IMPACT OF US AID, TERRORISM AND POLITICAL STABILITY ON THE ECONOMIC GROWTH OF PAKISTAN

Thesis

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Dedication

I dedicate this thesis to the valiant and patriotic people of Pakistan whose strong will-power and dedication towards a stronger and prosperous Pakistan has weathered out many untoward situations.

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Abstract

The US aid is perceived as an important factor for having an impact on the economic growth of Pakistan. Owing indebted to the US for the aid, Pakistan sided with the US in the war against terrorism in 2001; a decision that brought a wave of terrorism into Pakistan. Besides US aid and terrorism, the political landscape of the country is also seen as a major factor in fostering the growth. Therefore the impact of US aid, terrorism and political stability on the economic growth of Pakistan in the long run is measured using time series data from 1966-2014. The cointegration technique ARDL is used to estimate the long run impact whereas Error Correction Model is used to ascertain the error correction term. This study is bold enough to present results that are contrary to common notions. The results show that all the three variables are insignificant in the estimation of growth in the long run in Pakistan, however US aid and political stability show a positive impact whereas terrorism shows a negative impact on the growth. In the light of this study, the policy makers can shift their alignment tendencies from aid driven priorities to region based priorities.

CHAPTER-I

1   Introduction

The world has become a global village where each country is in a race with other ones, or at least with a certain group of countries. This race is multidimensional and winning or losing is ambiguous. However certain indicators have been developed to gauge the extent of development that each country has made. Economic growth represents the extent of development in the country. The country that shows better economic performance and hence registers better economic growth is considered to be the winner in this multidimensional competition.

The economic growth is affected by a mix of multidimensional variables that all contribute to give it a shape. These variables include consumption, investment, government expenditure, net exports, inflation, regional factors (like climate, environment etc.), relations with neighbors and other countries in the region and many others.

Pakistan's economy has seen mixed performance in 69 years of her history. The growth has varied in different periods depending on the different policies being implemented at the national as well as international scenario. The All India Muslim League (AIML) played a pivotal role in the independence of Pakistan from the British rule and its successor in the nascent state of Pakistan was thereby named Pakistan Muslim League (PML). The PML had its roots deep in West Pakistan whereas the independence activists of the status of Muhammad Ali Jinnah and Liaquat Ali Khan held the top party positions. The majority of the PML was pro-capitalism whereas the Soviets strongly supported Pakistan's rival, the pro-socialism state of India in terms of military, technical and economic aid. Therefore the power corridors in Pakistan decided to align itself with the other super power, the United States (US) of America. The first prime minister of Pakistan, Liaquat Ali Khan visited the US in 1950 on the invitation from the latter as an official state visit. It was followed by a history of warm diplomatic ties between the two states. Hence Pakistan started to receive the economic assistance aid from the US. Although this aid was not there during the first three years until Liaquat Ali Khan's visit to the US. So Pakistan has been receiving economic assistance aid from the US since 1951 and military assistance started in 1955 after a

mutual defense treaty was signed in 1954. This US aid has been the major driver of the foreign aid as the US aid makes up the large share of it. Hence the US aid is seen as an important factor for having an impact on the economic growth of Pakistan.

The relations between Pakistan and US grew hot and cold over the time among the echoes of "Do more". However Pakistan has always been on US side, whether it is Pakistan's role in the downfall of the Soviet Republic or the war against terrorism in Afghanistan that started after the brutal terrorist 9/11 attacks on the US in 2001. Pakistan is the front line state in the war against terrorism. Initially the war on terror was thought to be the US war against the Taliban but due to certain geopolitical reasons and internal situation, the war has become Pakistan's own struggle for its ideological existence. The Taliban felt betrayed by Pakistan for aligning against them despite of the fact that Pakistan was the one who raised and trained the Taliban to fight against the Soviets. Resultantly the Taliban slipped into Pakistan through the porous Durand line (Pak-Afghan border). The war against terrorism had entered into the Pakistani soil. This war has taken a toll on the civil as well as military power.

A huge number of terrorist attacks have resulted in an exuberating amount of casualties in the country. Before 9/11, Pakistan was not among the top ten countries in the world that faced the highest number of terrorist attacks. After 9/11, Pakistan ranks 4th and if we exclude Iraq and Afghanistan, as these are the states where war was held, Pakistan ranks 2nd most terrorism-hit country (during 2001-2008; Nagdy and Roser, 2015). This has adversely affected the security situation which has destroyed the soft and hospitable image of Pakistan. The investment atmosphere has deteriorated tremendously which might be one of the many factors of slow economic growth in the country. Hence the post independence history of Pakistan can be easily divided into two main eras, pre-terrorism (before 2003) and post-terrorism (2003 onwards).

It is important to highlight here that the US has extended a handsome support in the form of "Coalition Support Fund" since 2003 so as to compensate for the losses that Pakistan has been bearing for alliance with the US in the war against terrorism. Therefore, it is imperative to assess whether US aid and terrorism have exerted some long lasting impact on the economic growth of Pakistan or not.

On the other hand, Pakistan's political landscape is very inconsistent. There had remained parliamentary as well as presidential form of the government in the country.

Military dictators have taken over the reins of the country four times in the short history. Democratic governments have never been stable until the first transition of a democratic elected government in 2008 into another democratic elected government in 2013 after successfully completing its tenure of five years. Due to such instability of the democratic governments, those periods are perceived to be better in terms of economic performance when the political scenario has been stable in the country, i.e. military dictatorships of Ayub Khan, Yahya Khan, Zia-ul-Haq and Pervez Musharraf. Hence the impact of political stability on the economic growth of Pakistan is also worth studying.

1.1   Motivation of the Study

Pakistan being a nascent state depended heavily on the foreign aid, especially the US aid. The US had its own interests in giving aids to Pakistan, the top one being to have a close watch over its rival, the Soviet Republic. The Pakistan economy depended on this aid and it is generally perceived to be essential for the economy to run smoothly. Pakistan was the first and to-date the only modern era state that was created in the name of Islam. The people in Pakistan are largely religious and follow the Islamic traditions in letter and spirit. However a general perception exists all around the Muslim world, that the US is an anti-Islam or anti-Muslim state. Therefore there always has been a strong opposition to the US aid in Pakistan.

