

**EXAMINING FRIEDMAN HYPOTHESIS ON POLITICAL,  
CIVIL AND ECONOMIC FREEDOM FOR SAARC COUNTRIES:  
A DYNAMIC PANEL DATA ANALYSIS**

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This paper empirically examines the Friedman hypothesis on political, civil and economic freedom that, a country can have a high degree of civil freedom, and a high degree of economic freedom without any political freedom, but can not have any political freedom if it does not have some degree of civil and economic freedom. Using panel data of five SAARC countries over the period 1995-2011, the dynamic panel data econometric techniques and Granger-causality tests validated the Friedman hypothesis regarding economic and political freedom, but regarding civil and political freedom the reverse is found true. The estimates of the empirical model using UECM show that economic freedom has significant short-run and long-run effects in improving the political freedom in the SAARC region.

*Keywords:* Political Freedom, Civil Freedom, Economic Freedom, Dynamic Panel Data  
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## 1. INTRODUCTION

The world has experienced unprecedented democratic wave during the last four decades that Samuel Huntington (1993) called the “Third Wave” of democratization. The revolution of freedom that began in the 1970s was amplified by the collapse of Communism in the 1990s and the widespread acceptance of the economic policies of the “Washington consensus”. This freedom boom reversed the earlier trend toward state intervention and socialism, which began to take hold at the beginning of the twentieth century (Rosa and Vanssy, 1995). The freedom boom has been observed in political democracy and freedom, and civil and economic freedom which have been accompanied by a movement towards competitive markets, liberalization, and the globalization of

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previously closed economies. This as Milton Friedman called “The Tide Is Turning”.<sup>1</sup>

Milton Friedman in his famous book *Capitalism and Freedom* (1962) made one of the most influential arguments for economic liberalism at a time when the ideas of liberals (in the traditional sense) were distinctly unfashionable. The world-wide shift from autocracy toward civil and economic freedom and democratization has led to substantial research on the interrelationship between various freedoms. In *Capitalism and Freedom*, Friedman sought to establish an argument about the interconnectedness of economic and political freedom, known as “liberal hypothesis” or “Friedman hypothesis” which asserts that economic freedom is an indispensable means towards achievement of political freedom. According to Friedman (1962, p. 10) “History suggests only that capitalism is a necessary condition for political freedom. Clearly it is not a sufficient condition”.

With the development of the relationship between economic freedom and political freedom, a third category of freedom has been added to the mix in the subsequent years, namely social or civil freedom. Friedman himself has argued for the need of such addition in a number of lectures.<sup>2</sup> He said, “I’ve grown increasingly to think that we need to make three classifications (of freedom) instead of two: economic freedom; social or civil freedom; and political freedom. ... You can have a high degree of social freedom, and a high degree of economic freedom without any political freedom. What’s not clear is whether you can have any political freedom if you don’t have some degree of the other freedom” (2002, p. 17). This is the new version of the Friedman Hypothesis.

This paper aims to offer evidence concerning the direction of the trichotomic causation between measures of economic, civil and political freedom, and examines whether Friedman’s New Hypothesis holds in case of South Asian Association of Regional Cooperation (SAARC), using panel data set of five SAARC member countries over 1995-2011 period. South Asia, a region of about 23 percent of global population having only 2 percent of global income, finds itself in the midst of significant economic, political and social transformation since the early 1990s. With this transformation toward more freedom, South Asia has have considerable achievements in terms of overall economic growth at a rate about 5.5 percent for last two decades, which has been much higher compared to earlier two decades.

Far-reaching economic reforms toward more economic freedom in the region have created impulses for growth which have the capacity to unleash the potential that has remained untapped in the region. Though there appears to be a consensus on economic reforms, yet the political realities often resulting in instability and conflict that have acted as a negative influence. States spend enormous time and resources in conflict

<sup>1</sup> Friedman, M., and R. Friedman (1980).

<sup>2</sup> Later published titled *Up for Debate: Reform Without Liberty: Chile’s Ambiguous Legacy; Economic Freedom, Human Freedom, Political freedom* and as ‘Preface’ in *Economic Freedom of the World* (2002 Annual Report).

resolution and encountering instability that deviates from its essential function of providing an enabling environment where basic freedoms, civil freedom and political freedom, are guaranteed.

