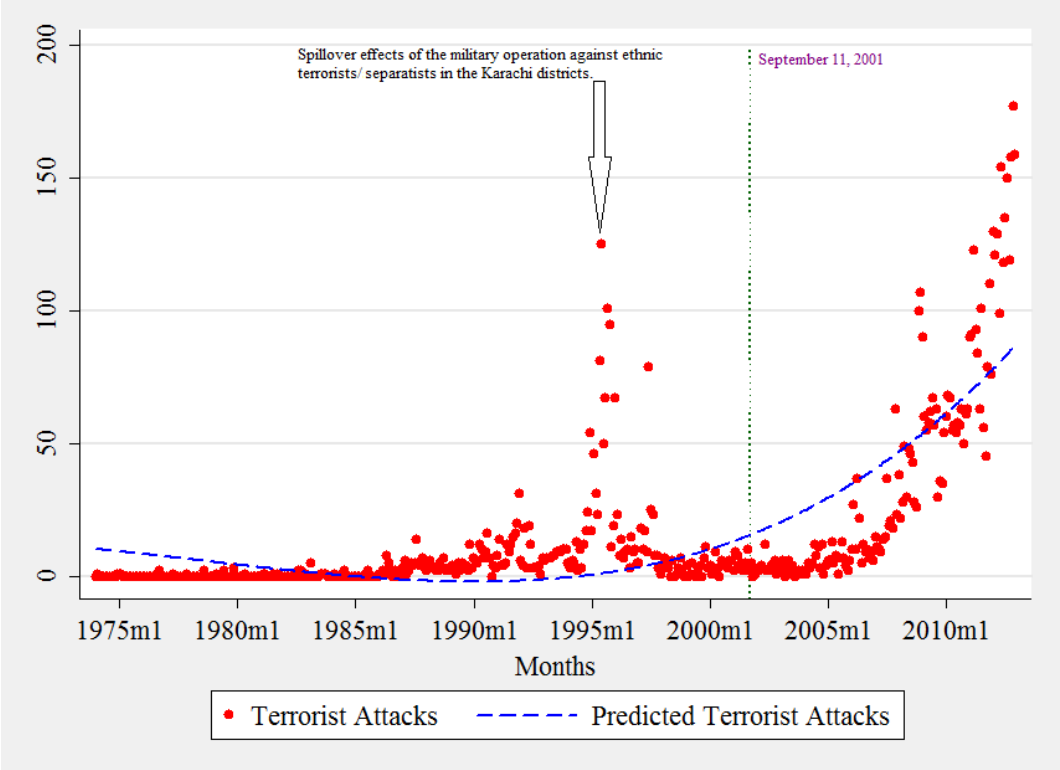
Before starting the geographic characteristics of terrorism, figure 5.1 displays the actual and predicted trends in terrorist incidents from 1974-2012. It shows that terrorism has increased since 1990. The downward arrow points to the unexpected surge in terrorism after the preemptive mea-

[6]For the detailed background on terrorism in Pakistan, interested readers refer to Fair et al. (2012); Fair et al. (2013); Fair et al. (2013).

[7]All information about attacks and casualties are collected from the Global Terrorism Database (2013) (accessed March, 2014).

sures of the law enforcement authorities against ethnic separatists/terrorists. However, terrorism declined steadily in 1997-1998, after the implementation of the new anti-terrorism legal framework. To explain it further, the vertical dash line divides the pre and post 9/11 regimes. It illustrates that terrorist incidents have continuously increased over time since 2004. The slope of the predicted line is relatively steeper after 9/11. Since 9/11, different types of carrot and stick terrorism prevention strategies have been adopted to deter domestic terrorists and extremists. The district-based time series terrorist events (2001-2012) are presented in figures 5.6-5.10 in appendix 5.8.

Figure 5.1: Actual and Predicted Terrorist Incidents



5.4.2 'Spatial Consistency Vs. Randomness' in Terrorism in Pakistan

The spatial empirics start by testing the H_1 and H_2, i.e., the distribution of attacks among districts. The estimated spatial auto-correlation coefficients (Moran's I) are reported in table 5.1, assuming

a different order of contiguous neighborhoods.[8] First, there is an estimate of Moran's I for the whole sample of districts (the first row) which is followed by Moran's I for the districts where terrorists/separatists had partial control over the territory.[9] The estimated values of Moran's I for the full sample and their statistical significance decrease with the increase in the distance between two districts. A Moran's I predicts that the concentration in terrorist incidents is higher in closer neighborhoods than the distant districts. Nonetheless, the values of Moran's I for the average attacks (2007-2012) are relatively higher in magnitude and significance than the average attacks in (2001-2006). The maximum value of the spatial auto-correlation coefficient is only 0.20 ($-1 \leq$ Moran's I ≤ 1), which decreases over space. Although, Moran's I largest estimated value (0.20) is statistically significant but close to zero.

Similarly, the values of Moran's I in the second row show that there is a significant 'spatial consistency' in terrorist attacks in (2007-2012) among districts where the terrorists possessed some control over the territory. The data reveals that terrorists targets include a significant proportion of public goods (police, army, schools, hospitals, legislatures and elders) in the territory control sample. The spatial concentration is statistically significant and close to '1' after 2006 when the districts from Baluchistan province and FATA are considered, where terrorists/separatists had partial control over the territory due to rough terrain and difficult geography, which raise the cost of government policing. The values of Moran's I are approaching to '1' till 2^{nd} order contiguity. These results are confirmed by figures 5.2a-5.2b for the full sample and 5.2c-5.2d for the territorial control sample. The probability distribution of 'spatial consistency vs. randomness' in figure 5.2 is based on the distance between two districts.[10] For example, figure 5.2 visualizes that the clustering/concentration of terrorist attacks are statistically significant in period 2007-2012 than 2001-2006.

To explore further the geographical behavior of terrorism in Pakistan, figures 5.3a and 5.3b show

[8] 1^{st} order represents the correlation between a district attacks and the weighted average attacks of the neighboring districts; 2^{nd} order shows the correlation between a district and the weighted average attacks of neighbors' neighbors, and so on. The method used to construct weighted average attacks in the neighborhood is explained in section 5.5.

[9] These include districts from the province of Baluchistan and Federally Administered Tribal Areas (FATA). Baluchistan and FATA both share boundaries with Afghanistan, having mountainous terrain and high elevation.

[10] Inverse distance weight matrix is used to draw figure 5.2.

Table 5.1: Spatial Auto-correlation in Terrorist Incidents

Variable	Moran's I (2001-2006)			Moran's I (2007-2012)		
	1st order	2nd order	3rd order	1st order	2nd order	3rd order
Attacks (full sample)	0.10**	0.04**	0.002	0.20***	0.15***	0.10***
	[0.04]	[0.02]	[0.01]	[0.05]	[0.03]	[0.02]
Attacks (territorial control)	-0.10	-0.10***	-0.11***	0.60***	0.81**	0.14**
	[0.10]	[0.03]	[0.02]	[0.11]	[0.08]	[0.06]

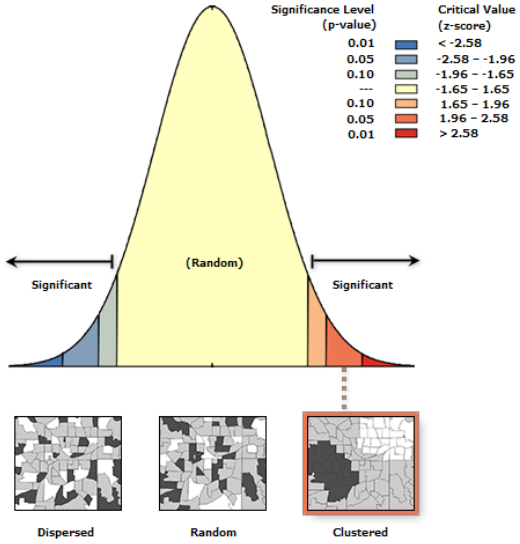
Note: The total number of districts are 115 and 44 for the full sample and territorial control, respectively. Results are based on the average of terrorist attacks between 2001-2006 and 2007-2012, respectively. GIS software is used for the calculation of Moran's I. Standard errors are given in parentheses. ***, ** and * show significance at 1%, 5% and 10% level of significance.

aggregate terrorist incidents in 2001-2006 and 2007-2012, respectively.[11] It can be understood from figure 5.3a that attacks are relatively random, though, there are some hot spots in the North-South parts of Pakistan. One dot is equivalent to one terrorist attack. The average number of attacks in the cold and hot spots districts range between 1 to 12 incidents in 2001-2006, respectively. Nevertheless, the average incidents in the cold and hot spots vary between 7 to 79 for the 2007-2012 period, respectively. Alternatively, the clustering of attacks is represented through the decile maps which are given in figure 5.4.[12] After 2006, significant strategic changes occurred in the behavior of terrorists and government. Scattered militants formed the organized terrorist group in Pakistan, Tehrik-i-Taliban Pakistan (TTP) in 2007; drone attacks against militant hideouts intensified after 2006; terrorist violence against the tribal elders, who shared important information with the government against militants, increased; and the transformation of political regimes from dictatorship to democracy occurred (SATP , 2014). All these compounding factors led to the concentration of attacks in North-Western Pakistan, especially in the FATA region.

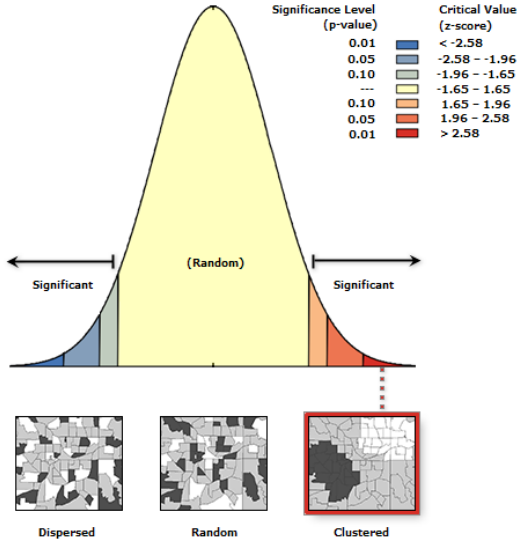
[11]The year-wise (2001-2012) spatial concentration of terrorism is presented in figures 5.11 and 5.12 in appendix 5.8.

[12]The western part of the figures 5.4a and 5.4b where no attack is observed is the Pakistan Administered Kashmir. Due to the disputed status of the Kashmir territory, many socio-economic and political indicators are not available for it. That is why, it is included in the figures but does not part of the analysis.