The then US president George W. Bush while announcing a crackdown against the Taliban in Afghanistan declared it a "crusade" – a war between Islam and Christianity, in 2001. Therefore the majority of the people in Pakistan opposed this war and had their sympathies with the Taliban. The clear indication of this trend came as a result of the 2002 general elections where the Muttahida Majlis e Amal (MMA), a political coalition of several religious parties, came into power in the then North West Frontier Province (now Khyber Pakhtunkhwa). Hence the Taliban found easy inroads in Pakistan and formed strong base stations in certain parts of the country from where they started to carry out terrorist activities in Pakistan. Terrorism is an issue that has plagued Pakistan lately and its roots go deep into the radical and extremist sections of the society. The chief executive of the country, Pervez Musharraf, decided to take side with the US in this war against terrorism.

Another of his bold and disputed steps was the operation against the Lal Mosque and its inmates that ignited political unrest in the country that eventually led to Musharraf's downfall. Strong protests during Musharraf's pro-military rule and the state of emergency indicated the political awakening of the masses. That has led to an era where democratic governments are running and completing their tenures. To sum up, the above discussion was the main motivation behind this study which necessitates analyses of the role of US aid, terrorism and political stability for their impact on the economic growth of Pakistan.

1.2 Objectives

The study aims to extend literature in the following:

- To investigate the role of US aid in the economic growth of Pakistan.
- To assess the impact of post-2003 terrorism in Pakistan on its economic growth.
- To investigate the relationship between economic growth and political stability.

1.3 Significance and Contribution

This study is devoted to investigate the impact of US aid, terrorism and political stability on the economic growth of Pakistan in a single study. It would be a unique study as no one has yet looked into the three factors in the same study, as per my knowledge. It has tremendous scope keeping in view the external factors affecting the growth of Pakistan. This study also yields some policy suggestions on the basis of the results in lieu of US aid, terrorism and political stability so as to bring better economic growth.

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CHAPTER-II

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2   Literature Review

Literature guides us to a number of viewpoints on the topic under discussion in this study and this section presents a few below. The impact of foreign aid on the economic growth is insignificant albeit the fact that the aid affects the economy negatively (Khan and Ahmed, 2007). On the other hand the US aid has a positive impact on the economic growth but the cost of siding with the US is greater than the benefit (Mullick, 2004). The US aid has been high during the military regimes in Pakistan and hence it has also promoted dictatorship in Pakistan (Ali, 2009). The aid has increased after the start of the Afghan war. However the side effect of the war, terrorism, has negatively impacted the economic growth of Pakistan (Hyder et al, 2015). Political stability plays the role of keeping the society integrated (Memon et al, 2011). The GDP per capita growth has also been hindered badly during politically instable periods (Aisen and Veiga, 2013).

The role of the political regimes in the effectiveness of foreign aid is analyzed using time series data from 1972 to 2011. The democratic regimes are found to be harmful in the effectiveness of foreign aid. The study also suggested diminishing returns to scale of foreign aid (Luqman et al, 2015).

The impact of foreign aid in economic growth is unclear both theoretically as well as empirically. Despite receiving huge foreign aid since 1947, Pakistan has seen very little or no impact on the socio-economic development of its citizens. The analysis is made through ARDL co-integration technique for the period 1972-2006. The results show that there is a negative impact of foreign aid on the economic growth however the results are insignificant. Furthermore domestic investment, exports growth and the inflow of FDI are the significant variables in the economic growth of Pakistan for the given period. Hence foreign aid is not a blessing for Pakistan and has certain demerits like compromising the autonomous status of the nation (Khan and Ahmed, 2007).

The impact of different economic and socio-economic indicators on the economic growth of Pakistan has been found out after the 9/11 attacks on the U.S. for the period 1980-2003. The percentage change in real GDP was regressed over U.S economic aid, total investment, foreign reserves etc. using log-log ordinary least squares method. The results show that the U.S aid had a positive impact on the economic growth of

Pakistan. The cost of siding with the U.S in the war against terrorism is greater than the benefits therefore demanding for more input from the U.S in assisting Pakistan on the economic front. It is in the U.S interest to provide more assistance to Pakistan because a better economically stable Pakistan would be a better place for the U.S to invest in because being a labor intensive country, the cost of labor is less in Pakistan and the U.S can benefit from investing in Pakistan (Mullick, 2004).

The aid flows from the US for the period of 1947-2006 have been assessed in Ali (2009) to study its impact on the democracy in Pakistan and thereby the economic growth. The results show that the US aid has been high during the military regimes and too low during the democratic governments. It clearly shows that the US aid has been promoting dictatorship in Pakistan in order to pursue its own political and geo-strategic goals. The high levels of US aid during the second half of the 1950 decade and the 1960's were mainly to keep Pakistan at bay from the communist bloc. Zia's military regime also enjoyed high levels of US aid due to his support for the US in the cold war. Musharraf's support to the US in the war against terrorism amidst increased levels of US aids further strengthen the argument that the US prefers military dictatorships in Pakistan whenever it has to take a decisive step regarding the geo-political scenario and its interests in the region. Hence the US aid to Pakistan is always linked directly to its foreign policy goals rather than the socioeconomic development of Pakistan (Ali, 2009).

Pakistan has been facing the demons of terrorism. Pakistan has been badly affected by different religious and ethnic conflicts in addition to the repercussions of the Afghan war in its neighborhood. In light of these incidents, Pakistan's social as well as economic structure has been deeply affected. Therefore the impact of terrorism on the economic growth of Pakistan is measured using the Solow growth model with the help of data from the Global Terrorism Database (1981-2012). The technique used is co-integration analysis. The results show negative impact of terrorism on the economic growth of Pakistan. On the other hand, the foreign aid that Pakistan has received as a result of terrorism has a positive impact on the economic growth of Pakistan. This foreign aid includes aid, grants, debt rescheduling etc. (Hyder et al, 2015).