South Asia has had mixed experiences with political institutions where the state has followed both democratic and authoritarian policies. There is political deprivation and inability of the people participating in the decisions making processes that directly affect them. At one level this leads to a detachment of policy making from the concerns of the people. This also results in a lack of accountability and transparency in governance that further alienates the people from the institutions of governance. Such governance often leads to corruption, political patronage, low observance of rule of law and distorted delivery of public goods and services (Hussain, 2004). During 1990s some SAARC countries have had experience in formal democratization in the form of institutions, but the essence of democracy in terms of the freedoms of the people, civil freedom, has not yet borne fruit. To realize the potential of South Asia, the civil freedom achievement has to be of central concern and this is somehow connected to political right and freedom; and political freedom, as Friedman hypothesis asserts, depends on economic freedom. This paper investigates this trichotomic relationship in case of South Asia.

The paper is structured as follows. Section 2 provides a brief review of the framework of freedom, the association between political-economic-civil freedom. Section 3 discusses the methodological issues and the data. Section 4 presents the results of the causality and regression analysis. The paper is concluded in section 5.

## 2. THE FRAMEWORK OF FREEDOM

Freedoms - Political, Economic and Civil freedoms are the only means by which nations, society and human beings grow and develop. Today's world is full of deprivation, destitution and oppression, as Amartya Sen (2000) pointed out and has emphasized "the role of freedoms of different kinds in countering these afflictions". He is also emphatic that "Expansion of freedom is both the primary end and the principal means of development" (Sen, 2000, p. 12). Therefore it is imperative to know the association between different form of freedom-economic freedom, civil freedom and political freedom.

### 2.1. Association between Economic Freedom and Political Freedom

Economic freedom refers to the quality of a free private market in which individuals voluntarily carry out exchanges in their own interests. In a free private market, individuals have the freedom to choose what to consume, to produce, and to give. The invisible hand leads free economic agents to pursue their own interests and voluntarily cooperate with others (Smith, 1776).

Economic freedom, as discussed by Friedman (2002), has three components - First

and most important is the rule of law, which extends to the protection of property rights. Second is the wide-spread private ownership of the means of production. Third is the freedom to enter or leave industries, to compete, and to trade. The economic freedom provides minimizing government influence over private economic activity, and providing for the rule of law rather than statutory regulations to attenuate economic externalities.

Political freedom means freedom from coercions by arbitrary power including the power exercised by the government. Political freedom equivalent to political rights that *Freedom House* propounded in indexed form. Sufficient political rights allow people to choose their rulers and the way in which they are ruled. Individuals enjoy political rights in a democratic form of government (Przeworski and Limongi, 1997). The minimalist idea associates democracy with free, contested elections, where the government parties can lose the power.

According to Friedman (2002, p. 18) “political freedom is essentially the mode of representation in the political structure, the right to vote, the definition of democracy as the society in which public servants - the people who determine public policy - are chosen by the votes of the citizens.” Democracy helps build better institutions because it works as an efficient meta-institution for eliciting and handling local knowledge hence increases human capital. Democracy, where people enjoy political right or freedom, has eight requirements proposed by Dahl (1971) upon which widely-used measures like Freedom House Indicators are built, that this paper has used in empirical investigation.<sup>3</sup>

It is a historical fact that economic freedom and political freedom are inextricably connected (Friedman, 1962). The association of political and economic freedom is important to understand from both business and economic perspectives and also from a political perspective. If the association is strong enough, corporations looking for external market should look at the democratic country and automatically assume that if political freedom in the county is high, the economic freedom in the country is also high (Griswold, 2004). A core ingredient of economic freedom is private property which is fundament in supporting political freedom. Without secure private property and independent wealth, the exercise of political rights loses its effectiveness. The political perspective of this association reveals that building democracy in a country must also build enough economic freedom to maintain that democracy which according to Lipset (1959) depends on the level of economic development of a particular society: the more developed a society is economically, the greater will be its chance of sustaining democracy.

