

## Testing the Validity of Political Business Cycle for the Fragile Five Countries

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**Abstract.** *Using panel least squares estimation method, this study examines the links between both the business cycles-the components of political stability and the business cycles- aggregate political index (overall score) in the Fragile Five countries, namely Turkey, Indonesia, India, South Africa and Brazil for the period 1986-2013. According to the empirical findings, higher degrees of political instability are associated with lower growth rates of GDP. Moreover, the results suggest that law and order, socio-economic conditions and internal conflict have a positive impact on GDP growth rate. In other words, countries with a lower political risk related to these three indicators had greater GDP growth rate in the period 1986 to 2013. In addition, other findings suggest that high inflation and greater population growth are associated with lower GDP growth, while GDP growth rate in a previous year are positively associated with the business cycles. So, we concluded that political stability is playing an important role in shaping of the business cycles of the Fragile Five countries.*

**Keywords:** Political Business Cycle, Cross-sectional dependence.

**JEL Classification:** C23, E32.

## I. Introduction

In the context of new political economy, the importance of political stability/instability on the economic indicators of the countries has recently been discussed. Uncertainty emerging as a result of the availability of an environment of political uncertainty in the countries creates unrest in economic and financial markets and brings out important effects on the economic indicators of the countries through investment channel.

Studies which are carried out in this framework indicate that foreign capital is gathered in stable economies and leaves the country immediately in case of instability. In this case, political stability is very important for the countries in order to show the future to the investor, to enable the factor of trust and to attract international capital investments to the country through this way.

When theoretical framework is analyzed in the context of political stability and economic effects, it is seen that different effects emerge and there is an agreement that the concept of political stability/instability affects the business cycles. Political stability/instability is effective in a very wide range on economic growth through various channels. Firstly, political instabilities in the country create a lack of confidence regarding the protection of property rights; so in this way, domestic investments are alienated and economic growth rate is negatively affected because of a capital outflow from the country. Especially the populist economy policies applied in election periods prevent the efficient usage of the sources; increase in public expenses causes an alienation of private sector investments as well as negative signals of economic growth and macro-economic indicators.

Moreover, human capital which is underrated because of political instabilities in the country comes out of the country through immigration and so, economic growth and development are prevented. Furthermore; political trust problems alienate investments through economic and financial risk increase; so, production declines and monetary fluctuations negatively affect foreign trade balance, capital balance problems created by the effect of capital outflows causes negative signals of the countries' payment balance and finally it decreases the international competitive power of the country. Rapid capital outflows to abroad in an environment of instability cause that national money rapidly loses value in the economies in which national reserves are inadequate.

In this context, there are important increases in production costs of the developing countries, especially the importing ones, and economic growth of the country is negatively affected. The common result in the context of effects of political instability on economic conjuncture is that macro-economic variants, especially the economic growth, are affected through investment channel. In an environment of instability, the most important indicator of which is the possibility of alteration of the government, long-term policies become unclear and investments are either postponed or transferred to abroad. Investment and saving, main functions of economic growth, are carried out in an unclear environment, consumption expenses increase.

If the new government which is formed after the election continues the current policies in a stable manner, the environment of uncertainty relatively decreases. On the other hand; if stable policies cannot be maintained, completely new policy applications are adopted and

coalition governments become the ruling government, political instabilities increase and economic indicators, especially the investments, are negatively affected.

In the study, the effects of the context of political stability/instability on the economic conjuncture will be examined on Turkey, Indonesia, India, South Africa and Brazil which have such common characteristics as high level of inflation, the problem of high level of current deficit, slowing economic growth, populist economy policies applied in the context of entering into election periods and finally political and financial risks which are described as the Fragile Five.

The paper continues as follows: section II establishes the links between the various channels of political instability and the business cycles based on the existing literature. Section III describes the dataset and presents the empirical methodology, section IV discusses the empirical results, and section V concludes the paper.