Terrorism is defined as the maximum possible degree of unlawful or illegal actions where the number of affected people is maximum and the economy is affected the

most. Yet this is not a compact definition of the term "terrorism". The US army invaded Afghanistan in 2001 after the brutal plane attacks on the World Trade Center in New York and the Pentagon in Washington. Pakistan became an important ally and strategic partner to the US in this war against terrorism. As a result, Pakistan has faced the wrath of the terrorists due to its close proximity to the center of disturbance. So when the costs and the benefits are compared, it is clearly evident that the costs that Pakistan is facing are much higher than the benefits that she is reaping due to its allegiance to the war against terrorism. In other words, Pakistan has lost at this front (Farooq and Khan, 2014).

The analysis of the relations between Pakistan and the US is very important in studying the impact of war against terrorism and the US assistance to Pakistan on the economic growth of Pakistan. There has been an air of mistrust between the two nations. Thirty one percent of the Pakistanis live below the poverty line and hence this highlights the difference in incomes in the two regions. The social development has been quite low on the agenda of all the governments in Pakistan. Hence the aid that comes to Pakistan must be delivered to the affected people in order for the economy to recover (Hashmi, 2007).

The changes that have been occurring on the global arena are not expected to slow down in the 21st century. The downfall of the Soviet Union followed up by the 9/11 attacks on the U.S within a space of less than two decades have altered the geopolitical scenario and caused new instability dilemmas specially for South Asia. The 9/11 attacks caused a major shift in the U.S policy towards South Asia, particularly Pakistan thereby generating more challenges for Pakistan's foreign policy and hence her involvement in the war against terrorism. Pakistan could not afford to distance itself from the situation owing to its own security situation. Hence Pakistan supported the coalition forces in Afghanistan to avoid any such U.S operation in Pakistan. This new policy paved way for an era of terrorist attacks throughout the country. Therefore the foreign policy shifted towards neutralizing such terrorist threats and hence the issue of terrorism is the new defining force of the U.S-Pakistan relations (Jabeen et al, 2010).

The national interests of any country are the primary concerns in diplomacy. The national and international scenarios keep on changing the means to achieve these national interests. The maturity, strength and the quality of the leaders as well as the

general public also defines the direction of realization of the national interests. 9/11 incident took the world by storm and Pakistan's internal and external policies were deeply affected by the incident. Pakistan gave in to the demands of the U.S then without any consensus in the country. Tactically, Pakistan took a U-turn towards its earlier Afghan policy in exchange for four things: Pakistan's national security, revival of the economy, security of the nuclear assets and the Kashmir cause. On the economic front, the huge influx of migrants from the war torn Afghanistan would have done no good. The victory of religious parties in the 2002 general elections in the province of Khyber Pakhtunkhwa was a clear indication of the people's disliking of the foreign policy tilted towards the U.S. Many jihadists and Taliban fighters in Afghanistan were from the Pashtoon tribes of Pakistan and hence their deaths were seen as U.S's non-interest in the welfare of the people (Shah and Riaz, 2013).

The impact of political instability on per capita GDP growth has been investigated for a period of 1950 to 1982 in panel data for 113 countries. Political instability has been defined here as the tendency of a government to collapse. The results show that the per capita GDP growth has been significantly low in countries during those time periods when the tendency of the government to collapse is high. The model contains many other determinants of economic growth along with some regional factors that may also have any impact on the economic growth and political stability. Similarly the change of the government is followed by many other changes hence fulfilling the definition of political instability that resultantly affects the per capita GDP growth negatively (Alesina et al, 1996).

The impact of political instability on the economic growth has been determined empirically. The panel data for 169 countries and time period 1960-2004 (5 year periods) has been used to apply the system-GMM estimator. The results show that the growth rate of GDP per capita is low when the degree of political instability is higher. The channel through which this impact takes place has been highlighted as the negative effect of political instability on the productivity growth rates and to some extent on the physical as well as human capital accumulation. Hence political instability has negative impact on the total factor productivity growth and also discourages the accumulation of the physical and human capital. Therefore the governments in the political instable countries must find the root causes of instability

in their country and mitigate their impact on the economic policies (Aisen and Veiga, 2013).

The impact of political instability, governance and bureaucratic corruption on the economic growth in Pakistan has been analyzed. The analysis is based on Markov-Regime switching model and it shows that high corruption coupled with weak governance results in lower economic growth. The increased levels of corruption cause the government to depend on seigniorage to overcome the budget deficit caused by the corruption. Corruption and poor governance team up with political instability causing the low levels of economic growth (Haider et al, 2011).

Political stability plays the role of keeping the society integrated. It is an important factor in the economic development of Pakistan. In a politically instable country, the government becomes a tug-of-war between different interest groups. The political instability splits up the society on various bases and a general air of mistrust prevails in the country. The instability also poses direct threat to the national security, war against terrorism and world economy. The economy of Pakistan is already aid driven and in such a scenario, the poor law and order situation discourages the foreign investors to invest in Pakistan. The inefficient use of the aid after the 2005 earthquake and the 2010 floods has caused a huge trust gap of the donors. The foreign donors have shown the tendency to rely on the non-governmental organizations rather than the government to do the job of social and welfare uplift in Pakistan (Memon et al, 2011).

Therefore in view of the stated literature, the US aid had an ambiguous impact on the economic growth of Pakistan according to different studies. Negative but insignificant (Khan and Ahmed, 2007) and positive impact (Mullick, 2004) ask for another study that looks into the impact of the US aid on the economic growth of Pakistan. Terrorism has shown a negative impact on the economic growth of Pakistan (Hyder et al, 2015) whereas qualitative analyses suggest the same (Farooq and Khan, 2014). Therefore more statistical evidence is required to support the statement. Political instability has shown negative impact on the economic growth (Alesina et al, 1996) and hence it has to be studied for Pakistan based on a different definition of political stability.

Table 1 Literature Review

Study	Independent Variable	Method	Result
Luqman et al (2015)	Foreign aid		Negative in democratic regimes
Khan and Ahmed (2007)	Foreign aid	ARDL, cointegration	Negative, insignificant
Mullick (2004)	US aid	OLS	Positive
Ali (2009)	US aid	Exploratory analysis	Promotes dictatorship
Hyder et al (2015)	Terrorism	Cointegration	Negative
Farooq and Khan (2014)	Terrorism	Qualitative	Negative
Hashmi (2007)	Terrorism	Qualitative	Negative
Jabeen et al (2010)	Terrorism	Qualitative	Negative
Shah and Riaz (2013)	Terrorism	Qualitative	Negative
Alesina et al (1996)	Political instability	Simultaneous equation methodology	Negative
Aisen and Veiga (2013)	Political instability	GMM	Negative
Haider et al (2011)	Political instability	Markov regime switching model	Negative
Memon et al (2011)	Political instability	Qualitative	Negative

CHAPTER-III

3 Methodology

This section contains the discussion regarding the basic economic model that relates US aid, terrorism and political stability to economic growth.