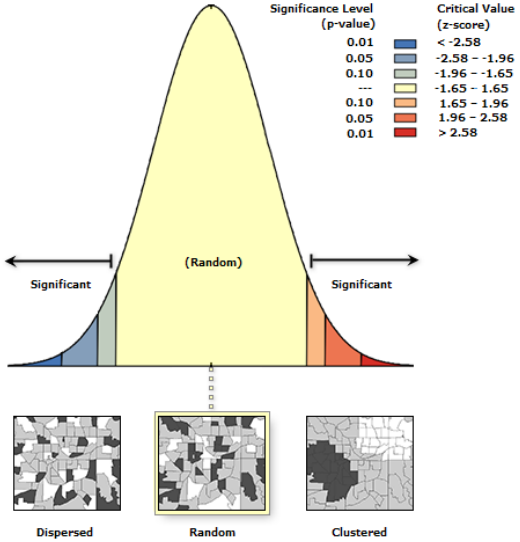
Figure 5.2: Spatial Consistency Vs. Randomness in Terrorism



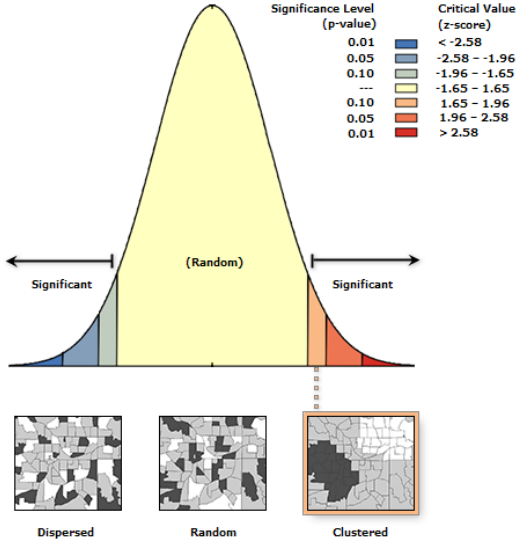
(a) The distribution of Terrorist Attacks in 2001-2006 (full sample)



(b) The distribution of Terrorist Attacks in 2007-2012 (full sample)

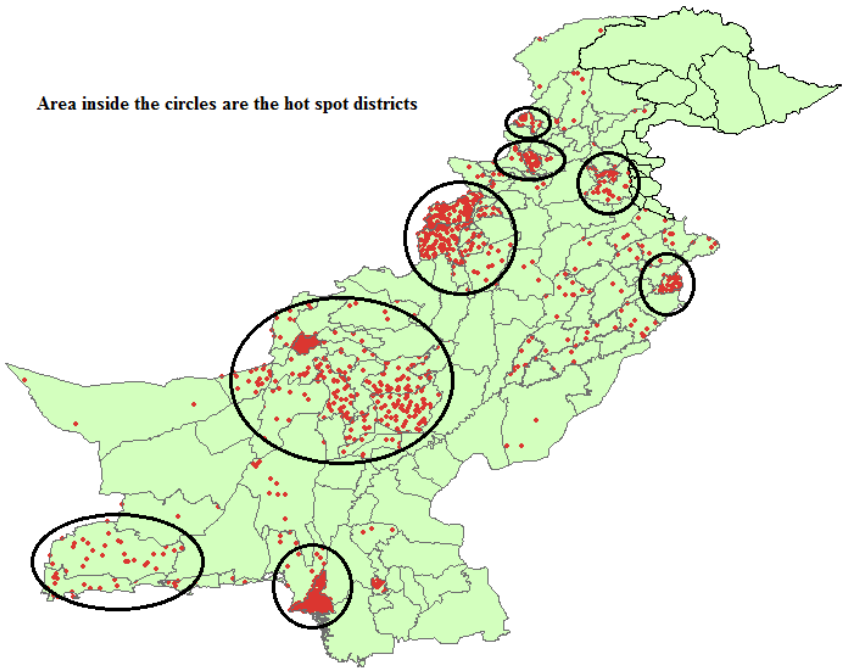


(c) The distribution of Terrorist Attacks in 2001-2006 (territorial control)

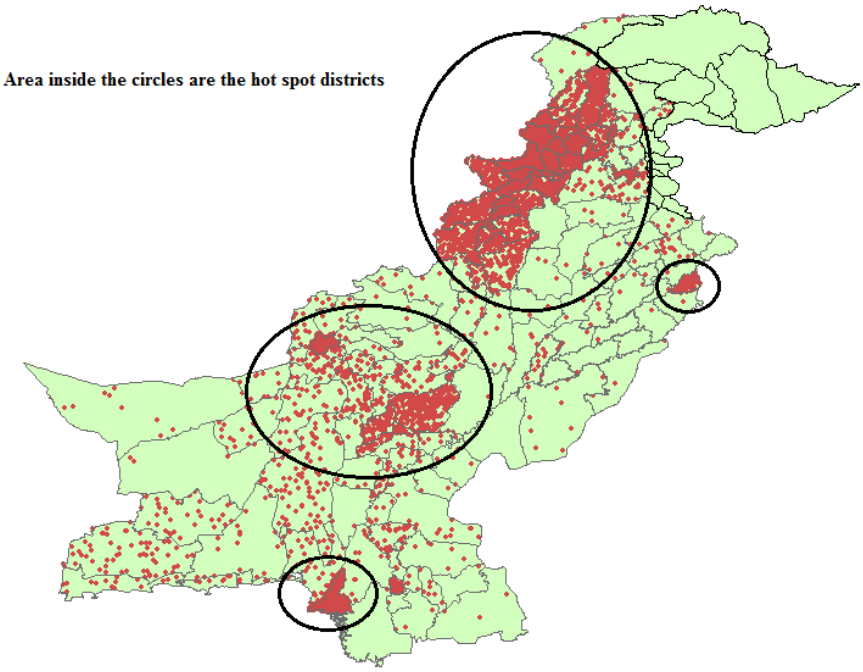


(d) The distribution of Terrorist Attacks in 2007-2012 (territorial control)

Figure 5.3: The spatial Distribution of Terrorism in Pakistan

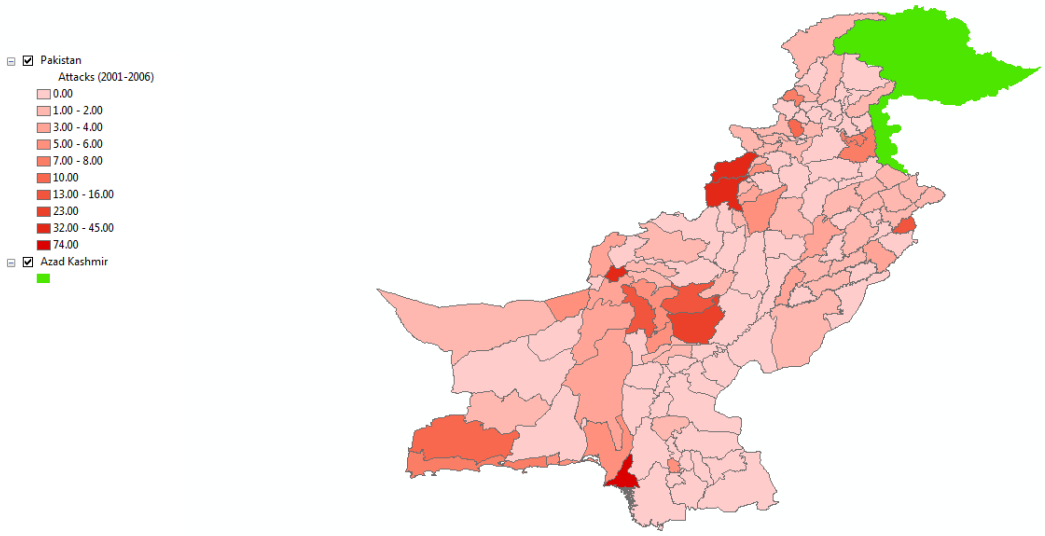


(a) Spatial Distribution of Aggregate Terrorist Incidents, 2001-2006

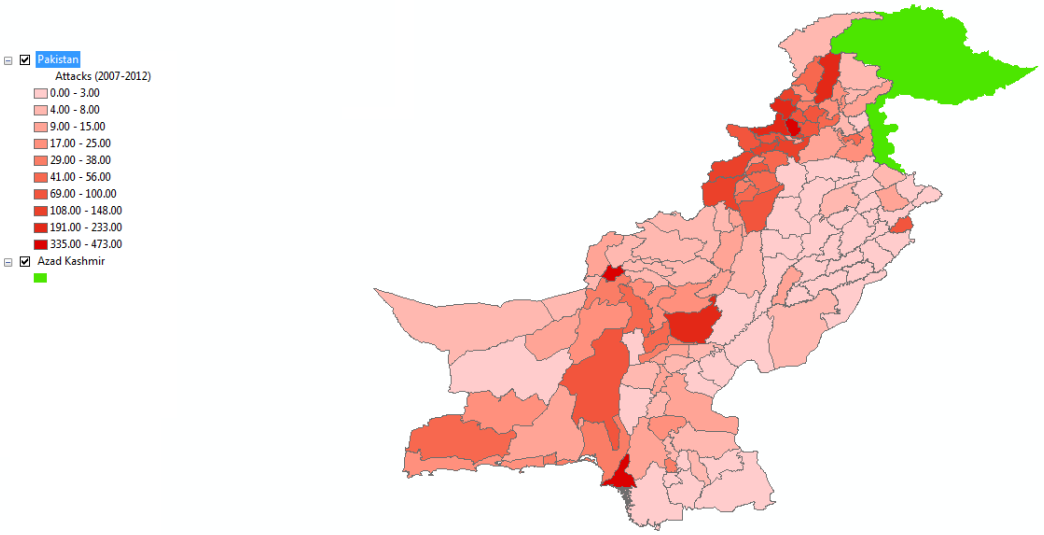


(b) Spatial Distribution of Aggregate Terrorist Incidents, 2007-2012

Figure 5.4: **Spatial Distribution of Terrorism in Pakistan: Decile Maps**



(a) Spatial Distribution of Aggregate Terrorist Incidents, 2001-2006



(b) Spatial Distribution of Aggregate Terrorist Incidents, 2007-2012

5.4.3 Summary Statistics of the Response and Control Variables

To test hypotheses H_3 and H_4, the main predictor of this study is terrorism prevention (TP) interventions at the district level. These interventions comprise proactive actions like the use of military force against terrorists. The nature and intensity of these sanctions against terrorism are difficult to measure quantitatively. To minimize measurement error, reliance is placed on dummies rather than exploiting more noisy information on the interventions of the armed forces in a district. Thus, we use a binary variable for the district where military strikes, search operations, curfews and raids are carried out against terrorists. An important point to emphasize here is that whenever military intervention happened, on the average, it is lasted for more than three months in a district. Similarly, intervention is observed in a different district(s) in each year of study (ISPR, 2014). Summary statistics and extreme values of all variables are reported in table 5.2, while, data sources and the exact definition of each variable are explained in table 5.8 of appendix 5.8.

Table 5.2 shows that the total number of terrorist attacks per district accelerated from 3 in period 2001-2006 to 41 in the later years, 2007-2012. Similarly, average attacks increased from 1 in 2001-2006 to 10 in 2007-2012. Furthermore, one can calculate terrorist attacks in the contagious space (districts) of each and every district. Attacks in the neighborhood are the weighted averages and calculated from average values.[13] Terrorism prevention is the intervention of the military in a district. The information about neighboring locations is obtained through GIS software. The intuition behind weighted averages is explained in subsection 5.5.1.

Control variables include literacy rate, health units, population density, urbanization, turnout in the general elections, Frontier Crimes Regulations (FCR), police stations, latitude, longitude, elevation and regional dummies. FCR is the procedural law which is different from the Pakistan Penal Code. The law states that three basic rights are not applicable to the residents; the right to appeal against detention, the right to legal representation and the right to present reasoned evidence (Shinwari, 2011). It is one of the important predictors of terrorist attacks and captures differences in the nature of laws among districts and its correlation with terrorist activities. FCR is applicable to FATA in the North-West region. There are 13 districts/tribal units where FCR is currently

[13]Weighted averages of terrorism in the neighborhood of a district are also calculated from the total number of terrorist attacks, however, we did not report them in the following table.

applicable and the majority of the crimes, including terrorism in these districts are tried under the customary law covered by the FCR. It is predicted that FCR might have significant impact on the future terrorist attacks as it may change the opportunity cost of committing terrorism.