The association between economic freedom and political freedom have long been

<sup>3</sup> Dahl’s eight requirements for political freedom are: *a.* freedom to join and form organizations, *b.* freedom of expression, *c.* right to vote, *d.* eligibility for public office, *e.* right of political leaders to compete for support and votes, *f.* alternative sources of information, *g.* free and fair elections, and *h.* government policies depend on votes and other expressions of preference.

theorized. However, perhaps due to the tendency to lump the two concepts together, limited empirical evidence exists to support any possible interrelationship. Farr, Lord and Wolfenbarger (1998) find no evidence of causal relationship between economic freedom and political freedom, employing Granger-causality methodology using pooled cross-sectional time series data. Vega-Gordillo and Alvarez-Arce (2003) using Granger-causality analysis find that economic freedom enhances political freedom and at the same time more democratic institutions provide for greater economic freedom. Kirmanoglu (2000) using the same methodology for 19 countries finds no relationship between economic freedom and political freedom for 14 countries in the study. Lawson and Clark (2010) have tested the direction of the causal relationship between economic freedom and political freedom. Using panel data of 123 countries over the period 1970-2005 with five years interval found few instances of relatively high political freedom without relatively high levels of economic freedom. Their study validates the Friedman hypothesis.

## **2.2. Trichotomy between Economic Freedom, Civil Freedom and Democracy**

Friedman hypothesis seems to hold in many cases. Over the period of its existence, capitalism has been relied on by many non-free societies but has enjoyed neither civil nor political freedom. In broad sense civil freedom means the ability of individual to think without interference. The individual is thus at liberty to act as he or she wishes. By civil freedom, Friedman means, freedom of speech, freedom of association, and the freedom to express views which is called human rights. The essence of civil freedom is that people are free to make their own decisions as long as they do not violate others' identical rights. While experience has not contradicted the Friedman hypothesis, still Friedman (1991) has urged "it has persuaded me that the dichotomy I stressed between economic freedom and political freedom is too simple. Even at this broad level, I am persuaded that it is important to consider a trichotomy: economic freedom, civil freedom, and political freedom".

Friedman finds the importance of such distinction observing the case of Hong Kong. Hong Kong has had very high degree of civil freedom and extraordinary degree of economic freedom but never had any political freedom, no democracy. There has been no direct political representation of the people of Hong Kong over whole British rule or in present Chinese rule.

Hong Kong's completely free economy with no tariffs and no import or export quotas, taxes have been very low, few regulations on business, no price controls, no wage controls has made marvelous economic progress. It has been one of the most rapidly growing countries in the world, as Friedman says, a remarkable example of what free markets can do if left unrestricted, an example of how interesting the relationship between economic freedom and political freedom, and civil freedom and political freedom. It, according to Friedman (1991), let to conclude that where the market plays a significant role, whether the society has political freedom or not, civil freedoms are more

widespread and more extensive than where the market does not play any role.

### 3. THE METHODOLOGY AND DATA

#### 3.1. Granger Causality Tests

Since the purpose of this paper is to offer evidence concerning the direction of causation between measures of economic freedom and political freedom, and civil freedom and political freedom to examine the Friedman Hypothesis, the study first tests for the causalities. The issue of causality is at the foundation of any study that examines an economic relationship. The Granger causality test provides sufficient explanation of the possible connections among variables.

This study employs Granger-causality tests methodology to test for the relationship between economic freedom and political freedom, and civil freedom and political freedom. It allows for tests to determine if economic freedom (EF) Granger-cause political freedom (PF) and/or inversely political freedom (PF) Granger-cause economic freedom (EF), to determine if civil freedom (CF) Granger-cause political freedom (PF) and/or inversely political freedom (PF) Granger-cause civil freedom (CF) and also to determine if civil freedom (CF) Granger-cause economic freedom (EF) and/or inversely economic freedom (EF) Granger-cause civil freedom (CF).

A formal test for Granger-causality running from EF to PF is

$$PF_t = a_1 + \sum_{j=1}^t b_j PF_{t-j} + \sum_{k=1}^t g_k EF_{t-k} + v_t. \quad (1)$$

A formal test for Granger-causality running from PF to EF performed using a symmetrical test is

$$EF_t = a_2 + \sum_{l=1}^t e_l EF_{t-l} + \sum_{m=1}^t g_m PF_{t-m} + \omega_t. \quad (2)$$

A formal test for Granger-causality running from CF to PF is

$$PF_t = \alpha_1 + \sum_{i=1}^t \beta_j PF_{t-i} + \sum_{n=1}^t \theta_n CF_{t-n} + \mu_t. \quad (3)$$