3.1 Empirical Model Explaining Link of US Aid, Terrorism and Political Stability with Economic Growth

In economics, a theoretical link is first established between the variables. This link is then examined and tested with the help of the empirical data analysis. Therefore, the theoretical models developed by Khan and Ahmed (2007), Hyder et al (2015) and Memon et al (2011) were used in this study, which provided theoretical link between US aid, terrorism and political stability with economic growth. Following the stated models above, the desired regression equations can be written as:

Regression Equation	Equation Number	Explanation
$GDP\ growth_t = \alpha_0 + \alpha_1\ Control_t + \varepsilon_t$	Eq.(1)	Base Model
$GDP\ growth_t = \alpha_2 + \alpha_3\ Control_t + \alpha_4\ USAid_t + \varepsilon_t$	Eq.(2)	Model analyzing the impact of US Aid
$GDP\ growth_t = \alpha_5 + \alpha_6\ Control_t + \alpha_7\ Ter_t + \varepsilon_t$	Eq.(3)	Model analyzing the impact of Terrorism
$GDP\ growth_t = \alpha_8 + \alpha_9\ Control_t + \alpha_{10}\ PS_t + \varepsilon_t$	Eq.(4)	Equation analyzing the impact of Political Stability

where *GDP growth$_t$* indicates gross domestic product growth rate, *USAid$_t$* presents US aid, *Ter$_t$* presents terrorism (dummy) and *PS$_t$* presents political stability (dummy) measures for Pakistan. Here '*t*' refers to time. *Control$_t$* variables like Foreign Direct Investment, Government Fixed Capital Formation, Government Expenditure, Trade

Openness and Inflation were considered during the estimation to get reliable results. ε_t represents the error term.

3.2 Hypothesis Testing

This study will intend to test the following hypotheses.

H_0: $\alpha_4 = 0$ US aid does not influence economic growth in Pakistan

H_0: $\alpha_7 = 0$ Terrorism does not influence economic growth in Pakistan

H_0: $\alpha_{10} = 0$ Political stability does not influence economic growth in Pakistan

3.3 Definition and Construction of Variables

Dummy variable is used for political stability. Political stability here is defined as the top man (chief executive of the country) remains the same during the year or no political agitation or movement etc. takes place in the country for effectively long duration. The major reasons for the selection of the said time period included; long dictatorship regimes perceived politically stable are in this range, and troublesome 80's, 90's and some part of 2000's are also covered in it. It also covers decade of terrorism (war against terrorism and its effects on Pakistan). The reason for excluding the time before 1966 is data availability problem as most of the data before the 1965 India-Pakistan war is not available easily. Moreover 1947 and the early years were the nascent years of Pakistan and including that instable time in the analysis would result in highly skewed results. The variables are as follows:

Table 2 Variables

Variables	Name	Definition	Data Source
GDP Growth	*DGDP*	GDP growth rate (annual %)	WDI, World Bank
Foreign Direct Investment	*FDI*	Direct investment equity flows in Pakistan as ratio of GDP	WDI, World Bank
Government Fixed Capital Formation	*GFCF*	Government fixed capital formation as ratio of the GDP	WDI, World Bank
Government Expenditure	*GE*	All government current expenditures for purchases of goods and services as ratio of GDP	WDI, World Bank
Trade Openness	*Open*	Imports plus Exports as a ratio to GDP	WDI, World Bank
Inflation	*Inf*	Growth rate of GDP deflator	WDI, World Bank
US Aid	*USAid*	US aid to Pakistan under different heads as a ratio of GDP	The Guardian
Terrorism	*Ter*	Aftermath of US war against terrorism in Afghanistan, a dummy taking value **1** after 2003 till 2014, **0** otherwise	Dummy
Political Stability	*PS*	No change of top man during the year and no political agitation (dummy)	Dummy

3.4 Data and Data Sources

As obvious from the previous discussion, this study aims to investigate the impact of US aid, terrorism and political stability on the economic growth in Pakistan. In order to achieve this objective, this study utilized time series data consisting of 49 data points covering 1966-2014. To meet the objectives of this study, secondary data was used from different reliable sources like the Economic Survey of Pakistan, World Bank Data (WDI), Centre for Global Development (CGD), Institute of Policy Studies (IPS) Islamabad, South Asia Terrorism Portal (SATP) and the Guardian (Elahi 2011).

3.5 Estimation Technique

The nature of the data and the relationship to be investigated tell which estimation technique is appropriate. In Pakistan, the common perception that floats around in the masses is that Pakistan cannot survive without the foreign aid, particularly the US aid. The political drives before the 2013 general elections included a major political point scoring issue of rejecting the aid in the future. However all the political parties that claimed to deny the aid in the future are in power in different provinces and all of

those provincial governments are receiving aid money as they think that aid has long term implications on our economy. Similarly terrorism has hit our country very hard and its long term impacts are to be gauged so as to plan the things better for the future. The political stability is also perceived to be an important pillar of the economic stability and the periods of turmoil are often seen as periods of less economic growth in the country. So this study is aimed to measure the effect of US aid, terrorism and political stability on the economic growth of Pakistan.

3.5.1 Augmented Dickey Fuller Test

Time series data generally does have unit root issues due to variations of mean, variance and/or auto-covariance depending on time. So without knowing the stationarity issues, spurious results can be found by the use of such data. In such a case, the estimated coefficient of regression will not present the actual behavior of the variable alone as it may carry effects of the time trend. Therefore, before initializing the analysis of time series data, the investigation of the true order of integration for data series is of high importance. Hence, the Augmented Dickey–Fuller (ADF) test was applied to test the order of integration for the given series.