Table 5.2: Summary Statistics for 2001-2006 & 2007-2012 Periods

	2001-2006			
Variable(s)	Mean	Std. Dev.	Min	Max
Terrorist Attacks (Total)	2.52	6.22	0	35
Terrorist Attacks (Average)	1.23	2.12	0	12.33
Terrorist Attacks in the Direct (1^{st} Order) Neighborhood	1.24	1.01	0	4.78
Terrorism Prevention Interventions	0.15	0.36	0	1
Terrorism Prevention Interventions in the Neighborhood	0.14	0.17	0	0.67
Population Density	316.70	472.84	4	3566
Urbanization	19.89	16.61	1.7	100
Health Units (Average)	116.30	109.60	18	930
Literacy Rate (Average)	39.72	17.04	7.05	79.62
Election Turnout	37.56	10.29	16	62.41
Pak-Afghan Border	0.13	0.34	0	1
FCR	0.11	0.32	0	1
Police Stations (Average)	21.65	21.77	1	159
Police Stations in the Direct (1^{st} Order) Neighborhood	22.38	12.24	2.8	76.67
	2007-2012			
Terrorist Attacks (Total)	40.98	75.78	0	473
Terrorist Attacks (Average)	9.52	18.54	0	139.67
Terrorist Attacks in the Direct (1^{st} Order) Neighborhood	7.67	6.00	0.78	27.28
Terrorism Prevention Interventions	0.20	0.40	0	1
Terrorism Prevention Interventions in the Neighborhood	0.20	0.21	0	0.8
Literacy Rate (Average)	46.25	19.22	7.80	87.8
Election Turnout	40.93	12.00	15.42	77.46
Police Stations (Average)	25.76	24.23	1	154
Police Stations in the Direct (1^{st} Order) Neighborhood	26.59	12.31	5.2	79

Note: Information on variables like FCR, Pak-Afghan Border, Population Density and Urbanization are similar for both periods. Therefore, they are not reported in the 2007-2012 period summary statistics. Other control predictors are Latitude, Longitude and Elevation of a district.

5.5 Empirical Strategy

For an empirical analysis, the spatial methodology developed by Anselin (1988) is used. The spatial lag model assumes that terrorists in one district may also commit terrorist activities in the

neighborhood, and thus, generate spillover effect from one district to another. Given the research question, terrorism prevention efforts might decrease attacks in a district, but, displace them to the neighborhood. Therefore, over time, the spatial lag model captures the spillover effect of a policy. Similarly, the spatial error model controls for the spatial dependence in the error term.

Consider the following simple regression equation:

$$y = x\beta + e \tag{5.1}$$

where y is the dependent variable (terrorism) $k \times 1$ vector; x is the $1 \times k$ row vector of the covariates; β is the corresponding matrix in the $k \times 1$ vector of the coefficients; and e is the error term. To account for the spatial dependency, the spatial lag term (the weighted average of response variable in the contiguous districts) is added to equation 5.1, which becomes:

$$y = \lambda w_y + x\beta + e \tag{5.2}$$

where

$$e = \rho w_e + u \tag{5.3}$$

In equation 5.2, λ is the spatial dependence parameter and w_y is the weight matrix of the spatially lagged dependent variable. Alternative choices are available to measure w matrix.[14] For this study, the inverse distance and simple contiguity to the 1st order districts are considered.[15] The contiguity w matrix is calculated to measure the displacement/diffusion effects of an intervention. Likewise, ρ is the spatial error dependence parameter in the equation 5.3.

[14]These include inverse distance matrix; inverse of the euclidean distance between the geographic coordinates; the arc distance between the geographic coordinates; a matrix based on social, economic and political indicators; the simple contiguity among districts; etc.

[15]The first order contiguity weight matrix is calculated when a given district is connected to the neighboring districts with the shared borders and vertex. The value of the spatial lag is equal to the weighted average (terrorist attacks) in the contiguous districts.

5.5.1 The Standardized Spatial Weight Matrix

Lets define a spatial weight matrix w with the following properties:

$$w_{ij} = \begin{cases} 1 & \text{if } i \text{ is contiguous to } j \\ 0 & \text{otherwise} \end{cases} \tag{5.4}$$

If districts i and j are neighbors, the weight is 1, otherwise 0. Equation 5.4 can be written in $n \times n$ matrix as:

$$w = \begin{bmatrix} w_{11} & \dots & \dots & w_{1n} \\ w_{21} & \dots & \dots & w_{2n} \\ \dots & \dots & \dots & \dots \\ w_{n1} & \dots & \dots & w_{nn} \end{bmatrix} \tag{5.5}$$

In the context of our study, the weight matrix is 115×115 dimensions. Each row is divided by the sum total of that row to get the standardized spatial weight matrix. After the row standardization, the spatial value is calculated as the weighted average:

$$y_i = \sum_j w_{ij} y_j \tag{5.6}$$

where w_{ij} are the row standardized weights and y_j is the value of y in the district j.[16]

5.5.2 Identification

Pooled data is used to provide precise estimates of the relationship between terrorism prevention interventions and terrorist incidents. Firstly, it considers the *full sample* of districts to study the externalities of terrorism prevention in the form of displacement or diffusion of benefits, that is, to test (H_3). Equation 5.7 is designed to estimate the externalities for the *full sample* through spatial lag and spatial error regression models. Secondly, to be more specific, spatial regression discontinuity design (SRDD) is also used to capture the average treatment effect of terrorism prevention

[16] In equation 5.2, w_y is endogenous and must be instrumented. Thus, we estimate equation 5.2 with the Generalized Method of Moments (GMM) estimator, in particular, we use the generalized spatial two stage least squares (GS2SLS) estimator of Kelejian and Prucha (1998). GS2SLS in our estimates become the usual 2SLS estimator, where instrumental variables for w_y are chosen among the vector of x $(wx, w^2x, ..., w^nx)$.

efforts. The use of SRDD would allow an analysis of displacement/diffusion to the nearest of the neighborhood. It is estimated only for the *territorial control sample* and its neighborhood districts due to the explicit boundary line between treatment and control groups. The SRDD is explained in equations 5.8-5.10, given below:

Consider the following simple regression equation:

$$Terrorism_i = \alpha + \beta\, W_{TP_i} + \gamma^{'}\, X_i + \phi_p + e_i \tag{5.7}$$

where $Terrorism_i$ is the pooled average/total terrorist incidents; W_{TP_i} is the weighted average of terrorism prevention in the neighborhood around district i, which is calculated to analyze the spillover of terrorism prevention to district i. Theoretically, terrorists can move in any direction in 360° around a district, when terrorism prevention strategies raise the opportunity cost of terrorist activities in a place. Likewise, it is costly for the government to police the 360° circle around a district. If there are interventions in more than one district in a 360° circle around a district, it would be challenging to observe the spillovers of interventions separately from each other. Therefore, the weighted average of interventions in the 360° circle around a district is constructed. If there is no intervention in the circle, the value is zero. If intervention(s) is observed in the circle, it is calculated as the weighted averages, while the weight is assigned on the basis of the number of districts in the circle. The radii of the circle range between 0-75 kilometers. X_i is a set of control variables; ϕ_p are province-fixed effects; and finally e_i is the error term. The set of observable X_i is comprised of demographic and socioeconomic determinants of terrorism. Similarly, equations 5.8-5.10 are designed to explore the externalities from terrorism prevention through SRDD:

$$Terrorism_i = \alpha_t + \beta_t(X - b) + e_i \tag{5.8}$$

$$Terrorism_i = \alpha_c + \beta_c(X - b) + e_i \tag{5.9}$$

where α_t and α_c are the intercepts in treatment and control districts on the opposite side of the border; b represents the border line; $(X - b)$ is the distance of a district from the border.

By estimating equations 5.8 and 5.9, the impact of terrorism prevention can be computed as the difference between the two regression intercepts, α_t and α_c, on the two sides of the boundary.

The pooled version of equations 5.8 and 5.9, as suggested by Lee and Lemieux (2009) are used. Thus, letting $\tau = \alpha_t$ - α_c, and using D to indicate the treatment variable, the estimating equation is:

$$Terrorism_i = \alpha + \tau * D_i + (\beta_t - \beta_c)(X - b) + (\beta_t - \beta_c) * D * (X - b) + e_i \tag{5.10}$$

Equation 5.10 is flexible enough to allow the regression function to differ on both sides of the border by including interaction terms between D and X. The parameter of interest is τ, i.e., the average effect of having a treated (compared to a control group) and can be interpreted as the jump between the two regression lines at the border. Importantly, the estimating equation 5.10 is run for samples of increasing widths (w) around the border. The idea is that reallocation of terrorism due to terrorism prevention efforts should be higher with smaller bandwidths, while decreasing with larger ones.

Finally, to test H_4, the following equation is used:

$$Terrorism_i = \alpha + \beta\, TP_i + \gamma^{'}\, X_i + \phi_p + \epsilon_i \tag{5.11}$$

where (TP) is the terrorism prevention intervention in a district and $\in \{0, 1\}$.

5.6 Results and Discussion

To provide evidence on the displacement/diffusion of terrorism prevention interventions, the full sample period is divided into two equal sub-groups, each consists of six years. The supposition is that 2001-2006 period is economically and politically different from later years, 2007-2012. For example, the average GDP growth rate of Pakistan was 5.21% and 2.95% in 2001-2006 and 2007-2012 periods, respectively (Economic Survey, 2013). Similarly, the political governance transformed from dictatorship to democracy in 2008.[17] The unavailability of yearly information on economic

[17]Furthermore, scattered militants formed the organized terrorist group in Pakistan, Tehrik-i-Taliban Pakistan (TTP) in 2007; the drone attacks against militant hideouts intensified since 2006; terrorist violence against the tribal elders, who shared important information with the government against militants, increased significantly; etc.

indicators of terrorism at the district level constraint us to perform only a pooled regression.

5.6.1 Displacement Vs. Diffusion in 2001-2006

As discussed in section 5.2, there is no reason to believe that terrorist activities follow the administrative boundaries of districts. Terrorists may indeed move around the corner to other districts where the opportunity cost of carrying out terrorist activities is low. There may be relevant spatial spillovers from a district to its neighbors. To explore this effect, table 5.3 presents regressions of terrorism prevention interventions on terrorist activities in the neighboring districts. Step by step, we control different specifications in table 5.3 for demographics, heterogeneity in criminal laws among districts, police presence, socio-economic variables as well as for provincial dummies and spatial correlation.

Table 5.3 reports the response of average terrorist incidents to terrorism prevention interventions in the neighborhood. All the specifications are based on equation 5.7. The coefficient estimates of W_{TP} show that terrorists respond to the sanctions imposed by government intervention. Under various specifications, terrorism prevention, W_{TP}, displace about 2-3 terrorist attacks to the neighborhood. The coefficients of W_{TP} are statistically significant in the seven regressions.

An important control variable in table 5.3 is the average number of police stations and substations in a district and its neighborhood. Significant and insignificant but small coefficient values of the *Police* variable shows that the presence of a police force does not have any significant deterrence effect on the average number of terrorist incidents. It implies that terrorists are not deterred by the presence of more police stations and centers. This result is counter intuitive; nonetheless, one of the plausible reasons may be that police in Pakistan lack modern equipment, training and monetary incentives (salaries and pensions) to counter terrorism crimes (Hassan, 2011). Further, the police itself is a preferred target of terrorists, because, the expected payoff from targeting police is higher relative to civilian life and property. Reverse causality may also be the reason of the counter intuitive effects of police on terrorism. Therefore, the regression is controlled for the weighted average of police stations, W_{Police}, in the neighborhood. Its estimators are small and insignificant in the last two columns. Hence, an increase in the neighborhood police stations does not have any spillover effect on terrorism.