## II. Previous studies

Economic growth and political stability are deeply interconnected. Especially, political instability is regarded by economists as a serious malaise harmful to economic performance. In this section, some earlier studies regarding the relationship between political stability and economic growth are discussed. Most of the existing empirical studies link political instability rather than stability with economic growth. There is a growing literature on the effects of political instability on macroeconomic performance, both from a theoretical perspective and in terms of empirical work.

Chen and Feng (1996) showed that regime instability, political polarization and government repression have negative impacts on economic growth.

Alesina et al. (1996) analyzed the link between growth rates of GDP and government changes in a sample of 113 countries for the period 1950-1982 and found that in countries and time periods with a high propensity of government collapse, economic growth is significantly lower than otherwise. Alesina and Perotti (1996) argue that income inequality increases political instability which, in turn, decreases aggregate investment in a country.

Devereux and Wen (1998) developed a simple model which relates political instability to economic growth and the share of government in GDP. They found that political instability reduces economic growth and also increases the government's share of GDP.

On the other hand, both Campos and Nugent (2000) and Goldsmith (1987) found that there was no statistically significant relationship between political instability and economic growth in the sample of countries they were selected. However, Campos and Nugent (2000)'s results provide only weak evidence for the negative link running from political instability to per capita GDP but stronger causality from political instability to investment.

Bildirici (2004) examined the link between political instability, financial depth and economic growth in emerging countries for the period 1985-2004. The empirical results from fully modified OLS estimation showed that political instability is negatively associated with economic growth, while financial depth is positively associated with economic growth.

Examining the relationship between political instability and economic growth in Nepal during the period 1975-2003, Koirala et al. (2005) concluded that higher political instability is associated with higher levels of trade deficit and unproductive government expenditures, while lower the total factor productivity, investment, savings and hence, lower economic growth.

Younis et al. (2008) investigated the effects of political instability on economic growth in ten Asian economies during 1990-2005. Using ordinary least squares estimation method, the authors concluded that political stability have played a dominant role in determination of economic growth.

Jong-A-Pin (2009) investigated the effects of the four dimensions of political instability on economic growth for a sample of 98 countries in the period 1984-2003. Identifying four dimensions of political instability as civil protest, politically motivated aggression, instability within the political regime and instability of the political regime, the author showed that the four political instability dimensions have different effects on long-run economic growth and found that only instability of the political regime and civil protest are significantly related to long-run economic growth.

Sanlisoy and Kok (2010) analyzed the long-run relationship between political instability and economic growth in the Turkish economy by using monthly data over the period 1987-2006. The authors found that there is a negative relationship between political instability and economic growth.

Armah (2010) investigated that whether political stability influences the aid-growth relationship in 31 Sub-Saharan African countries from 1984 to 2007. To identify the effect of political stability on the aid-growth relationship, the authors used a dependable measure of political stability constructed with Political Risk Service's ICRG dataset. The results suggested that aid and growth are positively related and that political stability has a strong influence on the aid-growth relationship.

Dimitraki (2010) analyzed the relationship between political instability and economic growth in 20 Western Europe countries for the period 1950-2004. The author concluded that there is a bi-directional causal relationship between the two variables and stated that political instability is the driving force which explains the impact of different political regimes on economic growth.

Burke (2011) examined the short-run relationship between economic growth and national leader changes for 160 countries for the period 1963-2001. The findings indicated that more rapid economic growth increases the short-run likelihood that national leaders will retain their positions.

Gurgul and Lach (2012) examined the relationship between political instability and economic growth in 10 Central and Eastern European countries in the period 1990-2009. Using a propensity for government change as a proxy variable of political instability, the authors showed that political instability had a negative impact on economic growth and that there was no causality relationship between the two variables.

Aisen and Veiga (2013) investigated the effects of political instability on economic growth for 169 countries for the period 1960 to 2004. Using the system-GMM estimator, the authors found that political instability negatively affects economic growth by lowering the rates of productivity growth and, to a smaller degree, physical and human capital accumulation.