Table 3 Augmented Dicky Fuller Test

Variable	τ-ADF with drift and trend	τ-ADF with drift	τ-ADF without drift and trend	Result	Order of Integration
LGDP	0.002	0.302**	---	Non-stationary	I(1)
FDI	0.021	0.075	0.668***	Non-stationary	I(1)
GFCF	-0.003	3.763***	---	Non-stationary	I(1)
GE	-0.005	1.615*	---	Non-stationary	I(1)
Open	0.022	7.082**	---	Non-stationary	I(1)
LInf	0.005	1.171***	---	Stationary	I(0)
USAid	-0.0004	0.006#	---	Non-stationary	I(1)
Note: L here above represents natural log of the given variable					

3.5.2 Auto Regressive Distributed Lag Approach and ECM

The auto regressive distributed lag (*ARDL*) approach of cointegration technique and Error Correction Model (*ECM*) seem to be the appropriate econometric techniques for estimating the relationship mentioned above. As the dataset contains 49 annual observations of the variables that are integrated of order 0 or 1, ARDL technique (Pesaran and Shin, 1999) is used. The lag of the dependent variable at level is the error correction term for the long term relationship. The Kiviet and Phillips (1992) unrestricted dynamic model can be presented as:

$$\Delta y_t = \boldsymbol{\alpha} \Delta \boldsymbol{x_t} + \beta\, y_{t-1} + \boldsymbol{\theta}\, \boldsymbol{x_{t-1}} + \epsilon_t \qquad\qquad \text{Eq. (5)}$$

where y_t is the dependent variable and x_t is the vector of independent variables. Here $\boldsymbol{\alpha}$ captures the short run impact of changes in independent variables on the dependent variable. An important factor is that the long run effects are not readily available in *ECM* models. The long run impact for the independent variables is estimated by $\boldsymbol{\theta}$. The coefficient of lagged dependent variable (β) indicated the error correction term and shows measure of adjustment in each period after a shock that causes disequilibrium. Thus, equilibrium is achieved at $\beta-1$ rate in the long run, where $\beta\in(0,-1)$. If β is zero, it means that there is no long run relationship whereas $0 < β < -1$ indicates that the model is stable. Finally the General-to-specific (*Gets*) approach by Krolzig and Hendry (2001); Hendry and Krolzig (2003, 2005) is adopted for the selection of the model to empirically estimate the stated relationship. The analysis starts with a reasonable general model in *Gets* approach. Then the variables that are not statistically significant are removed and diagnostics tests are performed at the removal of each variable. This iterative process continues until only significant variables are left. So *Gets* technique will eliminate the insignificant variables and lags. Various tests were applied to get reliable results. These included error autocorrelation, hetero-skedasticity, non-normality and functional form misspecification tests.

CHAPTER-IV

4   Empirical Findings

This study has focused on providing the actual empirical estimates rather than manipulating the data in order to super impose the reality with desired outcome. The chronological progress of the estimation process is presented in this section. To start with, a general economic model, i.e. our base model, was developed to find out the determinants of economic growth in Pakistan. *ARDL* technique was used to investigate the long run cointegrating relationship and *ECM* was used to find the error correction term in this base model. Then *Gets* approach generated a cautious specific model and cointegration was established to exist among the variables in the general model. So the effects of US aid, terrorism and political stability were analyzed using the *ARDL* and *ECM* model. The section then concludes with the interpretation of the results and discussion along with exploratory analysis of the data and justifications from the history.

4.1   Modeling Economic Output in Pakistan

First step in analyzing the situation in Pakistan is to identify the important control variables and their adequate lags that have an impact on the economic growth in the country. Therefore, as discussed earlier, the *ARDL* (Pesaran and Shin, 1999) and *ECM* modeling approach (Kiviet and Phillips, 1992) were used.

The variables were expressed in level to explain the long run economic growth. An adequate initial general unrestricted model (GUM) defines the soundness of the final specific model, as it is assumed that this GUM correctly approximates the data generation process (Hendry and Krolzig, 2004). Hence an economic model was generated while keeping this in mind that the risk of missing out any important variable is minimized. Five explanatory variables were included in GUM i.e. Foreign Direct Investment as ratio of GDP, Government Fixed Capital Formation as ratio of GDP, Government Expenditure as ratio of GDP, Trade Openness and Inflation, to explain the dependent variable GDP growth. The ARDL model can be written as Eq. 6:

$\text{DLGDP}_t = \alpha_0 + \delta_t + \sum \beta_e \text{DLGDP}_{t\text{-i}} + \sum \beta_f \text{DFDI}_{t\text{-i}} + \sum \beta_h \text{DGFCF}_{t\text{-i}} +$ $\sum \beta_i \text{DGE}_{t\text{-i}} + \sum \beta_j \text{DOpen}_{t\text{-i}} + \sum \beta_k \text{DInf}_{t\text{-i}} + \gamma_e \text{LGDP}_{t\text{-1}} + \gamma_f \text{FDI}_{t\text{-1}} +$ $\gamma_h \text{GFCF}_{t\text{-1}} + \gamma_i \text{GE}_{t\text{-1}} + \gamma_j \text{Open}_{t\text{-1}} + \gamma_k \text{Inf}_{t\text{-1}} + \varepsilon_t$	Eq. 6

To have a relatively powerful cointegration test, the instantaneous effects of the independent variables were also included (Hassler and Wolters, 2006). Trend (t) was used to capture the effects of time trend in the equation (if any). The GUM was framed using the contemporaneous effects and one lag (i) for annual data.

After the specification, *PcGive* was used to eliminate the redundant and insignificant regressors by applying the automated general to specific (*Gets*) model selection procedure. This procedure avoids any efficiency loss (Hendry and Krolzig, 2005; 2001; Krolzig and Hendry, 2001). Government expenditure was dropped from the long run static model due to its statistical insignificance. Similarly the lagged FDI and the contemporaneous inflation were also dropped from the specific model on being insignificant. So the static long run model contains FDI, GFCF, trade openness and inflation along with constant and trend.