Table 5.3 further elaborates that a major proportion of the attacks are concentrated in urban districts. Some districts in Pakistan are also provincial capitals and commercial markets. Accordingly, urban districts exposed to 2-5 attacks during the period of analysis. The plausible explanation may be that the expected payoff of attacking urban districts with commercial or capital centers are higher to the terrorists relative to other districts. The expected return depends on the severity of the attack (fatalities and injuries) plus its spillover effects (fear and coercion) to individuals of other districts. Hence, media coverage is relatively higher in urban areas than rural units; it is plausible that the urban districts with the capital cities may experience more attacks compared to other districts.

FCR is another important regressor which captures the impact of a differentiated legal framework in cross sectional units. Districts where the FCR is implemented as the procedural law experience 2-5 times higher attacks relative to districts where the 1997 Counter-terrorism Act is implemented as a legal protection against terrorists. The plausible explanation may be that due to the non-applicability of the 1997 Counter-terrorism Act to some districts, the captured terrorists are kept in detention camps and are not properly prosecuted and convicted. Due to the lack of proper legal procedure against terrorists in the FCR districts, around 700 alleged terrorists are currently detained in different detention camps (Bokhari, 2013). The low probability of conviction, punishment and resultant deterrence in the FCR districts decrease the opportunity cost of terrorist activities.[18]

The above results, in particular, the signs, magnitude and significance of the coefficients of W_{TP} are extremely robust to alternative matrices of spatial weights. The same results are observed using euclidean distance, road travel distance and district contiguity standardized matrices.

The estimation of equation 5.7 is repeated, while considering the total instead of average terrorist attacks. Table 5.4 reports regression results based on total terrorist attacks as a response variable to terrorism prevention, W_{TP}. The parameter estimates of W_{TP} in various specifications show that preventive measures in the neighborhoods cause the displacement of 6-9 aggregate attacks. The signs and significance of control variables like $Urbanization$, FCR, $Police$ and W_{Police}

[18]The federal government has currently detained over 700 suspected terrorists in different internment centers in Pakistan's tribal areas. Their prosecution cannot be held as long as the armed forces are stationed in the region under Action in Aid of Civil Power Regulation 2011 (Bokhari, 2013).

Table 5.3: Displacement Vs. Diffusion in 2001-2006

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
W_{TP}	1.724*	2.697***	1.752*	2.425***	1.747**	1.784**	1.685**
	[0.962]	[1.042]	[1.103]	[0.834]	[0.823]	[0.804]	[0.859]
Urbanization			4.671***	4.729***	2.592***	2.611***	1.324
			[0.797]	[1.697]	[0.904]	[0.926]	[0.839]
FCR			1.978***	2.763***	4.621***	4.638***	4.944***
			[0.764]	[0.942]	[1.215]	[1.251]	[1.414]
Police					0.0400**	0.0396**	0.028
					[0.0160]	[0.0158]	[0.0187]
W_{Police}						0.00313	-0.00291
						[0.0117]	[0.0104]
λ	-0.021	0.010	0.003	0.022**	0.019*	0.019*	0.019*
	[0.037]	[0.012]	[0.015]	[0.012]	[0.011]	[0.011]	[0.011]
ρ	0.033	-0.037	-0.008	-0.030	-0.015	-0.015	-0.021
	[0.027]	[0.027]	[0.019]	[0.028]	[0.027]	[0.027]	[0.028]
Region Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

Note: The dependent variable is a pooled six years average of terrorist attacks by district. W_{TP} is the standardized weighted averages of terrorism prevention in the neighborhood of a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

are the same as observed in table 5.3. Therefore, they are not reported in the table 5.4.

Table 5.4: Displacement Vs. Diffusion in 2001-2006

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
W_{TP}	7.173*	7.551*	9.215**	7.665*	6.963*	6.885*	5.929**
	[3.882]	[4.095]	[4.204]	[4.028]	[3.915]	[3.763]	[2.685]
λ	-0.003	0.022	0.050**	0.003	0.007	-0.002	-0.077***
	[0.014]	[0.023]	[0.022]	[0.051]	[0.039]	[0.046]	[0.028]
ρ	0.283***	-0.017	-0.030	0.023	0.040	0.046	0.174***
	[0.101]	[0.029]	[0.033]	[0.045]	[0.039]	[0.039]	[0.056]
Region Fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

Note: The dependent variable is a pooled total of terrorist attacks by district. W_{TP} is the standardized weighted averages of terrorism prevention in the neighborhood of a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

5.6.2 Displacement Vs. Diffusion in 2007-2012

Tables 5.5 reports regressions based on average terrorist attacks between 2007-2012. The different specifications are based on equation 5.7, which is designed to capture displacement or diffusion spillovers of terrorism prevention interventions. The coefficients of terrorism prevention, W_{TP}, are statistically different from zero, that intervention displaces 14-32 terrorist attacks into the close proximity. It illustrates that there is a significant spillover (displacement) effect of terrorism prevention measures. Similarly, FCR, $Police$ and W_{Police} estimates have the same signs and significance as observed in the previous section.

To test the robustness of these findings, the baseline model was estimated again while adding a number of controls to the alternative specifications of equation 5.7. First, two important regressors are added to the 2007-2012 analysis; these are US drone strikes against terrorists hideouts in the tribal districts of FATA. A common perception in Pakistan is that drone strikes are counter-productive and create collateral damage that may attract new recruits to the cause, which in turn,

can result in a wider conflict. Similarly, terrorists targeted a large number of tribal elders who organize their tribes and exchange information with the government regarding various economic, social and political issues. It is assumed that the killing of the tribal elders would create chaos in the society which may lead to wider conflict in the future (Standord Law School, 2012). The results are presented in table 5.6. It shows that the coefficients of *Drone Strikes* are marginally significant while of *Tribal Elders* are statistically close to zero. Nevertheless, the displacement of terrorism to nearby neighborhoods by terrorism prevention, W_{TP}, are the same as observed in table 5.5.

Finally, we repeat the same exercise while considering the total number of terrorist attacks as a response variable to the terrorism prevention intervention in the neighborhoods. The results are reported in table 5.7. It shows that W_{TP} significantly displaced 81-143 attacks during 2007-2012. The effect varies due to different specifications of equation 5.7.

5.6.3 Displacement Vs. Diffusion: Average Treatment Effect

We also exploit the spatial regression discontinuity identification strategy to get more precise estimates of terrorism displacement to the nearest neighborhood. As discussed in section 5.4 that militants and terrorists had gained limited control over a specific territory. For instance, FATA and Baluchistan regions are considered control and recruiting areas of terrorists. Similarly, terrorism prevention interventions continued in these districts for longer periods. The dark line in figure 5.5 is the border line which divides the districts between treated and control districts. Treated districts are those where terrorists had some territorial advantage (shaded area), while, the white region consists of control districts where plausible displacement of continuous terrorism prevention intervention might occur. Spatial regression discontinuity gives an average treatment effect to the closest control districts.

Table 5.8 presents average displacement of terrorism from treated to control districts. These results are based on equation 5.10, while considering different bandwidths of distances from the treated to control districts. The SRDD estimates are insignificant for the bandwidth 25km-50km in both periods because most of the treated districts have a 1^{st} contiguous control district in the bandwidth of 50km-75km. Therefore, the results show that there is a significant displacement

Table 5.5: Displacement Vs. Diffusion in 2007-2012

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
W_{TP}	29.35***	31.81***	14.21*	28.92***	16.40**	22.77**	21.33**
	[7.959]	[8.490]	[7.683]	[9.167]	[7.588]	[9.052]	[10.37]
Urbanization			7.571**	0.988	9.345	6.887	13.21
			[2.978]	[3.530]	[7.202]	[10.37]	[15.72]
FCR			9.849*	29.30***	24.33**	16.05**	33.26**
			[6.293]	[11.15]	[10.70]	[7.248]	[13.96]
Police					0.256**	0.195**	0.063
					[0.110]	[0.0912]	[0.0784]
W_{Police}						-0.189	-0.0485
						[0.163]	[0.0897]
λ	0.006	-0.009	-0.007	-0.041*	-0.006	0.013	-0.076**
	[0.009]	[0.019]	[0.017]	[0.023]	[0.017]	[0.020]	[0.032]
ρ	-0.010	-0.018	-0.030	0.009	-0.072***	-0.051	0.037
	[0.014]	[0.020]	[0.020]	[0.029]	[0.023]	[0.052]	[0.036]
Region Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

Note: The dependent variable is a pooled six years average of terrorist attacks by district. W_{TP} is the standardized weighted averages of terrorism prevention in the neighborhood of a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

Table 5.6: Displacement Vs. Diffusion in 2007-2012

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
W_{TP}	22.02***	27.45***	28.15***	26.23***	26.82***	19.98**	19.00*
	[7.676]	[7.862]	[7.436]	[8.745]	[8.113]	[8.942]	[9.754]
Drone Strikes	0.994*	1.209*	1.601**	1.546*	1.771*	1.489**	1.458*
	[0.554]	[0.661]	[0.705]	[0.834]	[0.995]	[0.699]	[0.802]
Tribal Elders	-1.379	2.034	4.273	3.24	2.74	2.863	2.386
	[2.608]	[3.178]	[2.800]	[3.235]	[3.242]	[5.307]	[3.456]
λ	0.004	-0.013	0.003	-0.050***	-0.050***	0.013	-0.079**
	[0.008]	[0.018]	[0.016]	[0.018]	[0.019]	[0.019]	[0.032]
ρ	-0.009	-0.024	-0.021	0.020	-0.008	-0.067	0.046
	[0.018]	[0.025]	[0.025]	[0.033]	[0.042]	[0.064]	[0.040]
Region Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

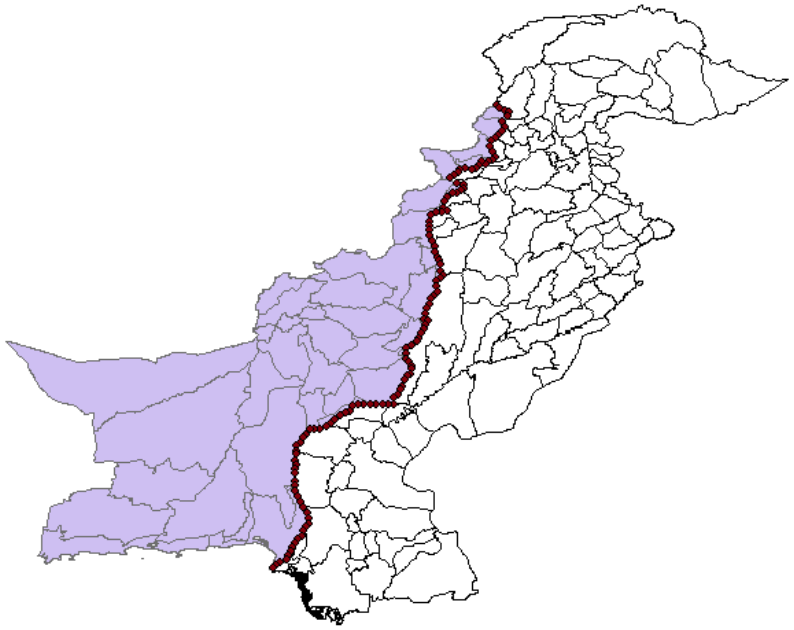
Note: The dependent variable is a pooled six years average of terrorist attacks by district. W_{TP} is the standardized weighted averages of terrorism prevention in the neighborhood of a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

Table 5.7: Displacement Vs. Diffusion in 2007-2012

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
W_{TP}	142.5***	121.1***	122.4***	108.9***	124.8***	110.6***	81.04**
	[35.17]	[36.19]	[33.39]	[37.76]	[37.70]	[41.52]	[41.01]
λ	0.002	-0.031	-0.016	-0.062**	-0.053**	-0.074***	-0.088***
	[0.007]	[0.019]	[0.017]	[0.031]	[0.022]	[0.027]	[0.033]
ρ	-0.014	-0.001	-0.018	0.039	0.015	0.101	0.048
	[0.015]	[0.025]	[0.022]	[0.042]	[0.035]	[0.078]	[0.037]
Region Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

Note: The dependent variable is a pooled total of terrorist attacks by district. W_{TP} is the standardized weighted averages of terrorism prevention in the neighborhood of a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

Figure 5.5: Treated and Control Districts



of terrorism to districts which are in the radius of 75 km from the treated districts. These are statistically significant for both 2001-2006 and 2007-2012 periods.

