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# Impact of US Aid, Terrorism, and Political Stability on Economic Growth of Pakistan

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## ABSTRACT

US aid is perceived as an important factor in the economic growth of Pakistan. Owing to the United States (US) for aid, Pakistan stood along the US on various occasions, where certain decisions have brought a wave of terrorism into Pakistan. Therefore, it is important to assess the impact of both of these factors i.e. US aid and terrorism. Moreover, the political landscape of Pakistan is also seen as a major factor in fostering the growth. Therefore, the impact of US aid, terrorism, and political stability on the long run economic growth of Pakistan is measured using time series data from 1966-2014 in this study. ARDL co-integration technique is employed to estimate the long run impact, whereas, Error Correction Model exhibits the short run effect. Results are contrary to common notions and growth is not driven by the selected factors. All the three variables are statistically insignificant in the long run, despite appearing with the expected signs for growth. In the light of this study, the policymakers can shift their alignment tendencies from aid-driven priorities to the region-based priorities like the China-Pakistan Economic Corridor (CPEC).

**JEL:** O47, K42,

***Key Words:*** Economic Growth, US Aid, Terrorism, Political Stability, Single Equation Co-Integration Technique

## INTRODUCTION

The world has become a global village where each country is in competition with the others, or at least with a certain group of countries. This struggle 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, in this regard, is generally used to represent 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 of a country is affected by a mix of variables that all contribute to giving progress a shape.

These variables include consumption, investment, government expenditure, net exports, inflation, domestic factors (like climate, environment etc.), internal and external stability, relations with neighbors and other countries in the region and many others. Pakistan's economy has reported mixed performance in the past years of her history. Growth has varied in different periods depending on different policies being implemented at the national as well as the 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 United States of America (USA).

In 1950, Liaquat Ali Khan, the first prime minister of Pakistan, visited the United States 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. 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 USA. So, Pakistan has been receiving economic assistance aid from the USA since 1951 and military assistance started in 1955 after a mutual defense treaty was signed in 1954. This US aid has remained a major component of the foreign aid as it made up the large share of it. Hence, the US aid has started to be seen as an important factor for having an impact on the economic growth of Pakistan. The relations between Pakistan and the USA grew hot and cold over the time among the echoes of "Do more" even recently.

However, Pakistan has always been on USA 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 November terrorist attacks on the USA in 2001. 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. That was the reason Taliban slipped into Pakistan through the porous Durand line (Pak-Afghan border) and the war against terrorism had entered into the Pakistani soil. This war has taken a toll on the civilian as well as military power.

A huge number of terrorist attacks have resulted in an exuberating number 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 4$^{th}$ and if we exclude Iraq and Afghanistan, as

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these are the states where war was held, Pakistan ranks 2nd most terrorism-hit country during 2001-2008 (Nagdy & Roser, 2015). This has adversely affected the security situation and 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 an 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 a 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 democratically elected government in 2008 into another elected government in 2013 after successfully completing its tenure of five years. Due to such instability of the democratic governments, periods with autocratic governments are perceived to be better in terms of economic performance when the political scenario had been stable in the country. Hence the impact of political stability on the economic growth of Pakistan is also worth studying. Thus, this study will bring to the light long-run impact of the said phenomena on the economic growth of Pakistan.

The study aims to extend literature in the following ways:

- To investigate the role of US aid in the economic growth of Pakistan
- To assess the impact of 'war on terror' in Pakistan on its economic growth
- To investigate the relationship between economic growth and political stability

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. This study is devoted to investigating 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 considered the three factors in the same study, as per our knowledge. It has tremendous scope keeping in view the external factors affecting the growth of Pakistan. This study also yields some policy suggestions based on the results in lieu of US aid, terrorism, and political stability so as to bring better economic growth.

## LITERATURE REVIEW

Literature guides us to a number of viewpoints on the topic under discussion in this study. For this purpose, this section presents some important studies that are available on the topic and also highlights the research gap.