The Kiviet and Phillips (1992) test for cointegration (embedded in the *PcGive* unit root test) was applied to check the cointegrating relationship amongst the specific variables, which gave the empirical value -5.94 (statistically significant at 1 percent). Therefore the null hypothesis of "No Cointegration" was rejected. So GDP growth is cointegrated with the specific explanatory variables. According to the results of the specific base model, FDI, GFCF and trade openness have positive impact whereas inflation has negative impact in the long run, which are all according to the economic theories. Moreover the diagnostic tests for error autocorrelation (AR), hetero-skedasticity (ARCH and hetero), non-normality (Normality) and functional form misspecification (RESET) were all satisfied.

Table 4 ARDL and ECM representation of General Economic Model (Dependent Variable - DLGDP)

Variables		General Model (with 1 lag)	Specific Base Model	Solved Static LR Equation for Base Model	
Constant	Constant	7.27***	6.42***	Constant	5.09***
GDP	*DLGDP_1*	-0.28**	-0.26**	DFDI	0.013***
FDI	*DFDI*	0.01*	0.02***	DGFCF	0.003
	DFDI_1	0.002	---	DLINF	0.014***
Capital Formation	*DGFCF*	0.008**	0.009***	LGDP	-0.22***
	DGFCF_1	-0.005*	-0.006***	GFCF	0.006***
Government Expenditure	*DGE*	0.001	---	OPEN	0.003***
	DGE_1	0.0008	---	LINF	-0.025***
Trade Openness	*DOPEN*	0.001	---	Trend	0.01***
	DOPEN_1	-0.002	---	---	---
Inflation	*DLINF*	-0.001	---	---	---
	DLINF_1	0.02***	0.02***	---	---
GDP	*LGDP_1*	-0.32***	-0.28***	---	---
FDI	*FDI_1*	-0.002	---	---	---
Capital Formation	*GFCF_1*	0.007***	0.008***	---	---
Government Expenditure	*GE_1*	-0.00009	---	---	---
Trade Openness	*OPEN_1*	0.005***	0.004***	---	---
Inflation	*LINF_1*	-0.04***	-0.03***	---	---
Trend	Trend	0.02***	0.013***	---	---
Number of observations		47	47	---	---
Number of parameters		19	11	---	---
PcGive Unit root test##			-5.94***	---	---
AR 1-2 test		2.2257 [0.1282]	2.1413 [0.1331]	---	---
ARCH 1-1 test		0.68041 [0.4138]	0.19234 [0.6631]	---	---
Normality test		0.64793 [0.7233]	0.56223 [0.7549]	---	---
Hetero test		1.1523 [0.4297]	1.4726 [0.1753]	---	---
RESET test			1.2055 [0.3120]	---	---

Significant at 1%=***, 5%=**, 10%=* ,

Note 1: ## *PcGive* Unit root test represents the Kiviet and Phillips (1992) test for cointegration.

Note 2: GDP and Trade Openness were expressed in logs, while all other variables are expressed as ratio of GDP.

4.2 ARDL and ECM for US Aid, Terrorism and Political Stability Variables

The specific model explains the long run effects of independent variables on GDP growth. So this long run relationship is expected not to be disturbed by the inclusion of the variables for US aid, terrorism and political stability. The variables for US aid, terrorism and political stability were added one at a time, to avoid multicollinearity issue, to the base model in order to find the effects of these variables in long run. *Gets* approach was applied again and a restricted model was estimated in which the specific base model and the variable of interest were kept fixed.

Table 5 ARDL and ECM Results for effect on economic growth (Dependent Variable DLGDP)

Variables		Model 1 (USAid)	Model 2 (Ter)	Model 3 (PS)
Constant	Constant	4.83***	5.51***	5.20***
FDI	*DFDI*	0.013***	0.013***	0.014***
Capital Formation	*DGFCF*	0.002	0.003	0.002
Inflation	*DLINF*	0.013***	0.015***	0.014***
GDP	*LGDP_1*	-0.21***	-0.24***	-0.23***
Capital Formation	*GFCF_1*	0.006***	0.007***	0.006***
Trade Openness	*OPEN_1*	0.003***	0.003***	0.003***
Inflation	*LINF_1*	-0.024***	-0.026***	-0.025***
US Aid	*LUSAid_1*	0.0008	---	---
Terrorism	*Ter*	---	-0.0044	---
Political Stability	*PS*	---	---	0.0022
Trend	Trend	0.01***	0.01***	0.01***
Number of observations		47	47	47
Number of parameters		12	12	12
PcGive Unit root test##		-4.62**	-4.24*	-5.22**
Long run parameter		0.0038	-0.0183	0.0096
AR 1-2 test		2.8288 [0.0735]	2.1962 [0.1272]	2.5166 [0.0961]
ARCH 1-1 test		0.18831 [0.6664]	0.17647 [0.6764]	0.22352 [0.6387]
Normality test		0.59530 [0.7426]	0.56630 [0.7534]	0.43803 [0.8033]
hetero test		1.5843 [0.1367]	1.1183 [0.3910]	1.7119 [0.0994]
RESET test		1.5790 [0.2214]	0.88556 [0.4221]	0.87628 [0.4258]

Significant at 1%=***, 5%=**, 10%=* ,

Note 1: ## *PcGive* Unit root test represents the Kiviet and Phillips (1992) test for cointegration.

Note 2: GDP and Trade Openness were expressed in logs, while all other variables are expressed as ratio of GDP.

Note 3: Long run parameter = $\boldsymbol{\theta}/\beta$ (from Eq. 5)

4.3 Results

The ECM term, i.e. lagged level dependent variable (LGDP_1), has values between 0.21 and 0.24 across the three models. According to the error correction term, the relationship will converge to its long run steady state for alternative models at the given rate of 0.21 to 0.24 with each period after any shock as presented in Table 5. Therefore long run cointegrating relationship is confirmed by the statistical analysis.

Foreign Direct Investment as ratio of GDP, Gross Fixed Capital Formation as ratio of GDP, trade openness and inflation, all have almost consistent values across the three models. Therefore the inclusion of each of the three variables of interest, i.e. US aid, terrorism and political stability one at a time has not affected the overall performance of the model. Therefore the results are a true reflection of the economic model for Pakistan. According to the results, the GDP grows by 2.9 percent (θ/β) when the GFCF increases by 1 percent of the GDP. Similarly GDP decreases by 11.4 percent when inflation increases by 100 percent and these results are almost consistent among the three models.