Table 5.8: Displacement Vs. Diffusion: Spatial Regression Discontinuity

	2001-2006			2007-2012		
Bandwidth(s)	25km-50km	50km-75km	75km-100km	25km-50km	50km-75km	75km-100km
	0.132	0.464**	0.111	-0.590	8.849***	-0.332
	[0.245]	[0.233]	[0.198]	[2.796]	[2.211]	[2.470]
R^2	0.08	0.14	0.09	0.19	0.21	0.06
Districts	54	91	103	54	91	103

Note: The dependent variable is a pooled six years average of terrorist attacks by district. Distance from treated to control districts are calculated in kilometers.
*** < 0.01; ** < 0.05; and * < 0.10

To provide further robustness to the results, a counter-factual analysis of equation 5.7 is performed. That is, we calculated the standardized weighted average of terrorists attacks in the closest neighborhood of treated districts. Nearest districts include districts which share borders with the intervention districts. The regression results are reported in table 5.9. Terrorism prevention, TP,

significantly increases terrorist attacks in the 1st order neighborhood in both periods of analysis. It displaces an average 1 and 4 attacks to the closest districts in 2001-2006 and 2007-2012 periods, respectively.

Table 5.9: Displacement Vs. Diffusion to 1st Order Neighborhood

Independent variables	2001-2006	2007-2012
TP	1.252**	3.919**
	[0.539]	[2.035]
λ	0.005	0.011*
	[0.005]	[0.006]
ρ	-0.066	-0.014
	[0.039]	[0.029]
Region Fixed Effects	Yes	Yes
Geographic Controls	Yes	Yes
Economic Controls	Yes	Yes
Districts	115	115

Note: The dependent variables are the standardized weighted averages of terrorist attacks in the 1^{st} order neighborhood of an intervention district. TP is a binary indicator for terrorism prevention intervention in a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

5.6.4 Backlash or Vengeance Effect

A specific literature on terrorism points out that terrorists may retaliate to terrorism prevention. This school of thought argues that in the short run, terrorism prevention strategies raise the deterrence level, but may diminish it in the long run through a non-discriminatory approach which creates a public cost in the form of civilian casualties and destruction of social, political and economic infrastructure (De Figueiredo Jr and Weingast, 2001; Rosendorff and Sandler, 2004; De Mesquita, 2005). Non-discriminatory harsh measures may foster hatred and desire for revenge among the population (Jaeger et al., 2012).

To explore this effect, tables 5.10 and 5.11 provide evidence of vengeance from terrorist to terrorism prevention, TP. These results are derived by estimating equation 5.11. The parameter estimates of TP are relatively robust in statistical significance under various specifications in table

5.10 than 5.11. The probable reason is that terrorism prevention interventions like law enforcement agencies search operations, air and ground patrolling, etc., were more consistent and continuous for the later period 2007-2012 than earlier years 2001-2006. However, no claim of causation is made here, because, it could be the case that terrorism prevention was caused by higher terrorist attacks. Treating the coefficients of TP as correlations still gives important information, that is, retaliation may not be a feasible option for terrorists in the wake of consistent surveillance.

Table 5.10: The Backlash in 2001-2006

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
TP	3.286***	1.780***	4.489***	4.739***	5.771***	5.909***	3.455***
	[0.843]	[0.487]	[1.349]	[1.293]	[1.152]	[1.129]	[0.702]
λ	-0.033***	-0.028***	-0.015**	-0.016**	-0.019***	-0.020***	-0.015**
	[0.007]	[0.004]	[0.006]	[0.006]	[0.005]	[0.005]	[0.006]
ρ	0.327**	0.573**	-0.061**	-0.065**	-0.101***	-0.457***	-0.075***
	[0.146]	[0.262]	[0.028]	[0.029]	[0.037]	[0.094]	[0.028]
Region Fixed Effects	No	No	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

Note: The dependent variable is a pooled six years average of terrorist attacks by district. TP is a binary indicator terrorism prevention intervention in a district. Robust standard errors (in parentheses) are clustered by province.
*** < 0.01; ** < 0.05; and * < 0.10

5.7 Conclusion

Given the substantial predicted cost of terrorism and its welfare effects on the economy of Pakistan, the lack of any study on the spatial behavior of terrorists is unsatisfactory. This study is an attempt to narrow down this gap. It has presented several hypotheses to uncover the geographic response of terrorists to the negative sanctions impose by a government through terrorism prevention measures, like the use of military force. To empirically test the hypotheses, the analysis is based on two time periods, (2001-2006 & 2007-2012), and both periods are different with respect to economic and political attributes. Robust evidence is presented from pooled information that, terrorism preven-

Table 5.11: The Backlash in 2007-2012

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
TP	10.74**	8.232	8.414	11.43*	9.565*	9.544*	8.483*
	[5.090]	[6.909]	[6.671]	[6.299]	[5.859]	[5.647]	[4.756]
λ	0.003	0.001	-0.001	0.028**	-0.064	0.012	0.003
	[0.011]	[0.017]	[0.016]	[0.013]	[0.045]	[0.012]	[0.020]
ρ	-0.016	-0.029	-0.031	-0.057***	0.384**	-0.071***	-0.091***
	[0.018]	[0.020]	[0.020]	[0.022]	[0.175]	[0.024]	[0.033]
Region Fixed Effects	No	No	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	No	No	Yes	Yes	Yes	Yes
Economic Controls	No	No	No	No	No	No	Yes
Districts	115	115	115	115	115	115	115

Note: The dependent variable is a pooled six years average of terrorist attacks by district. TP is a binary indicator for terrorism prevention intervention in a district. Robust standard errors (in parentheses) are clustered by province. *** < 0.01; ** < 0.05; and * < 0.10

tion interventions significantly displace terrorist incidents to the neighboring districts. To assess this result, the study analyzes the variation in terrorist attacks and terrorism prevention measures across Pakistani districts. The results further show significant spatial correlation among terrorist incidents, which illustrates that terrorism events are clustered, not random. It also highlights that the diffusion effect is dominated by the displacement effect of a policy intervention in the case of terrorism crimes.

The derived empirical results are statistically robust to the endogeneity consideration of the spatial lag of the dependent variable, pooled average and the total number of terrorist attacks, spatial regression discontinuity design and counter factual estimation. Furthermore, the analysis also reveals that differences in the legal framework across districts regarding conviction and punishment of crimes related to terrorism significantly matters for future terrorist attacks.

The given results imply an important policy oriented observation. That is, terrorism prevention polices, especially offensive police and military raids, search operations and crackdowns increase the opportunity cost of terrorism in a treated district, and subsequently cause the displacement of terrorism to the contiguous control districts. Therefore, such policy creates a public cost on the neighborhood.

An attempt has been made to provide a credible estimate of the causal effect, but more precise policy implications would be purely speculative. Further research is needed on the smaller administrative unit (municipality level) to determine if these results and their magnitudes can be generalized.

5.8 Chapter 5 Appendix

Table 5.12: Variable Descriptions and Data Sources

Variable	Description	Source
Terrorist Attacks	The GTD defines terrorism as "terrorist attack as the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." The district level (2001-2006) and (2007-2012) averages/total are calculated.	Global Terrorism Database (2013)
Terrorism Prevention Interventions	Interventions include aggressive, coercive, preemptive or offensive strategies like military strikes, raids, crackdowns, search operations and curfews.	(Jones and Fair, 2010; ISPR, 2014)
Population Density	The number of people living per square kilometer.	Bureau of Statistics, Government of Pakistan
Urbanization	Places with the municipal corporation, town committee or cantonment.	Bureau of Statistics, Government of Pakistan
Literacy Rate	The number of literate persons as a percentage of the population aged 10 and above. District level literacy is used for the years 2001, 2003, 2005 and 2008.	Bureau of Statistics, Government of Pakistan
Health Units	Health units include the number of hospitals, rural health centers, basic health units, dispensaries, etc. The district level (2001-2006) and (2007-2012) averages are calculated.	Bureau of Statistics, Government of Pakistan
Election Turnout	The percentage of votes polled to registered votes. The district level turnout is used for the years 2002 and 2008.	Election Commission of Pakistan
Police	The total number of Police Stations and Substations in a district. The district level (2001-2006) and (2007-2012) averages are calculated.	Bureau of Statistics, Government of Pakistan
Drone Strikes	The total number of drone strikes in a district. The district level information (2007-2012) are calculated.	Standord Law School (2012)
Tribal Elders	The total number of Tribal elders targeted by terrorist groups. The district level information (2007-2012) are calculated.	SATP (2014)
Frontier Crimes Regulation (FCR)	FCR comprises a special set of laws of Pakistan which are applicable to the Federally Administered Tribal Areas (FATA) of northwestern Pakistan. The law states that three basic rights are not applicable to the residents of FATAappeal, wakeel and daleel (the right to request a change to a conviction in any court, the right to legal representation and the right to present reasoned evidence, respectively).	Bureau of Statistics (FATA Cell), Planning and Development Department FATA Secretariat, Peshawar, Pakistan

Figure 5.6: Time Series of Terrorist Attacks in Districts of Baluchistan Province, 2001-2012