As can be seen from the literature review, in general the studies showed the negative association between political instability and economic performance. The current study is an attempt to enrich the literature by revisiting political stability-the business cycles nexus in the Fragile Five countries. Nevertheless, this study methodologically contributes by estimating this relationship in the presence of cross sectional dependence which to the best of our knowledge. The current study also boasts a methodological contribution by using the most recent data (1986-2013) with alternative specification and application of a very advanced econometric technique hardly used in the area. Finally, it is thought to contribute to the literature by investigating the effects both the components of political risk and aggregate political risk on the business cycles in the selected countries.

### III. Data and methodology

In this study, we use a dataset consisting of a panel of annual observations for Brazil, India, Indonesia, Turkey and South Africa, are known as the “Fragile Five” or BIITS, which is declared by the Wall Street on August 1, 2013. The new five have some common elements. All are soaked in too much short-term global capital, leading to excessive overseas payments deficits for far too long. Their consequent high growth rates have made their governments complacent, even as they strengthen their currencies, making them less competitive (See-Yan 2014).

The analysis comprises the period 1986 to 2013, for which the linkage between political stability and the business cycles is of particular concern. We selected the time period for which all indicators were available. As well as political stability, other explanatory variables employed in the empirical analysis are population growth rate, inflation rate, which is employed as a proxy for macroeconomic policy distortions and GDP growth rate in a previous year. Table 1 provides details on all variables in further parts of the paper.

**Table 1. Data Set**

Full name	Abbreviation used	Definition
GDP Growth Rate*	GROWTH	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 U.S. dollars.
Population Growth Rate*	POPGR	Population growth (annual %) is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage.
Inflation rate*	CPI	Inflation as measured by the consumer price index changes in the cost to the average consumer of acquiring a basket of goods and services.
Political Stability**	POLSTAB	Government stability, called GOVST in the empirical analysis, measures the government's ability to carry out its policies and to stay in office. Lower risk ratings indicate a higher level of political risk.
		SOCIO quantifies socio-economic pressures at work in society
		INVEST assesses the investment profile, that is, factors related to the risk of

Full name	Abbreviation used	Definition
		investment that are not covered by financial and economic risk components. Lower risk ratings indicate a higher level of political risk.
		INCONF stands for internal conflict, measuring political violence within the country and its actual or potential impact on governance. Lower risk ratings indicate a higher level of political risk.
		EXCONF weighs external conflict. Lower risk ratings indicate a higher level of political risk.
		CORR represents the level of corruption. Lower risk ratings indicate a higher level of political risk.
		MILIT stands for the influence of the military in politics. Lower risk ratings indicate a greater degree of military participation in politics and a higher level of political risk.
		RELIG measures religious tensions, stemming from the domination of society and/or governance by a single religious group seeking. Lower risk ratings indicate a higher level of political risk.
		LAW quantifies law and order. High points are given to countries where the judicial system has the strength.
		ETHNIC assesses the degree of tensions among ethnic groups attributable to racial, nationality or language divisions. Higher ratings are given to countries where tensions are minimal.
		DEMOC relates to the democratic accountability of the government. The highest number of risk points is assigned to Alternating Democracies, while the lowest number of risk points is assigned to autarchies.
		BUR represents the institutional strength and quality of the bureaucracy. High points are given to countries where the bureaucracy has the strength.

\* Data from World Bank, World Development Indicators (WDI).

\*\* Data from International Country Risk Guide (ICRG), provided by the Political Risk Services (PRS) Group. Since 1984, PRS Group (2005) has provided information on 12 risk indicators that address not only political risk, but also various components of political institutions.

\*\*\* Data from U.S. Energy Information Administration (EIA).

In this study, we examined the links between both the components of political stability-the business cycles and the political index (overall score)-the business cycles. In order to avoid the problem of multicollinearity, the 12 indicators will be singly added to the benchmark regression, which is written as follows:

$$GROWTH_{it} = \beta_0 + \beta_1.GROWTH_{it-1} + \beta_2.POPGR_{it} + \beta_3.CPI_{it} + \beta_4.POLSTAB_{it} + e_{it} \quad (1)$$

where  $\beta$  are the estimated parameters,  $POLSTAB_{it}$  stands for one of the 12 indicators for political risk, which will be singly added to the benchmark regression to avoid the problem of multicollinearity and  $e_{it}$  is an error term.