Model 1 analyses the relationship between US aid and GDP growth. The statistical results show that H_o is accepted and the US aid is insignificant in the GDP growth of Pakistan. However even if one wants to look at the coefficient, it has a very small nevertheless positive impact on the growth of the output of Pakistani economy. According to the results, if the US aid to Pakistan increases by 1 percent of GDP, the GDP would grow by an amount of 0.38 percent. All the statistical tests are satisfied depicting the correction of the results.

Model 2 analyses the relationship between terrorism and GDP growth. The statistical results show that H_o is accepted and the terrorism is insignificant in the determination of the GDP growth of Pakistan. However, the dummy (of *Ter*) has a very small and negative impact on the growth of the GDP of Pakistan. All the statistical tests are satisfied and the rest of the model remains stable depicting that the results are correct.

Model 3 analyses the relationship between political stability and GDP growth. The statistical results show that H_o is accepted again and the dummy of political stability has remained insignificant in the estimation of the GDP growth of Pakistan. However it has a small but positive impact on the GDP growth of Pakistan. All the statistical tests are satisfied again highlighting the correction of the results.

4.4 Justification and Discussion

4.4.1 Model 1 – US Aid

The result of model 1 seems to be absurd but it makes sense when the line plots of GDP growth and US aid as ratio of GDP are observed. The line plot clearly indicates that the US aid contributed 13 to 19 percent of the GDP of Pakistan in the years 1966 to 1968. However this share of the US aid in the GDP of Pakistan has dropped significantly over the years, as much as it has been less than 3% of the GDP during the 11 years, 2004-2014 when Pakistan has been bearing the brunt of the war against terrorism (except 2010 when it was 3.1% of GDP). It almost dried down in the politically unstable decade of the 90's. The share of the US aid in the GDP of Pakistan from 1990 to 2001 was less than 1%. The GDP of the country grew even in that period. Similarly the share of the US aid in the GDP of Pakistan decreased in the years 2003 and 2004, yet the GDP grew at higher rates showing the insignificance of the US aid as contrary to the common perception. Hence the inconsistency in US aid can be claimed as the major culprit for insignificant long run impact.
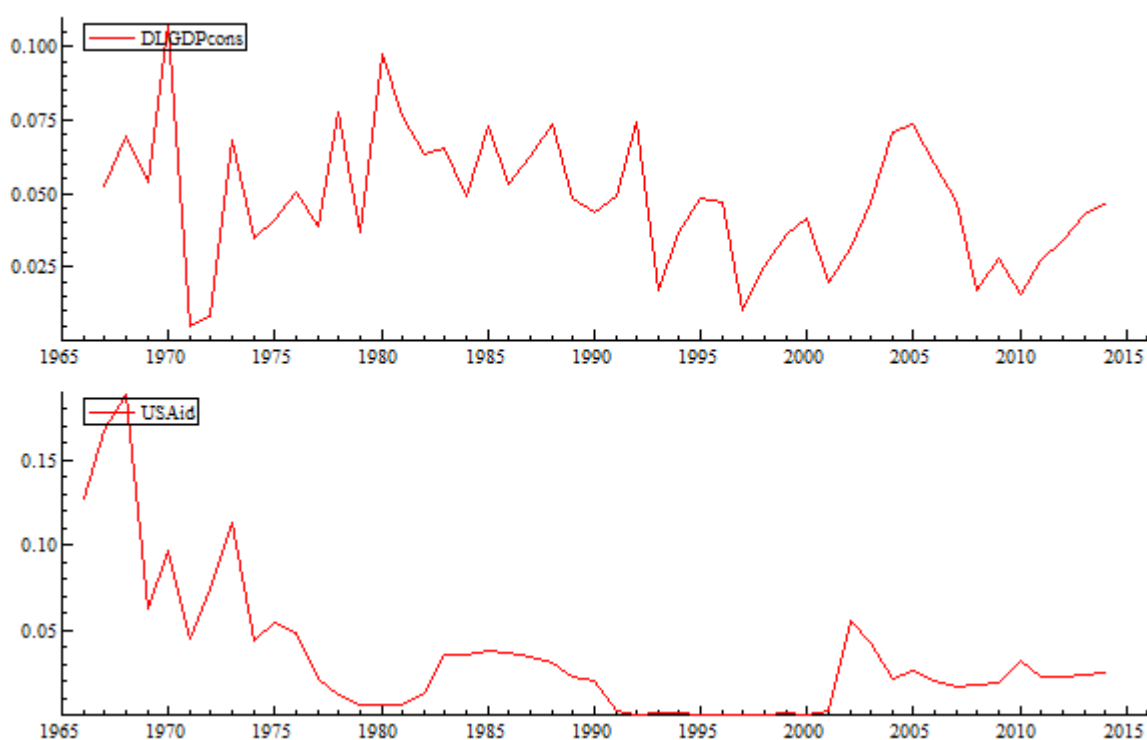
Figure 1 GDP Growth vs US Aid as ratio of GDP

4.4.2 Model 2 – Terrorism

The result of model 2 also appears to be very strong but it makes sense when a few facts are considered like:

a.) The Finance Minister of Pakistan constituted a committee in 2014 so that the impact of the terrorist activities on the economy of Pakistan can be looked upon during the past several years. The committee estimated the impact of terrorism on exports, foreign investment, privatization, industrial output, tax collection etc. and updated the estimates for Fiscal Year 2012 (FY12), FY13 and FY14. The losses came out to be US $ 28459.89 million combined for the three years (Pakistan Economic Survey, 2014-15) which is only 0.04% of the GDP of the three years combined.

b.) Moreover, fortunate for Pakistan, terrorism has emerged as a short run phenomenon and its effects have fizzled out with the passage of time. In addition, terrorism has brought to light resilience of the Pakistani nation, whole of brave enough to resume activities even after the most brutal, attacks. Hence, it is pleasant to report terrorism as a short run phenomenon only.

c.) Furthermore, the first choice to proxy terrorism in this study was thought to be the number of casualties or the number of injured or the sum of both. However the data collected through unconfirmed and contradictory news reports and South Asian Terrorism Portal (SATP) showed huge difference, hence the proxy was dropped and replaced by a dummy variable. The dummy does not capture the true impact of the terrorism as 100 dead people in a year and 500 dead people in another year are the same in dummy variable and this is a major limitation of this study.

d.) The duration of the terrorism generated as an aftermath of the US war against terrorism in Afghanistan is 12 years out of the total sample of 49 years.