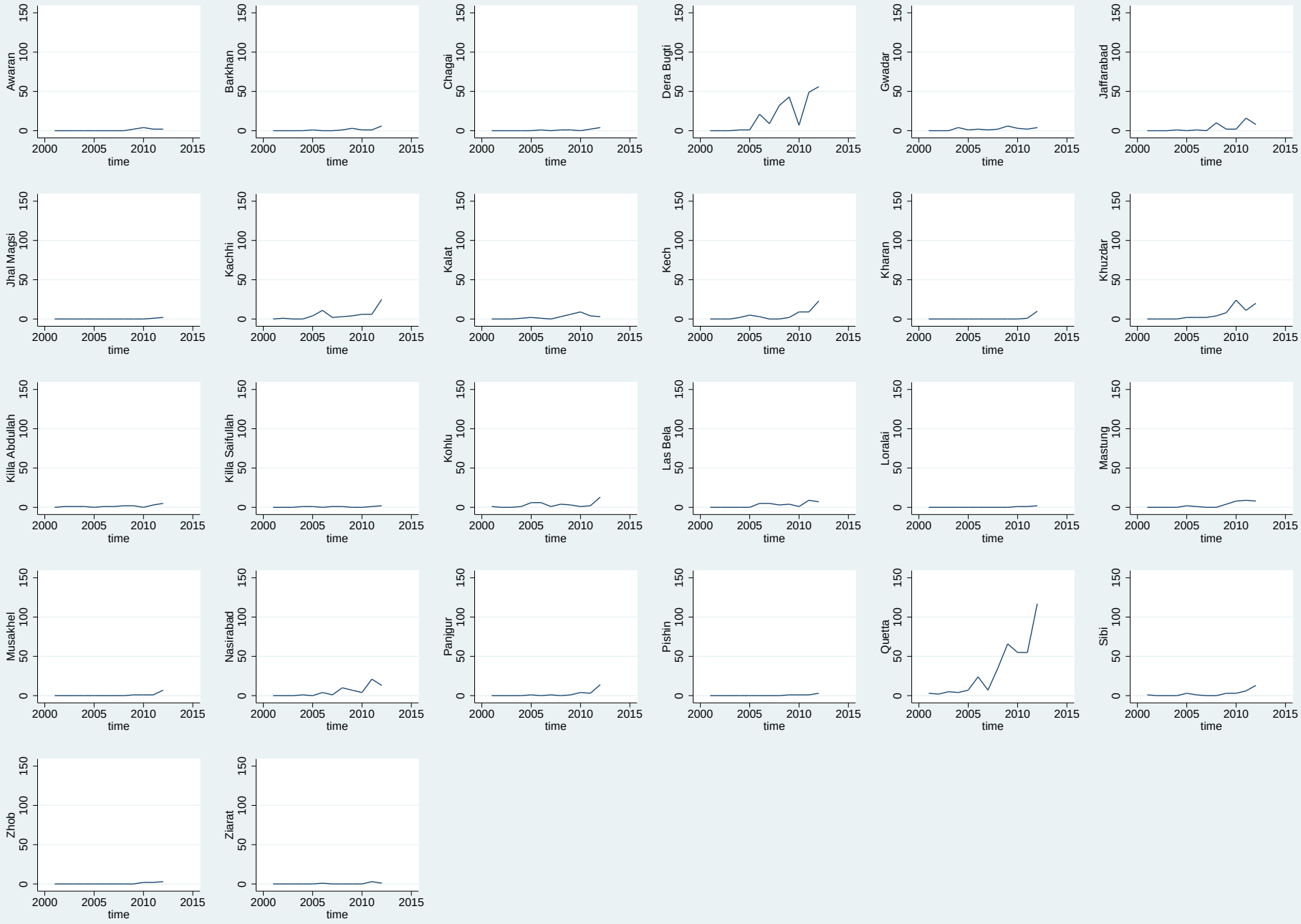


Figure 5.7: Time Series of Terrorist Attacks in Districts/Agencies of Federally Administered Tribal Areas (FATA), 2001-2012

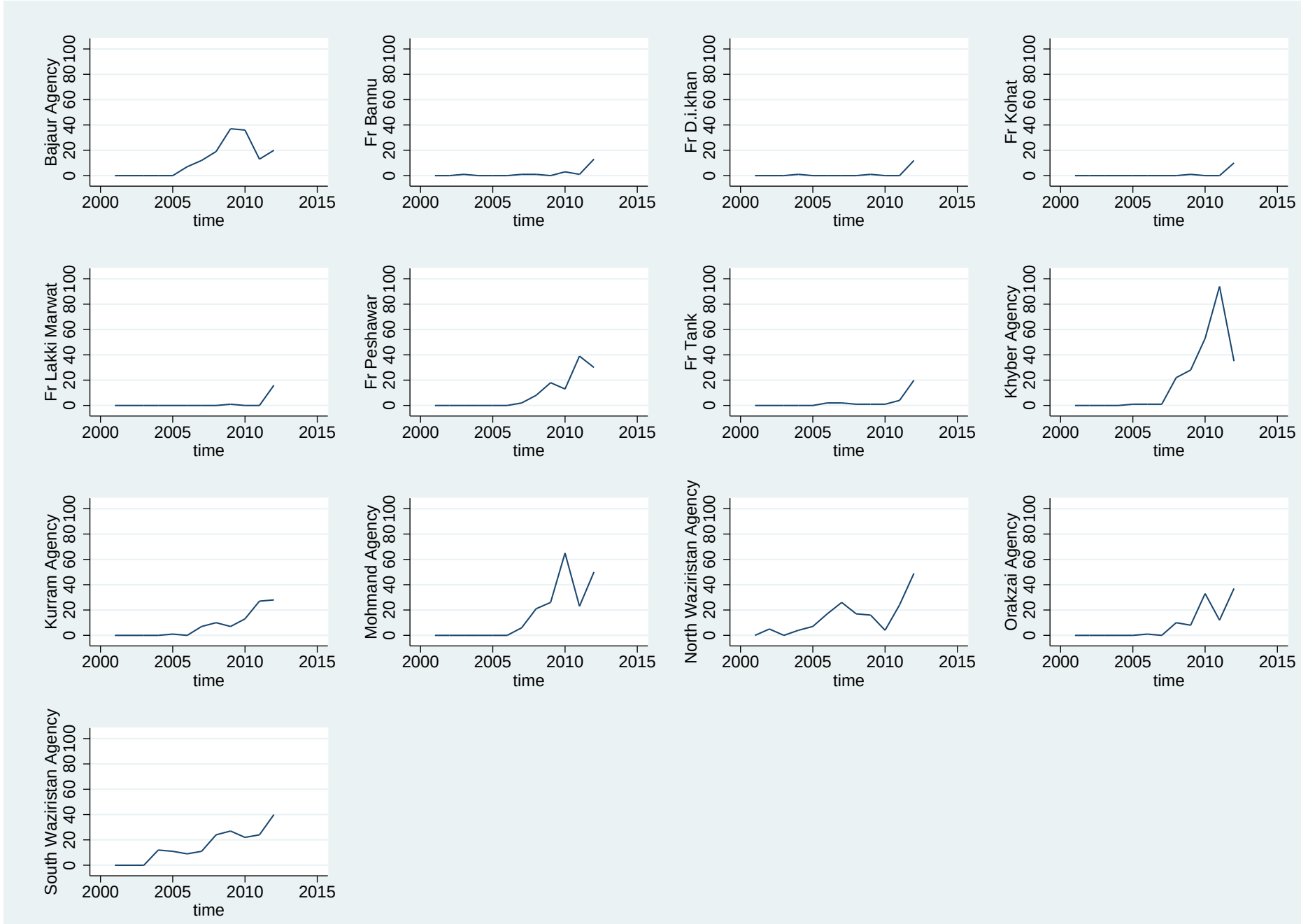


Figure 5.8: Time Series of Terrorist Attacks in Districts of Khyber Pakhtunkhwa (KPK) Province, 2001-2012

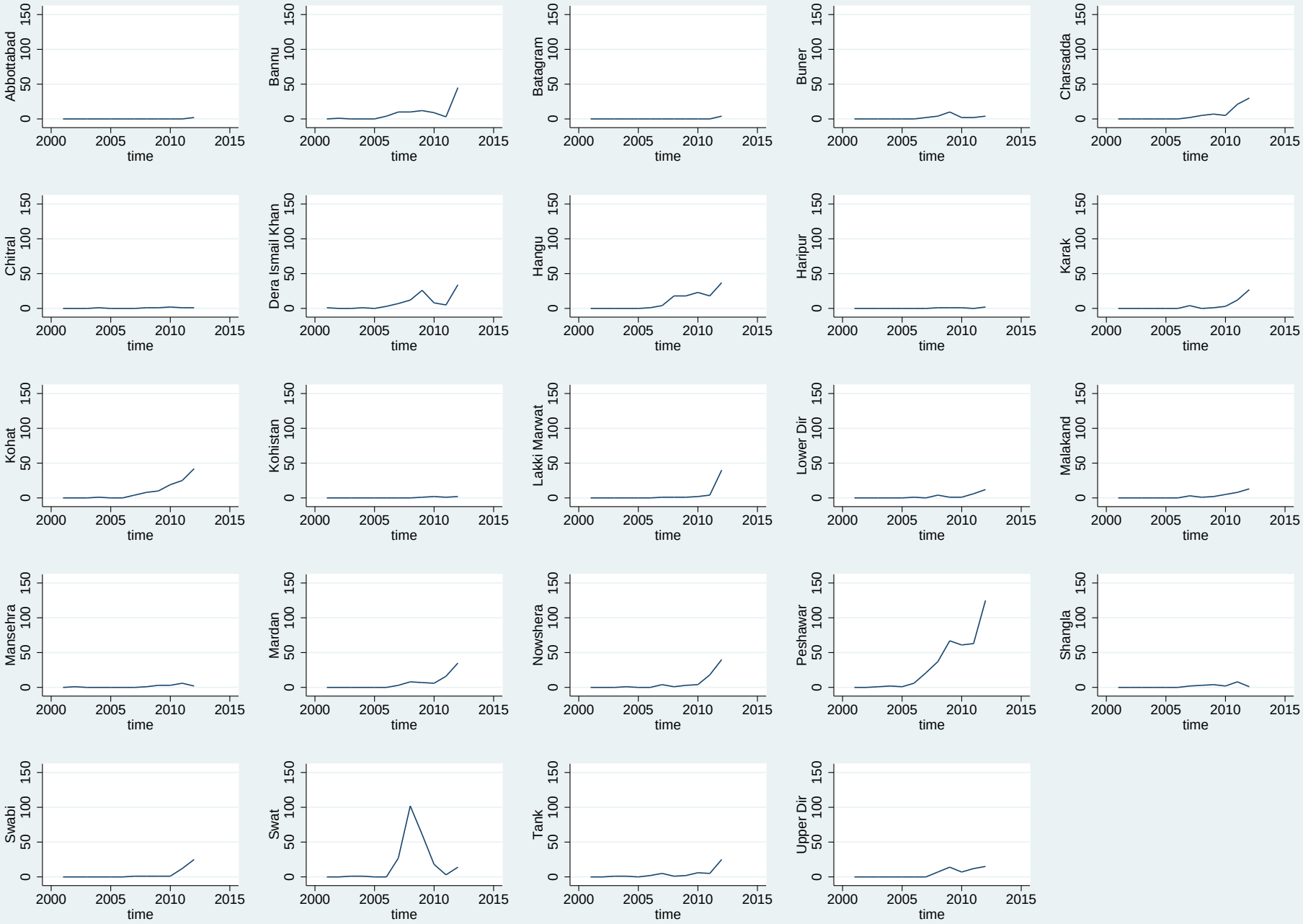


Figure 5.9: Time Series of Terrorist Attacks in Districts of Punjab Province, 2001-2012