And symmetrically PF to CF is

$$CF_t = \alpha_2 + \sum_{q=1}^t \phi_q CF_{t-q} + \sum_{r=1}^t \theta_r PF_{t-r} + \psi_t. \quad (4)$$

A formal test for Granger-causality running from CF to EF is

$$EF_t = \tau_1 + \sum_{p=1}^t \eta_p EF_{t-p} + \sum_{h=1}^t \delta_h CF_{t-h} + \varepsilon_t. \quad (5)$$

And symmetrically EF to CF is

$$CF_t = \tau_2 + \sum_{f=1}^t \rho_f CF_{t-f} + \sum_{s=1}^t \delta_s EF_{t-s} + \kappa_t. \quad (6)$$

A finding that only one of the two relationships is true provides support for a unilateral line of causation. However, if both are found to be true, support for a bilateral (or jointly determined) relationship is provided. If neither relationship is found to exist, the assumption is made that the two variables are unrelated and no empirical relationship can be justified.

The results from Granger-causality tests should only be interpreted as showing that prior changes in one variable added (or do not added) significantly explains the future value of another variable (Farr, Lord and Wolfenbarger, 1998). However, these Granger results do provide valuable information that can aid in the development of new theories or in the refinement of existing theories.

Based on the results provided by the Granger-causality tests, this study draws an empirical relationship between the variables concerned. Since the interest of the study is in testing the Friedman hypothesis, results that would suggest empirical relationship between political freedom (PF) and economic freedom (EF) and/or between civil freedom (CF) and political freedom (PF) and/or between civil freedom (CF) and economic freedom (EF), the focus will be on political-economic freedom relationship.<sup>4</sup> In running such empirical relationship a control variable - per-capita gross domestic product (PGDP) included in the model. By controlling for PGDP, the study can find how much the wealth of nation actually affects the relationship between political freedom and economic freedom. Following a number of studies (e.g., Shen, 2002; Minier, 1998; Barro, 1996) this has been chosen as it influences the relationship between political freedom and economic freedom. Therefore, taking in log linear form for panel of *i*-countries and adding time subscripts (*t*) and an error term ( $\varepsilon_{it}$ ) the empirical model of

<sup>4</sup> Since empirical investigation of the relationship between political freedom and civil freedom has not yet been formal and developed. Such empirical investigation will be done in future.

the study is

$$\ln PF_{it} = \alpha_{0i} + \beta_1 \ln EF_{it} + \beta_2 \ln PGDP_{it} + \varepsilon_{it}, \quad (7)$$

where EF = Economic Freedom, and PGDP = Per capita GDP.

### 3.2. Dynamic Panel Data Analysis

The dynamic panel data analysis starts with the test of stationarity of variables of the model using panel unit root test procedures. When all the variables in the model are stationary then traditional methods can be used to estimate the model. If, however, at least one of the series turns out to be non-stationary then more care is needed. In this case, to infer the long-run relationships among the variables some form of cointegration test is required. If the existence of cointegration is confirmed, then dynamic model with panel data estimation techniques have been applied. In recent years some tests for unit roots and co-integration within panels are developed. In this study the tests are based on some of the popular techniques.

#### 3.2.1. Panel Unit Root Tests

It has been suggested that if there is considerable longer time span in the panel data then the variables under consideration might be non-stationary, and thus a simple OLS estimation may end up with spurious results (Kao, 1999). Therefore, the variables of the model are needed to be checked for stationarity since panel database with a time span of 17 years has been used in the study.

Several unit root tests for panel data have been proposed in econometric literature. Popularly used five types of panel unit root tests are: Levin, Lin and Chu (2002), Breitung (2000), Im, Pesaran and Shin (2003), and Fisher-type tests using Augmented Dickey-Fuller test and Philips-Peron test (Maddala and Wu, 1999; Choi, 2001).

Panel unit root tests are similar to unit root tests carried out on a single time series. Recent literature suggests that panel-based unit root tests have higher power than unit root tests based on individual time series. While the tests proposed are commonly termed “panel unit root” tests, they are simply multiple-series unit root tests that have been applied to panel data structures, where the presence of cross-sections generates “multiple series” out of a single series.