In view of the above mentioned facts, it is imperative to study the impacts of the terrorism after a lapse of longer duration so as to better capture the effect in the estimation.

4.4.3 Model 3 – Political Stability

The result of model 3 is also justified when the political landscape of Pakistan is dug into. The GDP growth has had a lag to respond to the political changes and instabilities. The change of the government and the immediate rush of the incumbent government to dismantle the policies of the previous think tank (as a symbol of political revenge) also put the incumbent government under pressure to bring its own new policies with better plans and promises for the future. This caused the GDP to grow slowly albeit political stability. A look at the line plots of political stability versus GDP growth also sheds some light on the history of Pakistan's political scenario.
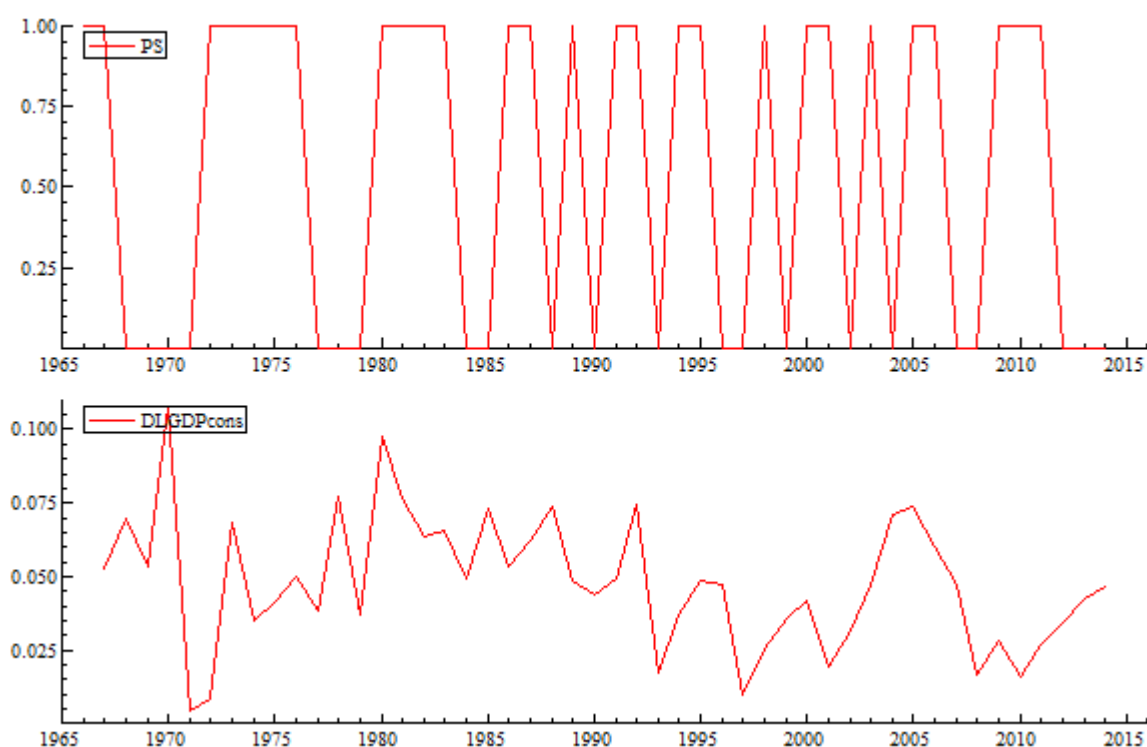
Figure 2 Political Stability vs GDP Growth

The infamous Zia era of the late 70's and early 80's is deemed to be politically stable however the economic growth of Pakistan came down during the period 1981 – 1984. Similarly the initial political stability, after the 1999 coup by the then army chief General (Retd.) Musharraf, was accompanied by an immediate dip in the GDP growth in 2001. Another example from the history lies during the democratic government of Pakistan Peoples' Party when the country was politically stable during 2009 -2011 yet

the GDP growth fell in the year 2010, right in between the stable years, hence highlighting the insignificance of the political instability in the determination of the GDP growth of Pakistan. Furthermore, political stability might not be the sole guarantee for growth, greater vision and competence of incumbent politicians are also the necessary conditions to ensure long run growth.

An important observation is that the control variables of the base model along with US aid, terrorism and political stability have given almost the same results with magnitudes that are comparable, same signs and significance as shown in Table 5.

CHAPTER-V

5   Conclusion and Recommendations

The important feature of this analysis is that this study has come up with a result that the US aid is not necessary for the economic growth of Pakistan. This effectively negates the notion that Pakistan has no alternative but to rely on the foreign aid, especially the US aid. So a certain policy shift can be considered regarding the decision to become an ally and a strategic partner in the war against terrorism. Results has highlighted that occasional support due to certain strategic interests of super powers is not an assurance for long run growth of a country. On the other hand, this study has come up with a good news that terrorism has failed to hinder the long run economic growth permanently.

Similarly this study can be used as a tool to change the perception of the people that political stability is the important contributor for the economic growth. However, there are other factors that contribute significantly to the economic growth as even during the periods of political turmoil, there are certain ills (like unhealthy political rivalry) that plague the country's economy even during politically stable periods. Those ills are needed to be identified and uprooted from the political and social culture of Pakistan.

To conclude, this study is bold enough to present results that are contrary to common notions. In the light of this study, the policy makers can shift their opinion against becoming heavily dependent on foreign aid and also shifting the alignment tendencies from aid driven priorities to region based priorities (China and Russia). This will help in the form of lesser conflicts in the region that would then allow better opportunities for economic growth. The resilient nation of Pakistan needs to be rewarded in the form of better budget allocation for social priorities like education and health. A healthy opposition culture in the two houses of the parliament, the national assembly and the senate, should be promoted as the expected competition from the government-in-waiting would force the present government to bring in better policies and hence bolster the economy of the country.

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