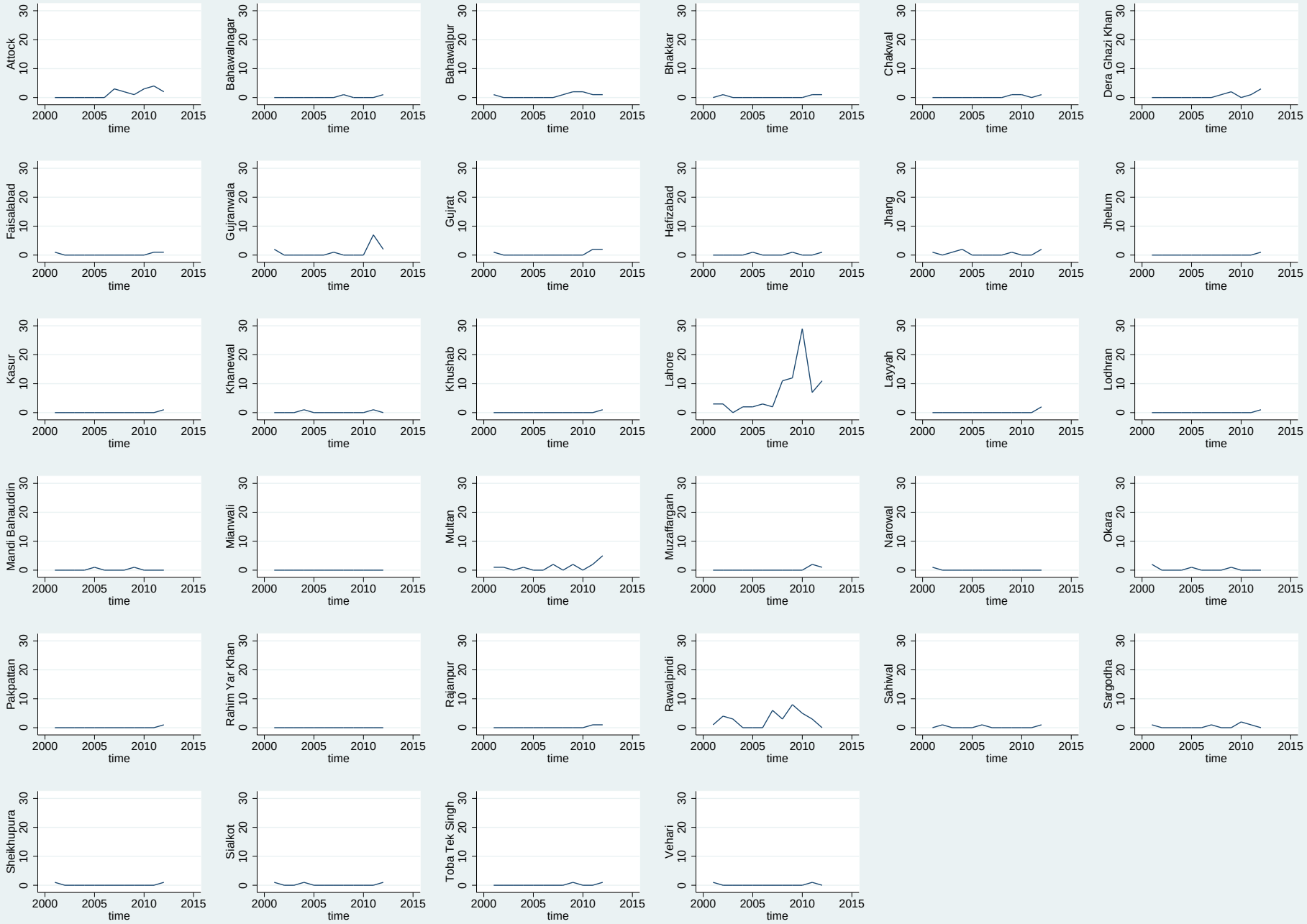


Figure 5.10: Time Series of Terrorist Attacks in Districts of Sindh Province, 2001-2012

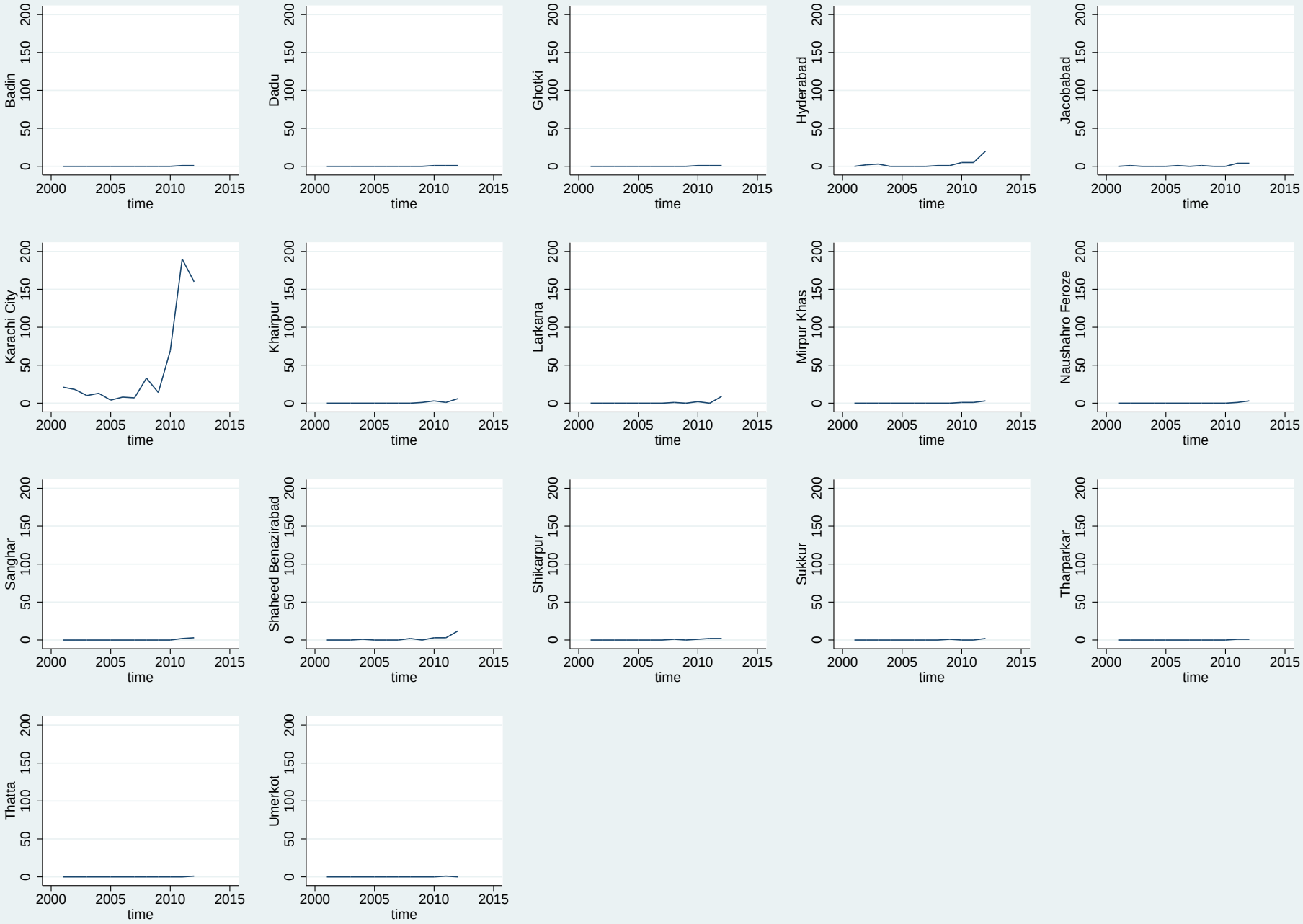
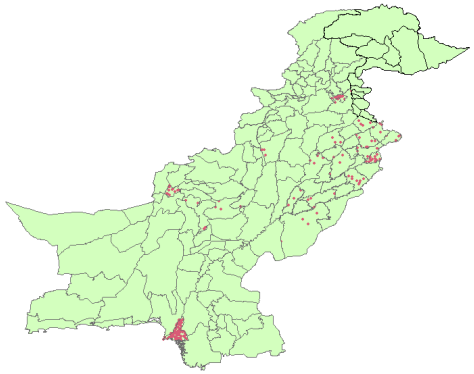
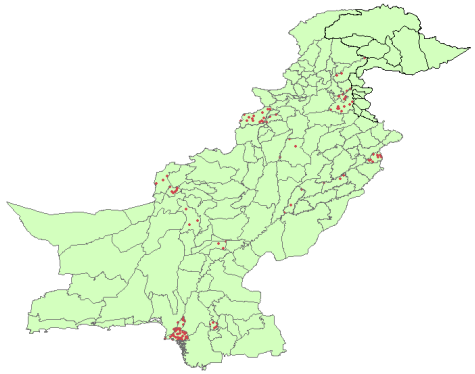


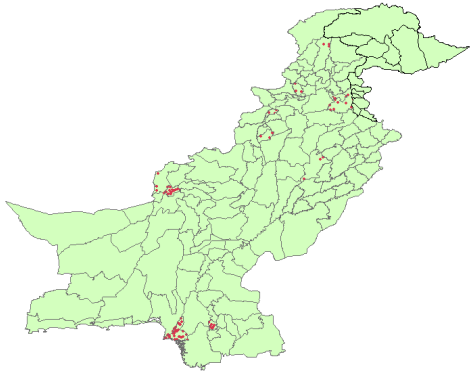
Figure 5.11: Year-Wise Spatial Distribution of Terrorist Incidents in 2001-2006



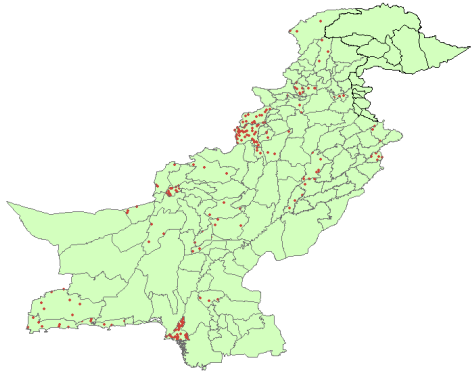
(a) Terrorist Incidents in 2001



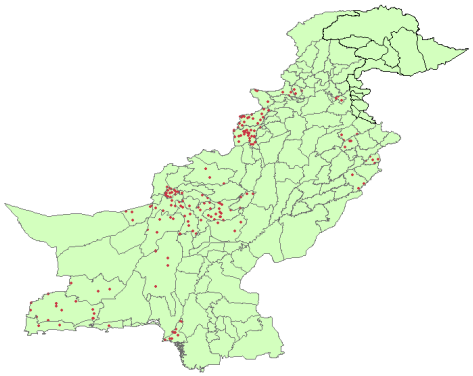
(b) Terrorist Incidents in 2002



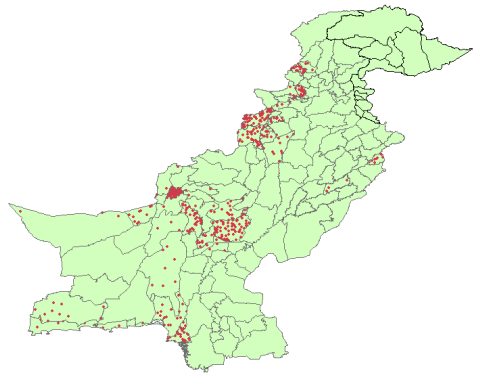
(c) Terrorist Incidents in 2003



(d) Terrorist Incidents in 2004

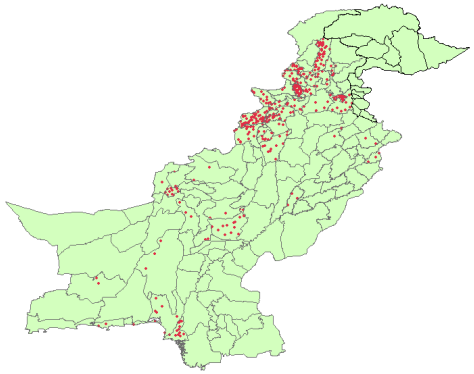


(e) Terrorist Incidents in 2005

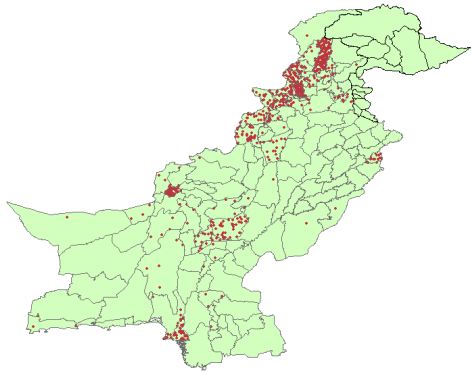


(f) Terrorist Incidents in 2006

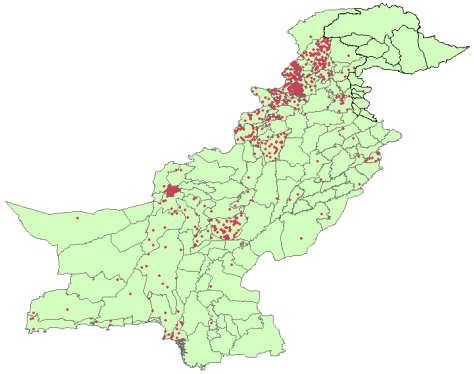
Figure 5.12: Year-Wise Spatial Distribution of Terrorist Incidents in 2007-2012



