Exploring the Relationship between Political Stability and Economic Growth: The Case of Pakistan

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Abstract

Political stability has been an issue for Pakistan since its inception; consequently, economic growth presents a marked fluctuation. In Pakistan, research in this area is minimal. This study aims to reveal the nature of the relationship between them. To carry out the research Solow-Swan growth model is applied and assumed that productivity enhances the environment of consistency and certainty of the ruling regime. Annual time series data is utilized for the period of 1972 -2016, and to detect cointegration or long-run association, Johansen test of cointegration is applied. To determine the short run dynamics and nature of the long run relationship Vector Error Correction Model (VECM) technique is adopted.

A long-run relationship has been identified among variables. Still, an insignificant error correction coefficient indicates that there is no tendency exists among variables to restore equilibrium in case of any shock. Secondly, an insignificant negative relationship is identified between political stability and economic growth, which means there is no significant and robust relationship that exists between them. In contrast, a positive and significant relationship is revealed between investment and GDP. The study recommends the policymakers to strengthen public institutions and design long-run economic and financial policies for the economic development of the country.

Key Words: Political stability, Economic development, Investment, Long run relationship, Economic policies.

1. Introduction

Exploring a relationship between political stability and economic performance has attracted a great deal of attention from economic and political researchers in the last couple of decades. The main reasons for a high degree of political instability are inaccurate socioeconomic policies, large

budget deficits, and an unstable exchange rate (Acemoglu et al., 2003). A significant part of economic literature advocates that political instability negatively affect the growth and development of the economy (Alesina et al., 1996; Nasir et al., 2008; Khan & Saqib, 2011).

There is no consensus about the nature of the regime, which guarantees political stability. Democracy in the country is not an indicator of political stability. In many countries, especially in developing economies, democracy, and economic growth are negatively correlated (Zakaria & Fida, 2011). Similarly, the history of Pakistan's political stability is not so convincing (Hussain, 2009). The country faced enormous challenges during its early life, and consequently, the growth rate had fluctuated. So it is believed that political instability is one of the factors due to which country still falls into the category of lower-middle-income countries (World Bank classification, 2017). However, some adverse socioeconomic situations may affect the country's growth. Hence, there exists a need to inquire about any association between socio-political factors and economic performance.

For a healthy economy, economic growth is an important indicator. Sustained economic growth puts a positive impact on national income and employment, which are necessary elements of a high standard of living. Higher economic growth also generates extra tax income for government expenditures that can be used by the government for the wellbeing of the society. Looking at the history of Pakistan, we observed two types of regimes, i.e., the military and democratic governments. There has been an unprecedented dismissal of democratic government without completing its tenure. Although in military governments, political instability, protests for democracy, violation of human rights, and a high degree of uncertainty were on the surge with high economic growth.

On the other hand, in a politically stable environment, the economy did not experience significant growth. Hence, it is unclear what kind of relationship exists between political stability and economic growth in Pakistan. The objective of this study is to investigate the nature of the relationship between political stability and economic growth in Pakistan. There has been a growing interest for a few decades to investigate the relationship between non-economic factors like terrorism, institutional efficiency, crime, and political stability, and economic growth. Among these non-economic factors, political stability is an important one, but the relationship between political stability and economic development is not clear (Elbargathi, 2019). This study is an

attempt to fill this gap by investigating the relationship. In this way, it contributes significantly to the existing literature of this research area.

After the introduction, the study proceeds to review the literature and empirical work related to this research field. The third section presents the methodology of research, explaining model specification and econometric procedures, followed by data processing, and the estimation of the results. The last section describes the conclusion and recommendations.

2. Literature Review

The relationship among political stability (or many regime changes), violence and terrorism, and economic development is a relatively new area of research in economic literature. Several studies, both quantitative and qualitative, are available in the existing body of knowledge. Still, so far, a consensus has not been built regarding the nature of relationship between political stability and economic development.

