



RESEARCH PAPER

**The Impact of Political Instability on Economic Growth in Pakistan:
Application of ARCH Model**

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PAPER INFO	ABSTRACT
Received: June 17, 2017	The purpose of the study is to determine the impact of political instability on economic growth. For this purpose, we measured political instability by means of three proxies: terrorism, govt. type and election year whereas economic growth is determined with GDP annual growth rate. We used data from 1988 to 2016 and applied ARCH model as our dependent variable (economic growth) is subject to heteroscedasticity and ARCH effect. The results showed that political instability measured with terrorism and election year has negative effect on economic growth. However, govt. type is also found to be negative though insignificant. The study adds to the literature of Pakistan and is helpful for policymakers and investors
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Introduction

Political stability is an important element for economic development. The economy can severely be vulnerable to political instability. The concept of political instability is ascribed to Lipstel (1960) that stated that for a country to be deemed as stable, it must have democracy or, even dictatorship continuously for 25 years. However, recent economic and political conditions have changed and redefined the concept of political instability. The basic idea is that a consistent political government can result in efficient governmental system. If policies are distorted and are subject to inconsistency, the government is considered to be inefficient. How political instability and economic growth are related can be studied in two ways. First, the political instability hampers growth via increasing uncertainty that

reduces private investment. Second, political instability determines the demand of production factors and also the way expenditures are made that unswervingly has influence on economic growth (Asteriou & Price, 2001). Literature shows that politically unstable countries are turned out to be economically poor coupled with uncertain policies and decision making. The investors perceive that frequent change in government results in threat to policies and, resultantly, they intend to invest in safer environment with less political uncertainty (Alesina & Perotti, 1996).

The studies also find coalition governments as threat-dissolving and more likely to be sustained. The definition of political instability under journalistic approach refers political instability as a weak and unlikely to survive government. Another definition denotes it as situations or events that intimidate or actually change political behavior in a way other than prescribed by the constitution (Gyimah-brempong and Traynor, 1999). These events are prone to bring about adverse changes in business environment as well as rule pertains to financial environment of the country.

Traditional growth model (e.g. solow growth model) states that economic growth depends on savings, capital buildup and growth. Nevertheless, modern growth theories accentuate technology and human capital formation (Sato, 1964). Likewise, political conditions of a country also determine the growth level of that country such as economic growth largely depends on consistency of governmental policies and their implementation (Baro, 2013).

Pakistan has been experiencing fluctuation in growth rate since 1970 when a great political turmoil resulted into war due to which Pakistan had to face great loss of men and money. As Pakistan recovered from aftershocks of war, the growth rate became sustainable, though started to diminish again at the end of 1990s strictly due to political unrest and inconsistent policies. Another rise can be seen after at the beginning of 21st century when GDP was seen to be increasing (Hussain, 2009).

The instability in political environment creates inflation and unemployment that is one of the fundamentals to cause political instability that eventually results in public riot in form of strikes against governments. The criticism on government started to be raise from society that delivers negative signals to the investors who, consequently, stop investing in such a risky environment. Political instability is believed to interrupt economic activities, and macroeconomic variables. Hence, political instability is destructive for economic policies.

The literature, particularly pertaining Pakistan, has surprisingly a few researchers investigating the effect of political factors on economic growth. Most of the researchers have been concentrating on determinants of economic development, investment and inflation. According to Qureshi (2010), the economy of Pakistan has been influenced by largely by political instability since long. Since

formation, 33 years has been spent under military control and rest under political regimes.

Literature Review

The decline in political system has urged the researchers to go through and find out the nexus between political instability and the economic progress. Hibbs (1977) points out those political issues were the main cause of low economic progress. Gupta in 1987 also mention that due to unfavorable economic policies of various politicians, economic growth can be effected. Velasco and tornell (1992) also emphasized that civil unrest; strikes are the main cause of instable political system which may leads towards low investments and finally a collapse in economic system of a state. Dimitrious et al.(2001) portray that political instability and economic condition of a state are inversely interdependent. Jong-A-pin in (2009) describes the same relationship. Zaidi(2006) shed light that economic growth was effected due to the irregular policies of government in the period of nationalization. So in Zia's period, a tremendous change was brought in the economic polices.Alesina and Rodrik in 1994 also points out about the various investigations that authoritarian governments were more economic growth than the democratic ones. Same was mentioned by Aisen and Veiga in 2013 that politically weaker governments were resulted low economic growth rate. And its remedy according to Barro (2013) was to free the government and its institute from corruption because the investors would be motivated to invest and it leads towards the growth of economy. And it is possible only when there is a peaceful, responsible democratic government. Many argued that terrorism is also the cause of political instability as well as low economic growth. Frey et al (2004) describe that terrorism may result of weaker government and low economic growth rate.