In addition, we examined the aggregate effect of political risk on the business cycle. The model is following as:

$$GROWTH_{it} = \beta_0 + \beta_1.GROWTH_{it-1} + \beta_2.POPGR_{it} + \beta_3.CPI_{it} + \beta_4.AGGPOLSTAB_{it} + e_{it} \quad (2)$$

where  $AGGPOLSTAB_{it}$  stands for summation of the 12 indicators for political risk. Table 2 presents descriptive statistics of data used in this paper.

**Table 2.** *Descriptive statistics*

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observation
GROWTH	4.281517	4.684226	10.25996	-13.12672	3.588008	140
AGGPOLSTAB	59.91399	62.22917	75.00000	34.75000	8.425259	140
CPI	50.20000	49.00000	131.0000	0.000000	36.72750	140
POPGR	1.598537	1.528455	2.564923	0.855057	0.361596	140

**Source:** Authors' estimations

### Estimation Procedures

After obtaining the descriptive statistics, we conduct a cross sectional dependence test to see whether the countries are cross sectionally dependent. Having found the presence of cross-sectional dependence in the panel, an appropriate panel unit root test (CIPS) that accounts for cross-sectional dependence is performed to examine whether the series are stationary or not. When analyzing panel data, the other crucial issue to consider is the testing of slope homogeneity. The homogeneity of the estimated coefficients for each individual in the panel is investigated through Pesaran and Yamagata's (2008) homogeneity tests in this study. Finally, Panel Least Squares estimation technique is employed to examine the relationship among the variables.

### Test for Cross-sectional dependence and slope homogeneity

Due to globalization and an increasing integration of economies, controlling of cross-sectional dependence, which could be explained that a shock affecting individuals forming a panel may also affect other individuals seems necessary in this study.

$LM_{BP}$ , Lagrange multiplier test statistic, developed by Breusch and Pagan (1980) and  $CD_{LM}$  and  $CD$  tests, which are developed by Pesaran (2004) are used in order to control cross-sectional dependence among the countries. Since number of cross-section observation is smaller number of time series observation in our model, we use Breusch and Pagan (1980)'s cross-section LM testing.  $LM_{BP}$  test statistic is following as:

$$LM_{BP} = T \cdot \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij}^2 \sim \chi_{N \cdot (N-1)/2}^2,$$

where  $\hat{\rho}_{ij}$  is correlation of coefficient across residuals obtained from each regression estimated by OLS estimator.

The other crucial issue to consider is the testing of slope homogeneity. The homogeneity of the estimated coefficients for each individual in the panel is investigated through Pesaran and Yamagata's (2008) homogeneity tests in this study. Pesaran and Yamagata (2008) proposed a standardized version of Swamy's test of slope homogeneity for panel data models.

### Test for Unit Roots

Usually, the macroeconomic variables are characterized by unit root process (Nelson and Plosser, 1982) when sample period in the panel is quite long (in our case 28 years). Hence, unit root tests for all variables in our dataset are imperative.

Pesaran (2003) presents a new procedure for testing unit root in dynamic panels subject to possibly cross sectionally dependent in addition to serially correlated errors. Pesaran (2003) proposes a test based on standard unit root statistics in a CADF regression. CADF process can be reduced with estimated to the following equation:

$$\Delta Y_{it} = \alpha_i + \beta_i \cdot Y_{i,t-1} + \sum_{j=1}^{pi} \delta_{ij} \Delta Y_{i,t-j} + d_i \cdot \tau + c_i \cdot \bar{Y}_{i,t-1} + \sum_{j=0}^{pi} \phi_{ij} \cdot \Delta \bar{Y}_{i,t-j} + \varepsilon_{it}$$