In this section, first, we present the studies from Pakistan's perspective, then the studies related to the world will be described. Ghani et al. (2008) discussed economic performance under democratic or autocratic regimes and presented that democracy and development nexus does not hold in the case of Pakistan. Economic development has been adversely affected by frequent changes in government, but the performance of military regimes was relatively better. They concluded that Pakistan could achieve a significant growth if policies are consistent for which a smooth transition of the regime is essential. According to Husain (2009), Pakistan, after its independence, has been ruled by both military and democratic governments, but only a single democratic regime could manage to complete its tenure. The transition from democratic to military or vice versa occurred after a long span of uncertainty and instability, which caused slow economic activity, a rise in unemployment, and inflation. The uncertain conditions drastically hampered economic growth. Qureshi et al. (2010) used time-series data and developed a political instability index through Principal Component Analysis, including various proxies to determine the democracy-development nexus in Pakistan. The study concluded (consistent with many other studies in the related field) a negative association between political instability and the performance of Pakistan's economy. Zaidi (2015) observed that improper economic policies made by the newly formed government, which emerged after prolong political unrest, had been the leading cause of the poor performance of Pakistan. A smooth transition from one government to another never happened in Pakistan. Using various proxies for political instability like strikes, terrorism, and

disturbances, it was revealed by Tabassum et al. (2016) that uncertain and unstable environments rendered a slowdown in economic growth.

Researchers all over the world for many decades have been involved in exploring the relationship between economic performance, political, social, religious, and criminal factors. Barro (1991) described that the growth of the economy is negatively correlated with political instability. Chen and Feng (1996) found that economic growth, political assassinations, and the possibility of regime change have a negative effect. In contrast, Deevereux and Wen (1996) observed that private investments were discouraged during unstable political situations which hurt the economy. Feng (1997) linked political instability with an autocratic regime, which results in political assassinations, a lack of economic freedom, freezing business activities, and a decrease in economic growth. Drazen (2000), and Asterious and Price (2001) identified that economic performance is affected by political instability due to two reasons. Firstly, a politically unstable environment declines private and foreign investment, causing a fall in output. Second, owing to a fall in aggregate demand, producers decrease their production, leading to a fall in GDP. Fosu (2002) described prolonging violence and disturbance often result in a military coup but concluded an uncommon assessment as an unsuccessful coup creating a decline in economic activities while a successful coup improves the economy. One of the reasons of lower economic growth in the politically unstable condition is the loss of investors' confidence which leads to decline in business activities which in turn fall in aggregate demand and ultimately causes contraction of all economic activities (Smith, 1987; Pin, 2009; Aisen and Viaga, 2013). The following research hypotheses are built to investigate the relationship between political stability and economic growth:

H_1: Economic growth is not affected by political stability in Pakistan.

H_2: Economic growth is not affected by Investment in Pakistan.

3. Research Methodology

The study utilizes annual time series data for real GDP per capita, gross fixed capital formation as a percentage of real GDP, and political stability. The model is specified based on previous studies and economic theories. Recent economic techniques have been applied.

3.1. Theoretical Framework and Model Specification

We use the Solow growth model for analyzing the role of political- stability on economic growth. The Solow model began with a production function of the Cobb-Douglas. The Cobb-Douglas production-function is stated below.

$$Y = BK^\beta L^{1-\beta} \qquad\qquad 1$$

Here, Y is real gross domestic product, L is number of labors, K is the physical capital, B is the Hicks-Neutral productivity term, β is the share of physical capital in the production and $1 - \beta$ is the share of labor in the production

In per worker term,

$$\frac{Y}{L} = \frac{BK^\beta L^{1-\beta}}{L}$$

$$y = B\left(\frac{K^\beta}{L^\beta}\right)$$

$$y = Bk^\rho \qquad\qquad 2$$

$y = \frac{Y}{L}$ Real GDP per unit of labor and $k = \frac{K}{L}$ physical capital per unit of labor