Material and Methods

The study uses economic growth as criterion variable that is measured with GDP growth. Our study also uses GDP growth rate as a measure of economic growth. Political instability is measured with different proxies. First, terrorism related activities that depict sadism and turbulence in a specific area. The murder or attempt to murder of an influential political leader also creates mass aggression and impedes social, political and, consequently, economic environment of the country. Thus, we measured political instability by using terrorism as a proxy. Second way to measure political instability is determining either country is being governed by political government or military. For political government we used 0 and 1 for otherwise. Third, election year is used as a measure of political instability that takes the value 1 if it occurs and 0 otherwise.

We used ARCH model as our data is in time series and data of GDP is prone to autocorrelation and heteroscedasticity. The concept of ARCH was introduced by Engle in 1982 that usually together the periods of high and low volatility. ARCH model controls future volatility in terms of past volatility. It is a

powerful econometric tool employed in recent studies to analyze volatility over time. In time series, variance of disturbance term largely depends on its lagged values. The value of variance varies over time i.e. time series are heteroscedastic. The specification of ARCH may be written as:

$$y_t = a + \delta x_t + \mu_t \tag{1}$$

$$\sigma^2 = \tau_0 + \tau_1 \mu_t^2 - 1 \tag{2}$$

Eq. 1 shows mean equation and Eq. 2 shows variance equation. In the above equations, variance is not constant as variance of error term is predicted by prior error terms that signal presence of autocorrelation.

Results and Discussion

In this section we will discuss statistical results based on our research questions. Table 1 shows descriptive statistics of the variables including number of observations, mean score, standard deviation, and minimum and maximum values. The total observations are collected for the years 1988 to 2016. The mean score of Growth is 4.2 with standard deviation 1.86; terrorist related activities (TRR) have mean value of 776 with standard deviation 859; the effect of year of election (election) measured with dummy “0 and 1” has mean score 0.24 with standard deviation 0.43 and government type (Govtype) has mean score 0.137 and standard deviation 0.35, though descriptive statistics of nominal variable is of no meaning.

Table 1		Descriptive Statistics			
Variable	Obs	Mean	Std. Dev.	Min	Max
Growth	29	4.289878	1.867614	1.014396	7.705898
TRR	29	776.6897	859.5061	56	2887
Election	29	.2413793	.4354942	0	1
Govtype	29	.137931	.3509312	0	1

Table 2 shows correlation among variables. It shows primary evidence for the relation between dependent and independent variables. The table shows negative association of growth with all proxies of political instability.

Table 2		Correlation Matrix			
	Growth	TRR	Election	Govtype	
Growth	1.0000				
TRR	-0.2025	1.0000			
Election	-0.2569	-0.0299	1.0000		
Govtype	-0.2197	-0.3141	0.0081	1.0000	

Two basic assumptions for applying ARCH model: (i) data must have clustering volatility and (ii) data must have ARCH effects. First, simple OLS model is run to set data for testing of assumptions.

For testing assumption (i), heteroscedasticity test is run as shown in table 3 and assumption (ii) is tested with LM test for ARCH as shown in table 4.

Table 3 Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
chi2(1)	= 2.89
Prob > chi2	= 0.0890

Table 4 LM test for autoregressive conditional heteroskedasticity (ARCH)			
lags(p)	chi2	Df	Prob > chi2
1	13.807	1	0.0002

H0: no ARCH effects vs. H1: ARCH(p) disturbance

Further, several graphs are also helpful for predicting either ARCH model is appropriate to be used or not. Figure 1 shows clear presence of volatility in data of GDP. Moreover, figure 2 presents histogram that shows presence of outliers at upper side particularly. All these primary estimations confirm the validity of ARCH model for the present study. Table 5 shows main results found using ARCH model.