Khan and Ahmed (2007) discussed the impact of foreign aid on the economic growth. They found insignificant effect *albeit* that aid affects the economy negatively. On the other hand, 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). US aid has been high during the military regimes in Pakistan and hence it has also promoted dictatorship in Pakistan (Ali, 2009).

Aid has increased after the start of the Afghan war, however, the side effect of the warlike refugees, Kalashnikov culture and terrorism has negatively impacted the economic growth of Pakistan (Hyder et al, 2015). Political stability is very important to keep the society united (Memon et al, 2011). The GDP per capita growth has also been hindered badly during politically unstable periods (Aisen & Veiga, 2013).

Luqman, (2015) analyzed the role of the political regimes in the effectiveness of foreign aid using time series data from 1972 to 2011. The democratic regimes are found to be non-supportive in the effectiveness of foreign aid. The study also suggested diminishing returns to scale related to foreign aid. Khan and Ahmed (2007) suggested that the impact of foreign aid on 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 study applied the co-integration technique for the period 1972-2006 and found that the impact of foreign aid on economic growth is insignificant, statistically. Hence, the study concluded that foreign aid is not a blessing for Pakistan and has certain demerits like compromising the autonomous status of the nation.

The impact of different socio-economic indicators on the economic growth of Pakistan has been analyzed by Mullick (2004) in the aftermath of the 9/11 attacks on the US, analyzing the period 1980-2003. This study found that the US aid has positive effects on the economic performance of Pakistan. However, cost of siding with the US in the war against terror is greater than the benefits. It is argued that it is in the US interest to provide more assistance to Pakistan because economically stable Pakistan would be a better place for the US to invest. Being a labor-intensive country, Pakistan can serve as a better destination for investment (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 is taken as evidence that the US aid has been implicitly promoting

dictatorship in Pakistan in order to pursue its own political and geo-strategic goals. Initially, 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 strengthens the argument. Hence the US aid to Pakistan is always linked directly to its foreign policy goals rather than the socioeconomic development of Pakistan (Ali, 2009).

**Terrorism and Economic Growth**

Terrorism is defined as the maximum possible degree of unlawful or illegal actions where the number of affected people is high 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 9/11 attacks. Pakistan became an important ally and strategic partner to the US in this war against terrorism. Resultantly, Pakistan has faced the wrath of the terrorists due to its proximity to the center of disturbance. So, when the costs and the benefits are compared, it is clear 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 (Farooq and Khan, 2014). Pakistan has been badly affected by different religious and ethnic conflicts in addition to the repercussions of the Afghan war in its neighborhood. Considering these incidents, Pakistan's social as well as economic structure has been deeply affected. Hyder et al., (2015) assessed the impact of terrorism on the economic growth of Pakistan using the Solow growth model with the help of data from the Global Terrorism Database (1981-2012). The results show the negative impact of terrorism on the economic growth of Pakistan. On the other hand, the foreign aid that Pakistan has received because of terrorism has a positive impact on the economic growth. This foreign aid includes aid, grants, debt rescheduling etc. (Hyder et al., 2015).

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 a layer of mistrust between the two nations. Thirty-one percent of the Pakistanis live below the poverty line while the social development has been quite low on the agenda of all the governments in Pakistan. Hence the aid that comes to Pakistan needs to be delivered to the affected people for the economy to recover (Hashmi, 2007).

**Political Stability and Economic Growth**

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 by the 9/11 attacks on the US within a space of fewer than two decades have altered the geopolitical scenario and caused new instability dilemmas especially in South Asia.