By taking logarithm both sides

$$\log(y) = \log(B) + \beta \log(k) \qquad\qquad 3$$

In the above specification, let us incorporate political stability. North (1990) stated that a country's long-run economic performance is determined by efficient institutions, including various political, social, and administrative factors. Through affecting the total factor productivity of the country, political stability can directly affect the growth. It is assumed by enhancing or reducing total factor productivity (TFP) term B that political stability affects economic growth. Assume the total factor productivity term B as a function of political stability, ρ

$$B(\rho) = Be^{\sigma\rho} \qquad\qquad 4$$

where, σ is magnitude of political stability growth, ρ is political stability and $B = B_0 e^{gt}$ is the growth rate of technology, t is time. Combining equations 1 and 4;

$$\log(y) = \log(B) + \sigma\rho + \beta \log(k)$$

$$\log(y) = \log(B_0 e^{gt}) + \sigma\rho + \beta \log(k)$$

$$\log(y) = B_1 + gt + \sigma\rho + \beta \log(k) \qquad\qquad 5$$

where σ will measure the effect of political stability on economic growth directly. For estimation purpose equation, 5 can be converted into the following:

$$\Rightarrow y_t = \alpha + \beta_1 IPG_t + \beta_2 PS_t + \mu_t$$

In the above equation, log-linear is eliminated because the values of one variable are in plus and minus form. y is the real GDP per capita, IPG is the investment as a percentage of real GDP, PS is the political stability, μ is the error term, α, β_1, β_2 are the parameters to be estimated.

3.2. Explanation of variables

A brief description of concerning variables that included investment as a percentage of real GDP (Gross fixed capital formation has been used as an investment), Real GDP per capita, and political stability is as under.

3.2.1. Real GDP per capita (GDPPC)

In this study, Real GDP per capita is used as a proxy of GDP as it reflects a more accurate measure for Gross Domestic Product of a country and used in many studies, for example, Kemal et al. (2007). Real GDP per capita. = Real GDP / population. Data on real GDP per capita has been collected from World Development Indicators, World Bank.

3.2.2. Investment (Gross Fixed Capital Formation) as a percentage of real GDP (IPG)

To capture the level of investment in Pakistan, the study uses Investment as a percentage of GDP, and data is collected from World Development Indicators, World Bank.

3.2.3. Political Stability (PS)

The source of the "Political stability" data is from polity IV, which is a polity series to provide continuous data on political instability for a large number of countries.

3.3. Techniques of Data Analysis

3.3.1. Unit Root Test

With the support of the unit root test, we check whether the data is stationary or non-stationary for each of the variables. If the results are non-stationary, it means the data has trends, and if there is no trend, so it means the data is stationary. To check the nature of stationarity of data, several unit root tests are available in the economics literature. In this study, a commonly used test, Augmented Dickey-Fuller (ADF), is applied. This test is an improved form of Dicky –Fuller test with constant and trend and mathematically represented in the following equation forms;

$$\triangle Y_t = \gamma Y_{t-1} + \sum_{j=1}^{p} \left(\delta_j \triangle Y_{t-j} \right) + e_t$$

$$\triangle Y_t = \alpha + \gamma Y_{t-1} + \sum_{j=1}^{p} \left(\delta_j \triangle Y_{t-j} \right) + e_t$$

$$\triangle Y_t = \alpha + \beta t + \gamma Y_{t-1} + \sum_{j=1}^{p} \left(\delta_j \triangle Y_{t-j} \right) + e_t$$

- t is the time index,
- α is an intercept constant called a *drift*,
- β is the coefficient on a time trend,
- γ is the coefficient presenting process root, i.e., the focus of testing,
- p is the lag order of the first-differences autoregressive process,
- e_t is an independent identically distributes residual term.

3.3.2. Johansen Test for Cointegration

If time series is non- stationary at the level, the Ordinary Least Square (OLS) procedure does not show meaningful results for variables under study. In this situation, a long term relationship among variables is determined through various tests of cointegration. We can investigate the existence of cointegration with two methods, i.e., Johansen test of Cointegration and Auto-Regressive Distributed Lag (ARDL) bound testing. If all variables are non-stationary at the level and become stationary at 1st difference, then the most appropriate method is the Johansen test of cointegration, where the null hypothesis is no co-integration.

3.3.3. Vector Error Correction Model (VECM):

This technique is applied when all variables in a time series are non-stationary at level but stationary at the first difference and second differentiation is not required.

4. Results and Estimation

The objective of this study is to find out the nature of the relationship between political stability and economic growth in Pakistan. The annual time series data from 1972-2016 is used with three variables, real GDP per capita, Per capita investment, and political stability. To explore the nature of time series, and stationarity of the variables Augmented Dickey-Fuller (ADF) test is used.