where  $\bar{Y}_i = N^{-1} \cdot \sum_{j=1}^N Y_{jt}$ ,  $\Delta \bar{Y}_{i,t} = N^{-1} \sum_{j=1}^N \Delta Y_{jt}$  and  $\varepsilon_{it}$  is regression errors. Let  $CADF_i$  be the ADF statistics for the  $i$ -th cross-sectional unit given by the t-ratio of the OLS estimate  $\hat{\beta}_i$  of  $\beta_i$  in the CADF regression. Individual CADF statistics are used to develop a modified version of IPS t-bar test (denoted CIPS for Cross-Sectionally Augmented IPS) that simultaneously take account of cross-section dependence and residual serial correlation:

$$CIPS = N^{-1} \sum_{i=1}^n CADF_i$$

Hypothesis of both CADF and CIPS is same. The null hypothesis is formulated as:

$H_0 : \beta_i = 0$ , which implies that all the time series are non-stationary, and the alternative hypothesis may be:

$H_A : \beta_i < 0$ , which implies that all the time series are stationary process.

### Static Panel Data Analysis

Fixed effects model can be formulated as

$$y_{it} = x'_{it} \cdot \beta + \alpha_i + \varepsilon_{it}$$

where  $\alpha_i$  denotes all the observable effects and it is group-specific constant term in the regression model.  $\alpha_i$  equals  $z'_i \cdot \alpha$  in the regression. If  $z_i$  is unobserved, but correlated with  $x_{it}$ , then the coefficient of  $\beta$  is biased and inconsistent under assumptions of  $E(u_{it}) = 0$ ;  $E(u_{it}^2) = \sigma^2$  all  $i$ ;  $E(u_{it} \cdot u_{jt-s}) = 0$  for  $s \neq 0$  and  $i \neq j$ .

### IV. Estimation results

Firstly, we tested whether the data have cross-section dependency about choosing of first generation panel unit root test or second generation panel unit root test. We employed Breusch and Pagan (1980)'s cross-section LM testing since number of cross-section observation is smaller than number of time series observation in our model. Table 3 reports CD test results confirming the presence of the cross sectional dependence in the panel series. Thus, we must rely on second generation unit root tests instead of first generation unit root tests. In addition,  $LM_{BP}$  test results show that there is no cross-sectional dependence for the model 1 and the model 2 as a whole.



**Table 3.** *LM<sub>BP</sub> Cross-sectional Dependence Results for the Variables and the Models*

BUR	GOVST	SOCIO	MILIT	ETHNIC
38.565***	19.695**	28.985***	30.303***	35.177***
LAW	INCONF	EXCONF	RELIG	CORR
60.292***	36.768***	28.548***	23.125**	19.639**
DEMOC	INVEST	INF	GROWTH	POPGR
31.638***	31.078***	23.480***	28.400***	150.482***
Model 1	10.087			
Model 2	13.370			

\*\*\*, \*\*, \* indicate rejection of the null hypothesis at the 1, 5, and 10 percent levels of significance, respectively.

**Source:** Authors' estimations

The slope homogeneity tests are presented in Table 4. According to Table 4, the homogeneity tests cannot reject the equality hypothesis, which supports that the slope coefficients are homogeneous for all variables both separately the components of political risk and aggregate political risk score. From the point of view of the findings of Table 3 and Table 4, it was decided that it should be applied the panel unit root test, which takes into account both cross-sectional dependence and slope homogeneity.

**Table 4.** *The Slope Homogeneity Tests Results*

Model	$\tilde{\Delta}$ test statistic	p. value	$\tilde{\Delta}_{adj}$ test statistic	p. value
$GROWTH_{it} = \beta_0 + \beta_1 \cdot GROWTH_{it-1} + \beta_2 \cdot POPGR_{it} + \beta_3 \cdot CPI_{it} + \beta_4 \cdot POLSTAB_{it} + e_{it}$	-0.482	0.685	-0.720	0.764
$GROWTH_{it} = \beta_0 + \beta_1 \cdot GROWTH_{it-1} + \beta_2 \cdot POPGR_{it} + \beta_3 \cdot CPI_{it} + \beta_4 \cdot AGGPOLSTAB_{it} + e_{it}$	1.146	0.126	1.259	0.104

\*\*\*, \*\*, \* indicate rejection of the null hypothesis at the 1, 5, and 10 percent levels of significance, respectively.