To provide empirical analyses of the tests, let us consider the following AR(1) process for panel data:

$$y_{it} = \rho_i y_{it-1} + X_{it} \delta_i + \varepsilon_{it}, \quad (8)$$

where  $i = 1, 2, \dots, N$  cross-section units or series, that are observed over periods  $t = 1, 2, \dots, T$ .



The  $X_{it}$  represent the exogenous variables in the model, including any fixed effects or individual trends,  $\rho_i$  are the autoregressive coefficients, and the errors  $\varepsilon_{it}$  are assumed to be mutually independent idiosyncratic disturbance. If  $|\rho_i| < 1$ ,  $y_i$  is said to be weakly (trend) stationary. On the other hand, if  $|\rho_i| = 1$ , then  $y_i$  contains a unit root.

For purposes of testing, there are two natural assumptions that can be made about the  $\rho_i$ . First, it can be assumed that the persistence parameters are common across cross-sections so that  $\rho_i = \rho$  for all  $i$ . The Levin, Lin, and Chu (LLC) and Breitung tests employ this assumption. This class of unit root tests are called ‘Common unit root’ test which indicates that the test are estimated assuming a common AR structure for all of the series. Alternatively, it can allow  $\rho_i$  varying freely across cross-sections. The Im, Pesaran, and Shin (IPS), and Fisher-ADF and Fisher-PP tests are of this form. This second class of test is called ‘Individual unit root’ test which is used for tests that allow for different AR coefficients in each series. Most of the proposed panel unit root tests are derived under the hypothesis that the error terms are non-contemporaneous correlated. When this hypothesis is rejected, the asymptotic distributions of these tests are no longer consistent.

### 3.2.2. Panel Cointegration Tests

The developments of non-stationary panel data analysis have found procedures allowing tests of co-integration on panel data. Different methods of testing cointegration in panel data setting have been focused in recent literature. There are different methods for testing co-integration in panels, which would be divided into two groups. The first group takes the null hypothesis of no co-integration and uses residuals derived from the panel regression of Engle and Granger (1987) method. Pedroni (1999, 2004) and Kao and Chiang (1999) panel co-integration tests are based on this method. Also, the works of Maddala and Wu (1999) have allowed rank tests of cointegration in multivariate framework, by extending the Johansen and Juselius (1990) tests of co-integration in the case of panel data and has formulated Fisher-type test using an underlying Johansen (1995) methodology. All the panel co-integration tests allow for heterogeneity in the co-integrating coefficients.

The study is based on two methods for testing and estimation mentioned earlier. *First*, Pedroni (1999, 2004) cointegration test from the first group which is residual based and can thereby be seen as multivariate generalizations of the Augmented Engle-Granger tests. *Second*, Fisher-type test from the later group which is a maximum likelihood-based and employs a panel-vector-error-correction model setting that can be seen as a generalization of the Johansen (combined Johansen-Fisher) methodology as proposed by Maddala and Wu (1999).

### 3.2.3. Estimation of Dynamic Panel Data

The empirical model has been estimated using dynamic panel data econometric technique. Models with a panel data set can be estimated in different ways, which has both merits and demerits. Following Reilly and Witt (1996), Cosar (2002), Haddad (2005) and Raihan (2007) this study uses the ‘Unrestricted Error Correction Mechanism’ (UECM) because of its advantage in separating the short-run and long-run effects. With the existence of cointegration established, the model of this study in Equation (7) and (8) are re-parameterized as an error correction model (ECM) to estimate a model for improve forecasting. In time-series econometrics, one convenient way of modeling the long-run and short-run effects, without imposing any restriction on the relationship between short-run and long-run responses, is through the use of an ‘unrestricted error correction mechanism’ (UECM) model (Alogoskoufs and Simth, 1991). This paper therefore applied the same for panel data setting.

The cointegrating equations are generally interpreted as the long run equilibrium relationships characterizing the data, with the error correction equations representing the short-run adjustment towards such equilibria. The error correction model alone can also make direct inference both about the long-run and the short-run relationships. If there is cointegration in equation, the Vector Autoregressive (VAR) will need to include error correction term involving levels of the series, and this term will appear on the right-hand side of each of the VAR equations, which otherwise will be in first difference as in Equation (9).