Figure 1 GDP

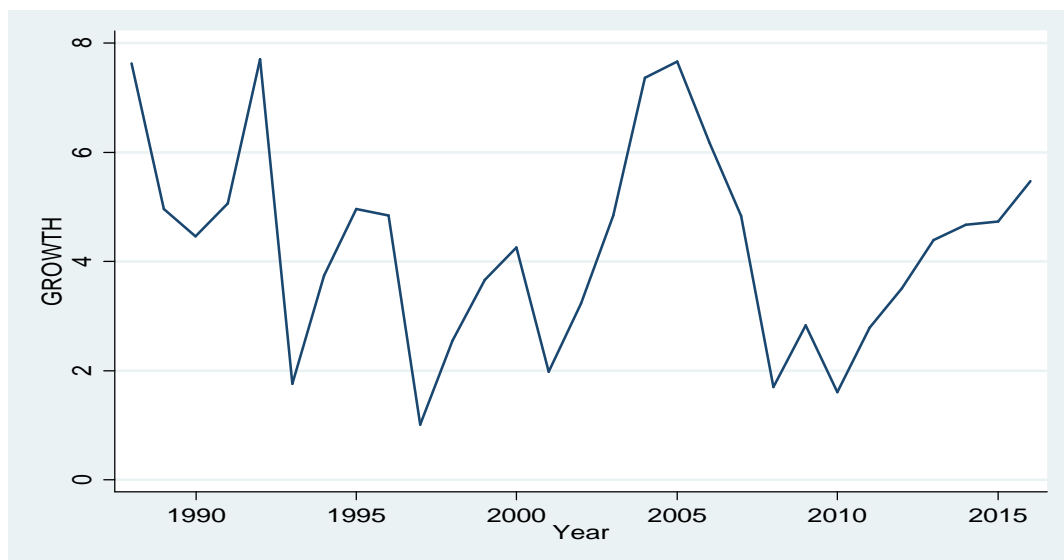
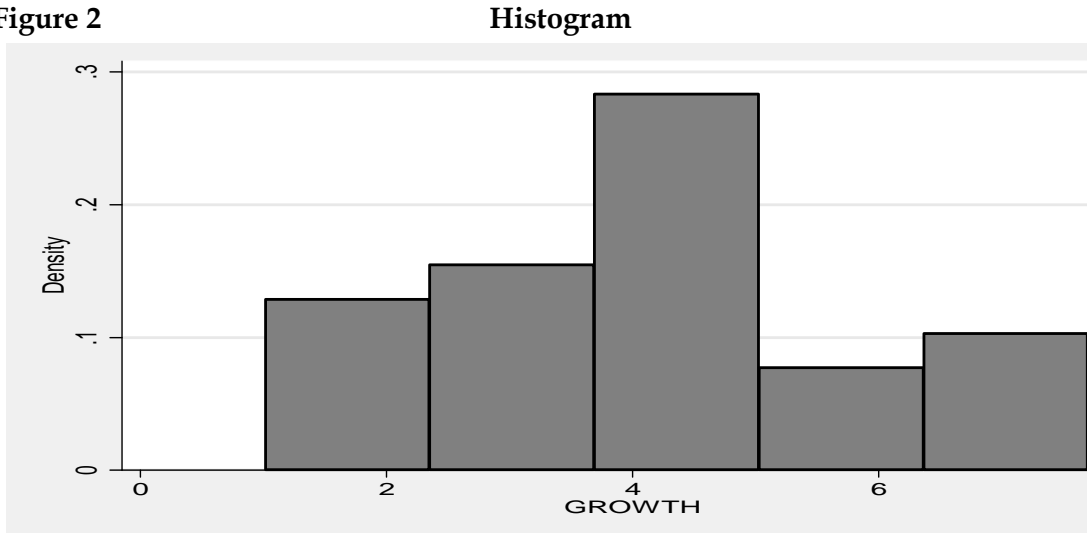


Figure 2



We found that political instability, measured with number of terrorist activities, has significantly negative effect on economic growth as hypothesized. We also hypothesized that year of election may cause uncertainty among investors that is proved with significant negative coefficient of Election. However, Govtype is not found to be significant.

Table 5		ARCH Model				
Growth	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Mean Equation						
TRR	-.0006685	.000397	-1.68	0.092	-.0014467	.0001096
Election	-1.097246	.6369589	-1.72	0.085	-2.345663	.1511704
Govtype	-1.699347	1.487842	-1.14	0.253	-4.615465	1.21677
c	5.323607	.5143159	10.35	0.000	4.315566	6.331648
Variance Equation						
L1. arch	.0300759	.3366032	0.09	0.929	-.6296542	.6898061
c	2.613698	1.20301	2.17	0.030	.2558423	4.971554

Conclusion

This study determined the impact of political instability on economic growth in case of Pakistan using data for the last 29 year from 1988 to 2016. Proxies of political instability include terrorism (measured with number of causalities), effect of election (1 if election happens in a year and 0 otherwise), and type of government (1 if military control is in the country and 0 otherwise). The coefficients are found using ARCH model. The results show that TRR and Election have significant negative effect on economic growth as shown in mean equation. The rationale behind negative impact is that political instability disturbs the economic activities that hamper economic growth.

The study has policy implications for policy makers, investors and regulatory bodies to establish their objectives and policy formulations. The future research may be conducted by incorporating additional and improved proxies of political instability that may provide better results.

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