4.1.ADF Test:

The results of the ADF test with two equations, constant and constant, with trend applied to all three-time series used in the study. Results are given in Table 1

Table 1: Results of ADF Test

Variables	Level		1st Difference	
	Constant	Trend	Constant	Trend
GDPPC	0.6104	-2.78	-4.04***	-4.11**
IPG	-0.66	-2.77	-6.09**	-2.79***
PS	2.52	-2.53	-7.25**	-7.24***

Note: ***, ** and * indicates the level of significance at 1%, 5% and 10%, respectively.

According to the results given in Table 1, all the time series variables are non-stationary at a level. At the same time, stationary at 1stdifference, so OLS procedure cannot be applied as it shows spurious results when time series are non-stationary at the level. Consequently, to find out the relationship among variables, Johansen test of cointegration, and Vector Error Correction Techniques applied.

4.2.**Lag Selection**

There are many lag selection criteria advocated in literature like HQ, FPE, AIC, and SC, but based on recommendations of FPE and AIC, 2 lags are adopted to minimize the loss of a degree of freedom.

4.3.**Johansen-Juselius Test of Cointegration**

The next step in our estimation is to identify cointegration or long term relationship among time series variables. For this purpose, the Johansen-Juselius test of cointegration is applied. This procedure consists of two tests, trace statistics test and maximum Eigenvalue test. The results of both tests are indicated in Table 2 and Table 3.

Table 2. Unrestricted Cointegration Rank Test (Trace)

Hypothesized No.of CEs	Eigen Values	Trace statistics	0.05 Critical Values	Probabilities**
None *	0.598	65.009	29.797	0.0000
At most 1*	0.321	26.640	15.494	0.0007
At most 2*	0.218	10.329	3.841	0.0013

Note: (a) Trace statistics indicates 3 cointegration equations at 0.05 level
(b) * indicates rejection of null hypothesis at 0.05 level
(c) * * Mackinnon-haug Michelin (1999) p-values

The result of both tests of Johansen Cointegration rejected the null hypothesis that there is no Cointegration and results reveal that there exist three Cointegration equations at 0.05 % level of probability, which indicates that a long-run relationship presents among all variables. The fundamental rule to reject the null hypothesis in both tests is that values of trace statistics and maximum Eigen statistics should be higher than their critical values.

Table 3. Unrestricted Cointegration Rank Test (Maximum Eigen Values)

Hypothesized No. of CE.s	Eigen Value	Maximum Eigen Statistics	0.05 Critical Values	Probabilities **
None*	0.598	38.368	21.131	0.0001
At most 1*	0.321	16.311	14.264	0.0234
At most 2*	0.218	10.329	3.841	0.0013

Note: (a) Trace statistics indicates 3 Cointegration equations at 0.05 level
(b) * indicates rejection of null hypothesis at 0.05 level
(c) ** Mackinnon-haug Michelin (1999) p-values

4.4.Vector Error Correction Model

The data of this study indicate that all-time series variables are non-stationary at the level and become stationary at the first difference. There exists cointegration or long-run association among variables. The VECM technique has been applied to identify a long-run relationship as well as short-run dynamics. The following equation reveals the long-run effect on the dependent variable.

$$GDPPC = -19.0177 + 15.6893 IPG - 5.6085 PS$$
$$(5.3982) \quad (2.8911)$$
$$[2.9063] \quad [-1.9341]$$

The result indicates that investment as a percentage of GDP has a significant positive effect, while political stability has a negative but insignificant effect on the economic growth of Pakistan. It is because, in the history of Pakistan, economic growth has not been closely linked with political stability but with foreign inflows from abroad. The economic growth of Pakistan was raised due to a heavy foreign inflow; otherwise, its growth remained trivial. For example, from 2004-2006, average annual growth was 7% despite a high level of uncertainty, political instability, violence, and disturbance in the country. Similarly, the fiscal year 2017-18 was politically very volatile, uncertain and disturbed due to dismissal of the Prime Minister (PM) Nawaz Sharif and appointment of a new Prime Minister in the country but experienced 5.6% growth. On the other hand, during 2008-2013 (when Pakistan People's Party in power), the business environment was less uncertain and unstable, but average GDP growth had 2.4%. It clearly shows that political stability and economic growth in Pakistan do not correlate. The results are also consistent with some previous studies such as Ghani et al. (2008), and Qureshi et al. (2010), etc.