Given the existence of the cointegration relationship between variables in the model, the Engle and Granger three-step method can be applied to estimate the model using UECM. According to Engle and Granger (1987), if the variables are cointegrated, the stable long-run relationship can be estimated by standard least-squares techniques. For panel regression, panel econometric techniques, like fixed effect estimator would be applied. In the first step of Engle and Granger method, the regression Equation (7) is estimated to obtain the long-run coefficients  $\alpha_{0i}$  and  $\beta_i$ ’s .

In the second step, stationarity of the residuals of the estimated equations are tested by the panel unit root test, according to which the residual of the models has to be stationary, applying panel unit root tests to proceed to the third step.

Since panel unit root tests and cointegration tests give evidence in favour of cointegration relationship between variables of the model, based on above two-step results, following error correction model is to be estimated in a panel framework in the final step.

$$\begin{aligned} \Delta \ln PF_{it} = & \gamma_i + \beta_3 \Delta \ln EF_{it} + \beta_4 \Delta \ln PGDP_{it} \\ & + \lambda [\ln PF_{it} - \alpha_{0i} - \beta_1 \ln EF_{it-1} - \beta_2 \ln PGDP_{it-1}] + u_{it}. \end{aligned} \quad (9)$$

The coefficient of the error-correction terms,  $\lambda$ , represents the speed of adjustment

to the long-run relationship estimated in the first step, the part in parenthesis of Equation (9). In the panel framework, this model can be estimated using the fixed-effects model. In order to allow for lagged adjustment, lagged dependent variables of regressors both in the long-run and the short-run equations are allowed. The coefficients  $\alpha_{0i}$  and  $\gamma_i$  in Equations (7) and (9) are different for each individual country, whereas all  $\beta_i$ 's are the same for all countries due to fixed effects modelling.

### 3.3. The Data

Three core variables used in this study are index of economic freedom, index of civil liberty or civil freedom and index of political right or political freedom. The Economic Freedom index that this study has used is propounded jointly by The Heritage Foundation and the Wall Street Journal which have tracked the march of economic freedom around the world. Data on this index is available for the period from 1970 to 1995 with five-year interval and annual data is available for 1996-2011 period. The index of economic freedom of each country is the average of ten components of economic freedom, assigning a grade in each on a 0-100 scale with higher values indicative of higher levels of economic freedom. Here the chain-linked version of the index used as it is the most consistent series over time. Since this index has the most complete and largest annual longitudinal data base available, the study uses the index over 1995-2011 period for each of the five SAARC countries under study.

Freedom House has produced indexes of political rights and civil liberties annually since 1972. This study chooses the political right index as the measure of political freedom. The civil liberty index is taken to measure the civil or social freedom. The indexes are measured on a 1-7 scale with lower values indicative of higher levels of political right (or political freedom) and civil liberty (or civil freedom). The Freedom House index is criticized for its subjective nature, but is still used for empirical studies. Other measures of democracy exist but Freedom House index has the advantage of going back in time far enough to match up with the index of economic freedom.

The data set used in this study is the Index of Economic Freedom and Freedom House scores for 1995-2011 period for South Asian Association for Regional Cooperation (SAARC) member countries. Data on these three indexes are not available for two SAARC countries - Bhutan and Maldives. Hence the empirical study has been done on rest five countries- Bangladesh, India, Nepal, Pakistan and Sri Lanka. The other variable used in the study is per capita real GDP (PGDP). Data on per capita real GDP for each country is collected from World Economic Outlook database of the International Monetary Fund (IMF).

#### 4. EMPIRICAL RESULTS

##### 4.1. Results of the Granger Causality Tests

The results of the Granger-causality tests of the trichotomic relationship between political freedom (PF) and economic freedom (EF); political freedom (PF) and civil freedom (CF); and economic freedom (EF) and civil freedom (CF) in both directions are presented in Table 1. The value of the F-statistics do not reject the null hypothesis of ‘ln\_EF does not Granger Cause ln\_CF’ and ‘ln\_CF does not Granger Cause ln\_EF’ at 5% level, even at 10% level. It means there is no causal relationship between economic freedom and civil freedom.