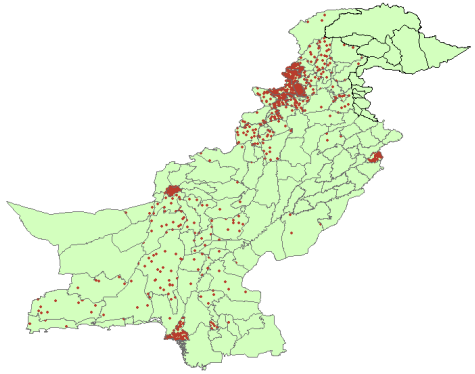
(a) Terrorist Incidents in 2007



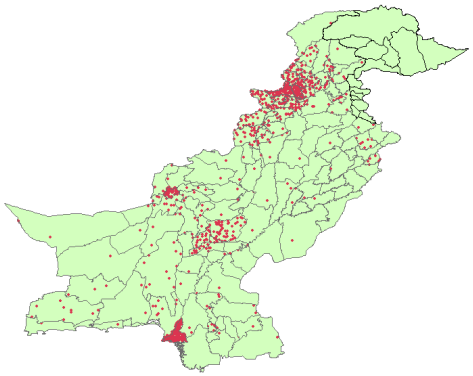
(b) Terrorist Incidents in 2008



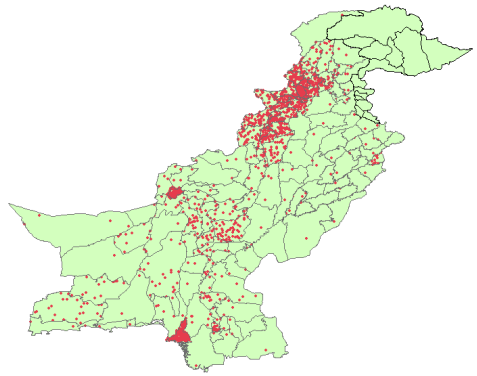
(c) Terrorist Incidents in 2009



(d) Terrorist Incidents in 2010



(e) Terrorist Incidents in 2011



(f) Terrorist Incidents in 2012

Chapter 6

Conclusion

This dissertation has presented and empirically tested the over-reaching questions, which are, what is the origin of violence and terrorism, how do violence and terrorism shape democratic preferences, and can these crimes be deterred through the use of military and police forces? In this context, four narrow questions answer and shed some light on the above main questions. These were considered given the pervasiveness of sectarian violence and terrorism in the last decade in Pakistan. Those questions were as follows:

- What is the origin of sectarian violence and terrorism in Pakistan?
- Does the persistent risk of terrorism decrease support for the democratic values?
- Does modern law enforcement institution (military) deter terrorism and violence in a specific area which is ungoverned and never exposed to modern-day politico-economic institutions?
- Does space/location/geography matter for a terrorist?

This chapter is comprised of two parts. The first part discusses the results of chapters 2-5 which empirically test the aforementioned narrow questions. The second part provides potential avenues for future research, and policy recommendations derived from the dissertation.

6.1 Discussion of the Results

The preceding chapters provided a law and economics perspective on crimes like sectarian conflict and terrorism in Pakistan. These perspectives are empirically discussed and analyzed in four separate chapters and original contributions. Apart from chapter 1, which explained the purpose, significance and structure of the study, the rest of the chapters 2-5 are original contributions that are all concerned with the extreme form of crime, terrorism.

Chapter 2 served two motives: First, it provided historical records of sectarian conflict and terrorism in Pakistan. Second, it explained the causes of sectarian violence and terrorism from the religious market perspective. The subjectivity of the religious beliefs makes it a challenging task for the economists to properly define and explain the mechanism of the religious market. Nevertheless, here, the Islamic religious market has been defined from the opportunity cost perspective, which faces by the religious consumer while taking decisions on the consumption of different products from the bundle of the Sharia Law. After defining the religious market, it has been shown that rent-seeking behavior on the part of the three players in the religious market, namely, religious sects, government and cold war allies of Pakistan, led to regular interventions in the religious market. The rent backed interventions generated negative externalities in the form of religious intolerance and confrontation in the religious space between and within sects and sub-sects. Over the years, these externalities are realized in the form of sectarian violence which slowly and gradually transformed to the extreme form of conflict, terrorism.

After studying historical and economic aspects of the prevailing debate on the terrorist activities in Pakistan, the analysis of the second research question in *chapter 3* contributed to the literature on endogenous preferences, that is, the impact of terrorism risk on an individual's support for democratic institutions. A longstanding research on democratic culture argued that different types of socio-economic shocks affect the support for core liberal values, both, positively and negatively. Therefore, preferences on six characteristics of the liberal democracy have been empirically tested in the presence of persistent terrorism risk and fear. The liberal democratic values included the role of parliament, the constitutional role of the army, freedom of speech and assembly, property rights and independent courts. The emphasis has been on the first two values due to the perfect

substitutability in the governance system of Pakistan. A comprehensive survey of 6,000 households across Pakistan has been conducted to study the support for institutions amid fear of terrorism. It demonstrated that terrorism risk decreases preferences for governance by the elected representatives, which is replaced by higher support for the military institution. The analysis in *chapter 3* raises concern over the deterrence role of the liberal democratic norms against terrorism and violent conflicts.

After analyzing the questions on the cause and consequence of terrorism and violence in *chapters 2 and 3*, the second half of the study is allocated to the enforcement of law against these crimes. Thus, a third question in *chapter 4* has been designed to examine the deterrence role of the modern law enforcement institution on violent conflicts in the previously ungoverned space. Political economists argue that territories with no access to modern-day institutions exist in many developing countries. They believe that difficult geography, rough terrain and local culture raise the cost of policing and the provision of institutions to a specific area in a country. Consequently, such territories lack the modern world economic and political institutions. Such an ungoverned space exists in the North-West of Pakistan, called, the Federally Administered Tribal Areas (FATA). The incident of 9/11 gave an exogenous shock to the military institution to establish its infrastructure in FATA, located on the boundary line with Afghanistan. The military intervention was completely exogenous to violent conflicts, including tribal and sectarian violence and terrorism in FATA. Consequently, it is observed that the intervention of law enforcement institutions significantly decreased these conflicts over time.

Bearing this in mind, the final research question in *chapter 5* examined the unintended consequences of the law enforcement interventions against crimes like terrorism. Applying the idea of environmental criminologists' of 'the displacement and diffusion effects of the crime control intervention on criminal activities' on the reaction of terrorists to anti-terrorism interventions, it has empirically tested that the interventions against terrorism activities in the treated districts generate a significant public cost on the neighborhood districts in the form of displacement of terrorist attacks. Therefore, welfare analysts should consider the negative externalities while evaluating the effectiveness of anti-terrorism interventions.

6.2 Policy Recommendations and Future Research

6.2.1 Policy Recommendations

In the empirical analysis, it is hard to put forward proven policy suggestions unless the relevant literature is mature and well-researched. Nevertheless, this study provides some proposals as we believe that the derived results are causal and can be generalized. These are:

- The foremost policy implication of this dissertation is derived from the role of government in the religious market. When government violates the neutrality principle in the religious market, it may produce long-term negative externalities in the form of sectarian violence and terrorism. Therefore, it recommends that government should avoid intervention in the religious space as much it can to promote plurality and diversity.

- Democracy is valued as the most successful political idea of the 20^{th} century (The Economist).[1] Similarly, it is believed that a democratic system plays a deterrence role against conflicts by providing an opportunity for expression to every individual in the society. It could be true for developed and mature democracy. When democracy is in a transitory phase as in Pakistan, different socio-economic factors play their roles in the formation of democratic preferences which in turn determine the future of democracy. Thus, the second policy suggestion is that if elected legislators want to gain political support of voters/individuals, they have to protect their lives and property through strengthening civilian law enforcement institutions like the police and judiciary.

- The third policy relevance of the study is about the deterrence role of the law enforcement institution (military) against violence and terrorism. In this context, the first recommendation is that ungoverned territories maybe costly to police. However, they should be included in the legal and political spheres of the country to avoid their long-term negative externalities. The second sub-recommendation is relevant to Max Weber's proposition on the state capacity of enforcement rights. Organized and disciplined law enforcement institutions (military) may

[1] http://www.economist.com/news/essays/21596796-democracy-was-most-successful-political-idea-20th-century-why-has-it-run-trouble-and-what-can-be-do

be one of the reasons that Pakistan is resilient against extremists and terrorists.

- The last suggestion is that terrorists react to costs impose by the intervention of the law enforcement institutions. For example, a terrorist may just "move around the corner" when the law enforcement agencies raise the cost of attack in a given district. Thus, an effective deterrence policy must not only deter terrorism in a local area but also on a wider scale.

6.2.2 Future Research

Since the incident of 9/11, research on the topics of terrorism and extremism is significantly increased. However, a major share of this research has focused on the causes and consequences of transnational terrorism. Thus, it can now be argued that the following avenues of terrorism research can be further explored, specifically, domestic terrorism:

- The area which is under-explored is the structure and mechanism of the religious market and its role in extremism and terrorism. Specifically, more research is needed to explore the origin and causes of the so called *Militant Islam* within religion through a market framework. Analysis of religion through a market perspective would help us in identifying the socio-economic and political reasons of *Militant Islam* from a new dimension and pure market context.

- Literature is developing to determine the potential determinants of democratic behavior and trust on liberal institutions. Nevertheless, the avenue is open to point-out the role of the potential risk to life and property in shaping trust on democratic institutions including parliament, local government, judiciary, police, etc. More emphasis is needed on the transitory democracies as they operate on the slippery slope of governance between parliament vs. military dictators.

- Previous literature has analyzed the association between transitory economic shocks and political transition. Nonetheless, one of the research question in the dissertation established the relationship between permanent but small economic shocks (terrorism) and democratic preferences. Therefore, it demands further research, both, on the theoretical and empirical

grounds to discover the long-lasting effects of small but persistent shocks on socio-economic and political attitudes.

- Another area of terrorism and counter-terrorism research which is under-utilized is the quality of the law enforcement institution and its deterrence effects. It does not appear that there is any study which has designed/determined the quality/capacity of the enforcement organization and its effect against terrorism and extremism. That is, to explore the correlation/causation between the quality of the enforcement institution and probability of failure of the state against rebels.

- Consideration of the spatial response of a terrorist to the negative sanctions imposed through the use of military force, is another potential area of research. In this context, the emphasis of future research should be on the small administrative units such as municipalities, in order to get a better idea and understanding of the spatial behavior of terrorists in their reaction to counter-terror strategies.

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