The 9/11 attacks caused a major shift in the US 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 US operation in Pakistan. This new policy paved way for an era of terrorist attacks and internal instability throughout the country. Therefore, the foreign policy shifted towards neutralizing such terrorist threats and accordingly the issue of terrorism is the new defining force of the US-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 public, also defines the direction of realization of the national interests. The 9/11 incident took the world by storm and Pakistan's internal and external policies were deeply affected by the incident. Tactically, Pakistan took a U-turn from its earlier Afghan policy in exchange for four things: Pakistan's national security, the revival of the economy, security of the nuclear assets and the Kashmir cause. On the economic front, the huge influx of migrants from 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 US. Many jihadists and Taliban fighters in Afghanistan were from the Pakhtoon tribes of Pakistan and hence their deaths were seen as the non-interest of United States in the welfare of the people (Shah & Riaz, 2013).

Alesina (1996) analyzed the impact of political instability on per capita GDP growth for a period of 1950 to 1982 in panel data for 113 countries. Political instability has been defined 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 study mentions that the change of the government is followed by many other changes hence causing 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 in Aisen and Veiga (2013). The panel data for 169 countries and time period 1960-2004 was used.

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 a negative impact on the total factor productivity growth and also discourages the accumulation of the physical and human capital. Therefore, the governments in the politically unstable countries must find the root causes of instability in their country and mitigate their impact on the economic policies. The impact of bureaucratic corruption, governance and political instability on the economic growth in Pakistan have also been analyzed. The analysis shows that high corruption coupled with weak governance results in lower

economic growth. The increased level of corruption forces the government to depend on seigniorage to overcome the budget deficit. Corruption and poor governance, team up with political instability, causes the low levels of economic growth (Haider, 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 unstable 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 a direct threat to the national security, the war against terrorism and the world economy. The economy of Pakistan is already aid driven and in such a scenario, the poor law and order situation discouraged the foreign investors to invest in Pakistan. The inefficient use of the aid after the 2005 earthquake and the 2010 floods have caused a huge trust gap among the donors. The foreign donors are now relying on the non-governmental organizations rather than the government to do the job of social and welfare uplift in Pakistan (Memon, 2011). Therefore, in view of the stated literature, the US aid has 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) while asking 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, 2015) whereas qualitative analyses suggest the same (Farooq and Khan, 2014). Therefore, the more statistical evidence is required to support the statement. Political instability exerts a negative influence on growth (Alesina, 1996) and hence it has to be studied for Pakistan based on a different definition of political stability.

**Table 1**: *Impact of Variables of Interest on Economic Growth*

| Study | Independent Variable | Method | Result |
|---|---|---|---|
| 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 |

## RESEARCH METHODOLOGY

As obvious, this study is concerned to analyze the impact of US aid, terrorism, and political stability on the economic growth in Pakistan. A dummy variable is used for political stability. This section contains the discussion regarding the basic economic model that relates US aid, terrorism and political stability to economic growth for this study.

This study is based on the theoretical models developed adopted by Khan and Ahmed (2007), Hyder (2015), and Memon (2011) that provided a theoretical link between US aid, terrorism, and political stability towards economic growth. Developing upon the said studies, the desired regression equations to study the given relationship can be written as follows:

| **Regression Equation** | **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 analysing the impact of US Aid |
| $GDP\ growth_t = \alpha_5 + \alpha_6\ Control_t + \alpha_7\ Ter_t + \varepsilon_t$ | Eq. (3) Model analysing the impact of Terrorism |
| $GDP\ growth_t = \alpha_8 + \alpha_9\ Control_t + \alpha_{10}\ PS_t + \varepsilon_t$ | Eq. (4) Equation analysing the impact of Political Stability |