**Source:** Authors' estimations

The results of the CIPS test are shown in Table 5. According to Table 5, we could reject to null hypothesis of a unit root for the panel series of BUR, GOVST, SOCIO, INCONF, CORR, POPGR, INVEST, GROWTH, CPI, AGGPOLSTAB, D(ETHNIC), D(MILIT), D(LAW), D(DEMOC), D(EXCONF), D(RELIG).

**Table 5.** *CIPS Panel Unit Root Test Results*

BUR	GOVST	SOCIO	MILIT
-4.985***	-2.890***	-2.957***	-2.070
LAW	INCONF	EXCONF	RELIG
-2.167	-2.263***	-1.550	-1.596
D(LAW)	D(DEMOC)	D(EXCONF)	D(RELIG)
-3.839***	-3.145***	-4.914***	-3.676***
DEMOC	INVEST	CPI	GROWTH
-1.741	-3.179***	-2.279*	-3.023***
ETHNIC	CORR	POPGR	AGGPOLSTAB
-1.909	-2.730***	-2.637***	-2.766***
D(ETHNIC)	D(MILIT)		
-2.955***	-4.256***		

\*\*\*, \*\*, \* indicate rejection of the null hypothesis at the 1, 5, and 10 percent levels of significance, respectively. D is the first difference operator.

**Source:** Authors' estimations

The results of the benchmark equation are reported in column 1 of Table 6. We would assume that high inflation and greater population growth are associated with lower GDP growth. On the other hand, we would assume that political stability and GDP growth rate in a previous year are positively associated with GDP growth rate. As can be seen from the results for the benchmark regression, reported in column 1 of Table 6, all control variables have the expected sign. In the next 12 columns, the indicators for political risk have been added in addition to the control variables. The results in Table show that law and order, socio-economic conditions and internal conflict have a positive impact on GDP growth rate, as the coefficients are positive and statistically significant at the 5 or 10 percent level. In other words, countries with a lower political risk related to these three indicators had – ceteris paribus – greater GDP growth rate in the period 1986 to 2013.

We also account for the effects of aggregate political stability, which is summation of the 12 political indicators on GDP growth rates. Table 7 reports the results obtained for this relationship. As can be seen from the results, reported in Table 7, all control variables have the expected sign and they are statistically significant. In addition, the summation of the 12 political indicators has a positive impact on GDP growth rate, as the coefficient is positive and statistically significant at the 5 percent level.

So, we can draw from these results is that the evidence regarding the negative effects of political instability on GDP growth rates are robust to the inclusion of control variables.

**Table 6** Panel Least Squares Estimation Results for Model 1

Independent Variables	Dependent Variable: GROWTH												
	(1)	GOVST (2)	SOCIO (3)	BUR (4)	D (MILIT) (5)	D (LAW) (6)	INCONF (7)	D (EXCONF) (8)	D (RELIG) (9)	CORR (10)	INVEST (11)	D (DEMOC) (12)	D (ETHNIC) (13)
C	2.31*** (6.71)	2.79*** (5.43)	2.00*** (5.24)	2.08*** (6.39)	4.07*** (4.37)	1.94*** (5.60)	1.41** (2.60)	2.40*** (6.74)	2.38*** (9.64)	2.26*** (4.77)	1.53** (2.28)	2.02*** (3.02)	2.30*** (4.59)
GROWTH (-1)	0.07*** (5.40)	0.03* (4.00)	0.06*** (4.39)	0.08*** (6.28)	0.07* (2.15)	0.07*** (4.69)	0.05*** (2.76)	0.05** (2.21)	0.03*** (4.00)	0.06*** (4.95)	0.06*** (4.36)	0.10*** (6.00)	0.07*** (5.30)
Log (POPGR)	-1.01*** (-2.63)	-1.52*** (-3.13)	-1.16*** (-2.95)	-1.02** (-3.11)	-2.22* (-2.17)	-0.79*** (-2.66)	-0.89** (-2.05)	-1.01** (-2.85)	-1.33** (-2.73)	-1.10*** (-2.75)	-0.77* (-1.88)	-0.44 (-1.01)	-1.00** (-2.45)
Log (CPI)	-0.20** (-2.44)	-0.23* (-2.36)	-0.20** (-2.47)	-0.16** (-2.11)	-0.46 (-1.80)	-0.20** (-3.93)	-0.25*** (-3.65)	-0.16** (-2.25)	-0.04 (-1.60)	-0.20* (-2.28)	-0.21** (-2.62)	-0.16 (-1.14)	-0.20** (-2.42)
Log (POLSTAB)		-0.22 (-0.76)	0.25* (1.78)	0.17 (0.76)	0.01 (0.10)	0.36** (2.20)	0.53** (2.30)	0.02 (0.31)	-0.06 (-1.81)	0.09 (0.84)	0.39 (1.56)	0.07 (0.90)	0.00 (0.05)