Table 4. VECM Long Run Coefficients

Variables	Coefficients	Standard Errors	t-statistics
GDPPC	1.0000		
IPG	15.6893	5.3982	2.9063
PS	-5.6085	2.8911	-1.9341
Constant	-19.0177		
R-square	0.2834	*F-Statistics*	1.8352
Adjusted R-square	0.1263	*Mean De.Variable*	0.799

Long-run results indicate a lower value of R-square and adjusted R-square because data is in differenced form, and the explanatory power of independent variables is low.F-statistics shows coefficients are significant. Still, the significance of the dependent variable is very low. At the same time, the standard deviation is high, indicating many variations in variables but it does not affect the reliability of the results.

Table 5 provides information on short-run effects on GDP per capita in terms of lag 1 and 2. Results indicate that GDP per capita has an insignificant effect On GDPPC of the current year; however, investment carried out during the last two years still affect positively and significantly on current GDPPC. The political stability of the last two years negatively effects on current GDPPC, but its effects are insignificant. The value of error correction EC-1 (-0.3451) is a negative indication of a long-run association among variables as it is insignificant; there is no error correction. So in case of any shock or disequilibrium, there is no restoration of equilibrium during the period of study for the case of Pakistan. That is why it is concluded that the research hypothesis that there is no relationship between political stability and economic growth cannot be rejected.

Table 5. VECM Short Run Results & Error Correction

Variables	Coefficients	Standard Errors	t-Statistics
D(GDPPC)-1	0.0121	0.2349	0.0514
D(GDPPC)-2	0.1003	0.1914	0.5241
D(IPG)-1	5.2434	2.6652	1.9662
D(IPG)-2	4.2844	2.2215	1.9362
D(PS)-1	-0.5401	0.8587	-0.6289
D(PS)-2	-0.5276	0.6315	-0.8353
Constant	1.1105	2.3055	0.4858
EC-1	-0.3451	0.1802	-1.9043
Diagnostic Test			
1.Serial Correlation LM Test		t-stat=7.9473	Prob=0.539
2.Residual Normality Test		J-Bera=3.0841	Prob=0.2139
3.Residual Heteroscedasticity Test		ChI. Square=64.32	Prob=0.9455

Source: Author's compilation

In the lower section of Table 5, the results of the residual diagnostic test are given. The first test is for serial correlation in residuals, the test statistics value with high probability shows that the null hypothesis is accepted, so there is no serial correlation. The second test is about the normality of residuals. The value of Jarque-Bera and high probability value reveal that residuals are normally distributed. The third diagnostic test is related to heteroscedasticity in residuals. A high value of Chi-square and probability value shows that there is no heteroscedasticity in residuals.

5. Conclusions

The objective of this study was to identify the nature of the relationship between political stability and economic growth in Pakistan from 1972 to 2016. We use per capita GDP, Investment as a percentage of GDP, and political stability. Since all variables were non-stationary at the level and stationary at 1st difference, Johansen Test of Cointegration and VECM model was applied. The study indicates that there is an insignificant negative relationship between economic growth and political stability. This can be interpreted as there is no significant and robust relationship between political stability and economic growth in Pakistan. This interpretation is supported by the history of Pakistan, where economic growth was very robust during highly volatile and unstable political environmental significant positive relationship exists between GDP and investment. The diagnostic tests were also applied to test serial correlation, normality, and heteroscedasticity of the residuals. Our results are consistent with the results of research carried out in the world as well as Pakistan through minimal studies are performed in Pakistan.

6. Recommendations

The study extends some suggestions or recommendations for the better performance of the economy.

(a) An agreement or consensus is suggested for all stakeholders of the country that the long term policies developed in one regime must be continued irrespective of any change in economic managers or policymakers.

(b) Existing rulers must focus on the economic performance and wellbeing of the citizens, which minimizes political uncertainty.

(c) Institutions and legal frameworks are developed for strict accountability for the people involved in corruption or mismanagement.

(d) A mechanism is developed to limit all institutions to work in their constitutional jurisdiction.

(e) Any element creating disturbance, violence, or law and order situation must be discouraged.

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