Where *GDP growth* indicates gross domestic product growth rate, $US\ Aid_t$ presents US aid, $Ter_t$ presents terrorism (dummy) and $PS_t$ presents political stability (dummy) measures for Pakistan. Here '*t*' refers to time. *Control V*ariables like Foreign Direct Investment, Government Fixed Capital Formation, Government Expenditure, Trade Openness and Inflation were considered during the estimation; mainly following Levine and Renelt (1992). $\varepsilon_t$ represents the error term. 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 the effective long duration. To achieve this objective, this study utilized time series data consisting of 49 data points covering 1966-2014. The major reasons for the selection of the said time period included; long dictatorship regimes perceived to be a politically stable lie in this range, while the troublesome 80's, 90's and some part of 2000's are also covered in it. It also covers a decade of terrorism (war against terrorism). Data availability problems restricted extension beyond 1966. Moreover, 1947 and the early years were the nascent years of Pakistan and including that unstable time in the analysis would result in highly skewed results. 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), Center for Global Development (CGD), Institute of Policy Studies (IPS) Islamabad, South Asia Terrorism Portal (SATP) and the Guardian (Elahi, 2011). The variables are as follows in Table 2:

**Table 2**: *Variables for Analysis for this Study*

| 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 the ratio of GDP | WDI, World Bank |
| Government Fixed Capital Formation | *GFCF* | Government fixed capital formation as the ratio of the GDP | WDI, World Bank |
| Government Expenditure | *GE* | All government current expenditures for purchases of goods and services as the ratio of GDP | WDI, World Bank |
| Trade Openness | *Open* | Imports plus Exports as a ratio to GDP | WDI, World Bank |
| Inflation | *Inf* | The 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* | The 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 |

The nature of the data and the relationship to be investigated guide us towards the estimation technique. As this study aims to measure the effect of US aid, terrorism and political stability on the long-term economic growth of Pakistan, therefore the technique appropriate to assess the long run relationship needs to be adopted. The autoregressive 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.

The ADF test (Appendix-I) suggests that the dataset consists of variables that are integrated of different order [i.e. I (0) and I (1)], therefore, Kiviet and Phillips (1992) single-equation cointegration technique is used. The Kiviet and Phillips (1992) unrestricted dynamic model can be presented as below where the lag dependent variable (at level) is the error correction (EC) term representing the long-term relationship:

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

Here $y_t$ 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 with the help of $\boldsymbol{\theta}$. The coefficient of lagged dependent variable ($\beta$) 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 over the long run. If β is zero, it means that there is no long run relationship whereas $0 < \beta < -1$ indicates that the model is stable. Finally, the General-to-specific (*Gets*) approach is adopted for the selection of the specific model to empirically estimate the stated relationship following Hendry and Krolzig (2003, 2005); Krolzig and Hendry (2001). 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 process continues until only statistically significant variables are left in the model. Hence, *GETS* technique will eliminate the insignificant variables and lags. Various tests were applied to get reliable results including error autocorrelation, heteroscedasticity, and non-normality and functional form misspecification tests.

## FINDINGS OF THE STUDY

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. The long-run co-integrating relationship was depicted by *ARDL* technique where *ECM* was used to find the error correction term in the base model. Then *Gets* approach generated a cautious specific model and cointegration was established (using PcGive Unit Root test) to exist among the variables in the general model. So, the effects of US aid, terrorism, and political stability were analyzed using the *ECM* model. The section then concludes with the interpretation of the results and discussion along with an exploratory analysis of the data and justifications from the history. The 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 Kiviet and Phillips (1992) cointegration approach is used. The variables were expressed in level to explain the long-run economic growth. Five explanatory variables were included in GUM i.e. Foreign Direct Investment as the ratio of GDP, Government Fixed Capital Formation as the ratio of GDP, Government Expenditure as the ratio of GDP, Trade Openness, and Inflation, to explain the dependent variable GDP growth.

$$DLGDP_t = \alpha_0 + \delta_t + \sum \beta_e DLGDP_{t-i} + \sum \beta_f DFDI_{t-i} + \sum \beta_h DGFCF_{ti} + \sum \beta_i DGE_{t-i} + \sum \beta_j DOpen_{t-i} + \sum \beta_k DInf_{t-i} + \gamma_e LGDP_{t-1} + \gamma_f FDI_{t-1} + \gamma_h GFCF_{t-1} + \gamma_i GE_{t-1} + \gamma_j Open_{t-1} + \gamma_k Inf_{t-1} + \varepsilon_t$$

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, 2004, 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 co-integrating 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. Thus, GDP growth is co-integrated 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 a negative impact in the long run; which are all in accordance with the economic theories. Moreover, the diagnostic tests for error autocorrelation (AR), heteroscedasticity (ARCH and hetero), non-normality (Normality) and functional form misspecification (RESET) were all satisfied.