**Notes:** t-values reported in parentheses. \*\*\* significant at 1% level, \*\* significant at 5% level, \* significant at 10% level. D is the first difference operator.

**Source:** Authors' estimations

**Table 7.** Panel Least Squares Estimation Results for Model 2

Independent Variables	Coefficient	Std. Error	t-Statistic	Prob.
LOG(POPGR)	-0.924156	0.376074	-2.457378	0.0157
LOG(AGGPOLSTAB)	0.841599	0.354604	2.373348	0.0195
LOG(CPI)	-0.246662	0.084168	-2.930592	0.0042
C	-0.936010	1.461539	-0.640428	0.5233
GROWTH(-1)	0.055916	0.013768	4.061355	0.0001

**Source:** Authors' estimations

## V. Conclusions

The business cycles and political stability are profoundly interconnected. Especially, political instability is regarded by economists as a serious malaise harmful to economic performance. Political instability is likely to shorten policymakers' horizons leading to suboptimal short

term macroeconomic policies. It may also lead to a more frequent switch of policies, creating volatility and thus, negatively affecting macroeconomic performance.

Political instability is thought to affect economic growth negatively for at least two reasons: First, it disrupts market activities and labour relations, which has a direct adverse effect on productivity (Giskemo 2012). Secondly, political instability reduces growth because it affects investment negatively. Thus, on the one hand, the uncertainty associated with an unstable political environment may reduce investment and the speed of economic development. On the other hand, poor economic performance may lead to government collapse and political unrest.

This paper examined the empirical link between political stability and the business cycles using the most recent panel data (1986-2013) of the Five Fragile countries, namely; Brazil, India, Indonesia, Turkey and South Africa. This relationship is considered in the presence of cross sectional dependence. Using panel estimation method, the findings of the study showed that law and order, socio-economic conditions and internal conflict have a positive impact on GDP growth rate, as the coefficients are positive and statistically significant. In other words, countries with a lower political risk related to these three indicators had greater GDP growth rate in the period 1986 to 2013.

Furthermore, we also accounted for the effects of aggregate political stability, which is summation of the 12 political indicators on GDP growth rates. The results obtained from this relationship showed that aggregate political stability is positively associated with GDP growth rate. Other empirical results showed that high inflation and greater population growth are associated with lower GDP growth, while GDP growth rate in a previous year are positively associated with GDP growth. Therefore, we concluded that political stability is playing an important role in shaping of the business cycles economic growth in the Fragile Five countries. Thus, countries could have durable economic policies that may engender higher GDP growth.

So, the current study has attempted to enrich the literature by revisiting political stability-the business cycles nexus in the Fragile Five countries. In addition, this study methodologically may contribute by estimating this relationship in the presence of cross sectional dependence which to the best of our knowledge. The current study also boasts a methodological contribution by using the most recent data (1986-2013) with alternative specification and application of an advanced econometric technique hardly used in the area. Finally, it is thought to contribute to the literature by investigating the effects both the components of political stability and aggregate political stability on the business cycles in the selected countries group.

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