**Table 3**: *ECM Representation of ARDL Model for General Economic Model (Dependent Variable - DLGDP)*

| Variables | | General Model (with 1 lag) | Specific Base Model |
|---|---|---|---|
| Constant | Constant | 7.27*** | 6.42*** |
| GDP | *DLGDP_1* | -0.28** | -0.26** |
| FDI | *DFDI* | 0.01* | 0.02*** |
| | *DFDI_1* | 0.002 | --- |
| Capital Formation | *DGFCF* | 0.008** | 0.009*** |
| | *DGFCF_1* | -0.005* | -0.006*** |
| Government Expenditure | *DGE* | 0.001 | --- |
| | *DGE_1* | 0.0008 | --- |
| Trade Openness | *DOPEN* | 0.001 | --- |
| | *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] |

**Table 4:** *Solved Static LR Equation for Base Model i.e. General Economic Model (Dependent Variable - DLGDP)*

| Variables | | Solved Static LR Equation for Base Model | |
|---|---|---|---|
| Constant | Constant | Constant | 5.09*** |
| GDP | *DLGDP_1* | DFDI | 0.013*** |
| FDI | *DFDI* | DGFCF | 0.003 |
| | *DFDI_1* | DLINF | 0.014*** |
| Capital Formation | *DGFCF* | LGDP | -0.22*** |
| | *DGFCF_1* | GFCF | 0.006*** |
| Government Expenditure | *DGE* | OPEN | 0.003*** |
| | *DGE_1* | LINF | -0.025*** |
| Trade Openness | *DOPEN* | Trend | 0.01*** |
| | *DOPEN_1* | --- | --- |

As presented in the previous section, the specific model explains the long run effects of independent variables on GDP growth. This long-run relationship is expected not to be disturbed by the inclusion of the variables i.e. US aid, terrorism and political stability. The variables for US aid, terrorism, and political stability were added one at a time to the base model to avoid multicollinearity issue and to find the individual 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:** *ECM results in the effect of US Aid, Terrorism and Political Stability 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 the ratio of GDP.
Note 3: Long run parameter = $\boldsymbol{\theta}/\beta$ (from Eq. 5)

## DISCUSSION

The ECM term, i.e. lagged level dependent variable (LGDP_1) is statistically significant and has values between the acceptable range (0, -1) i.e. 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. In addition, the Kiviet and Phillips (1992) test are also statistically significant, therefore long run co-integrating relationship is confirmed with the statistical analysis.

Foreign Direct Investment (as the ratio of GDP), Gross Fixed Capital Formation (as the ratio of GDP), trade openness and inflation, all have almost consistent values across the three models. 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 and it has remained consistent.

According to the results, the GDP grows by 2.9 percent ($\boldsymbol{\theta}/\beta$) when the GFCF increases by 1 percent of the GDP. Similarly, GDP decreases by 11.4 percent ($\boldsymbol{\theta}/\beta$) 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 $H_0$ is accepted and the US aid is insignificant in the GDP growth of Pakistan. However even if the coefficient is interpreted in quantitative terms, 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. For the rest of the model, 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 $H_0$ is accepted and the terrorism is insignificant in the determination of the GDP growth of Pakistan. However, to discuss the magnitude, 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. Model 3 analyses the relationship between political stability and GDP growth. The statistical results show that $H_0$ 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.

**Model 1 – US Aid**

The result of model 1 (Table 5) seems to be strange but it makes sense when the line plots of GDP growth and US aid (as the ratio of GDP) are observed. The line plot clearly indicates that the US aid contributed 13 to 19 percent to the GDP of Pakistan in the years 1966 to 1968. However, the share of the US aid in the GDP of Pakistan has dropped significantly over the years, as much as 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 democratic decade of the 90's due to shifting in the US interests. 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 reason for the missing long-run impact. But certain growth episodes, even in the absence of US aid, is encouraging.

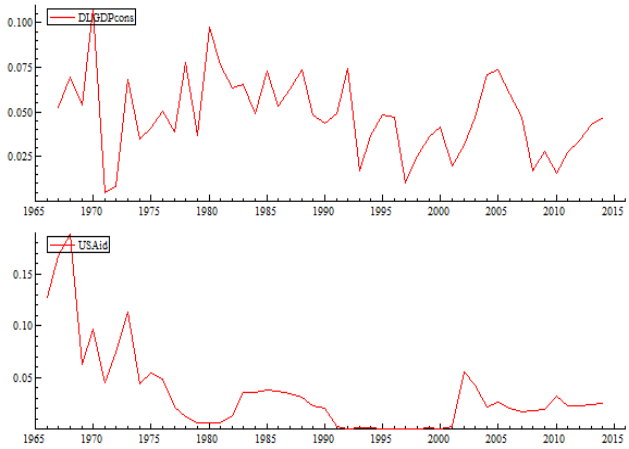


***Figure 1****:* GDP Growth vs US Aid as the ratio of GDP

**Model 2 – Terrorism**

The result of model 2 also appears to be very strong but it makes sense when 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. The committee estimated the impact of terrorism on foreign investment, industrial output, exports, privatization, tax collection etc. and updated the estimates for the Fiscal Year 2012-14. 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 three years combined.

b.) Moreover, fortunate for Pakistan, terrorism has emerged as a short-term phenomenon and its effects have fizzled out with the passage of time. In addition, terrorism has brought to the light resilience of the Pakistani nation, who were 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 a 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 terrorist after a lapse of longer duration to better capture the effect of the estimation.

**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).

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.

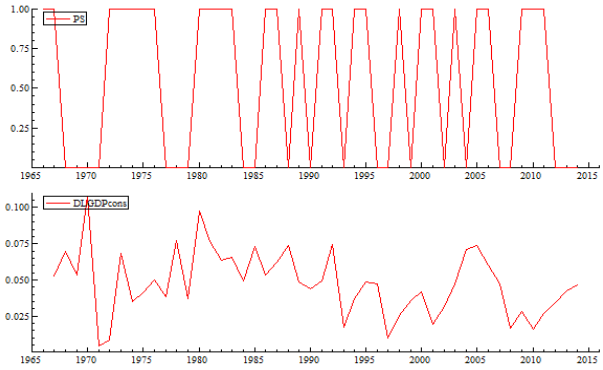


***Figure 2:*** Political Stability vs GDP Growth

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.) Perviaz 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.

## CONCLUSIONS

The important feature of this analysis is the finding that the US aid is not the lifeline for the economic growth of Pakistan. This effectively refutes the view that Pakistan has no substitute but to rely on the foreign aid, especially the US aid. Therefore, alternate scenarios can be safely considered while deciding to become an ally and a strategic partner in the war against terrorism. Results have highlighted that occasional support due

to certain strategic interests of superpowers is not a guarantee for the durable growth of a country. On the other hand, this study also elaborates that terrorism is a short-term phenomenon and has failed to hinder the economic growth permanently over the long run.

Similarly, political instability though disturbs but not permanently damages the long run economic growth. However, there are other factors that contribute significantly to the economic growth as even during the periods of political turmoil, there is 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.

**Recommendations**

To conclude, this study is bold enough to present results that are contrary to common notions. In the light of this study, the policymakers 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 (CPEC). 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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