**Table 1.** Result of the Granger Causality Tests between EF, CF and PF

Null Hypothesis	Obs	F-Statistic	Prob.
LN_CL does not Granger Cause LN_PF	80	1.99	0.16
LN_PF does not Granger Cause LN_CL		9.36	0.00
LN_EF does not Granger Cause LN_PF	80	5.15	0.02
LN_PF does not Granger Cause LN_EF		0.04	0.83
LN_EF does not Granger Cause LN_CL	80	0.21	0.64
LN_CL does not Granger Cause LN_EF		0.08	0.77

The value of the F-statistics rejects the null hypothesis of ‘ln\_EF does not Granger Cause ln\_PF’ at 5% level, but does not reject the null hypothesis of ‘ln\_PF does not Granger Cause ln\_EF’. It means that there is unilateral Granger-causality between economic freedom and political freedom. This result justifies the Friedman hypothesis in case of SAARC countries.

In finding the causality between civil freedom and political freedom, value of the F-statistics rejects the null hypothesis of ‘ln\_PF does not Granger Cause ln\_CF’ at 5% level, even at 1% level but does not reject the null hypothesis of ‘ln\_CF does not Granger Cause ln\_PF’. It means that there is unilateral Granger-causality between civil freedom and political freedom. That is, political freedom brings in more civil freedom in SAARC region. This result does not validate Friedman’s assertion in SAARC countries that there can not have political freedom without some degree of civil freedom. The result matches with the idea of Panandiker and Tripathi (2005) that civil freedom is not found to be a driving factor behind political democracy and freedom in this region, rather democracy becomes an instrument to enhance the civil freedom in South Asian region.

#### 4.2. Results of Panel Unit Root Tests

In this study a number of panel unit root test are undertaken to check the stationarity of the variables under consideration. For this purpose several unit root tests have been applied to reach to a more conclusive result regarding the stationarity of the variables. There are strengths and weaknesses of different unit root tests and therefore it is evident from various studies that unit root test results in many cases can be inconclusive. Thus one single unit root test may not be enough to draw any firm conclusion regarding the stationarity of variables of the model to be estimated. To check the stationarity of the concerned variables, this study has undertaken a number of panel unit root tests. Table 2 presents the summery statistics of four unit root tests - Levin, Lin and Chu (LLC) test, Im-Pesaran-Shin (ISP) test, ADF-Fisher Chi-square test and PP-Fisher Chi-square test.

**Table 2.** Unit Root Tests on the Variables of the Model at Level and First Difference

Tests	ln PF	$\Delta$ ln PF	ln EF	$\Delta$ ln EF	ln PGDP	$\Delta$ ln PGDP
Levin, Lin & Chu t*	-0.04 (0.48)	-5.57 (0.00)	-0.24 (0.40)	0.99 (0.07)	6.79 (1.00)	-2.05 (0.02)
Im, Pesaran & Shin W-stat	0.19 (0.58)	-5.57 (0.00)	-1.29 (0.10)	-2.17 (0.02)	7.83 (1.00)	-0.93 (0.03)
ADF- Fisher Chi-square	6.17 (0.63)	40.23 (0.00)	16.49 (0.09)	21.22 (0.02)	0.02 (1.00)	14.99 (0.13)
PP - Fisher Chi-square	6.444 (0.59)	40.97 (0.00)	34.35 (0.00)	71.95 (0.00)	0.03 (1.00)	18.48 (0.05)

*Note:* (a) The null hypothesis states that there is a unit root. (b) The critical  $p$ -values are reported in parentheses.

The null of non-stationarity or unit root is tested with lag length automatically selected by Schwarz Information Criterion (SIC). Since the Granger-causality results suggest unidirectional empirical relationship between political freedom and economic freedom and confirm the Friedman Hypothesis that the economic freedom causes political freedom, therefore as mentioned earlier, the paper focuses on their relationship presented by the model of Equation (7). Accordingly, unit root tests have been performed for the variables of the model political freedom (ln\_PF), economic freedom (ln\_EF) and per capita GDP (ln\_PGDP); and all four tests show existence of unit roots at level with intercept. All tests do not reject the hypothesis of unit root at 5% level of significance, except ADF-Fisher Chi-square test for economic freedom (ln\_EF). Therefore, from the unit root tests statistics, it can be concluded that, most of the tests provide evidence in favour of the presence of unit roots in all the variables under consideration. That is, all the variables are non-stationary in levels.

To check the order of integration of these non-stationary variables, the unit root tests

have been performed at their first differences. It is important because if variables are of a different order of integration then special care is needed to find out valid relationship among those variables. If a series has to be differenced  $d$  times in order to get stationarity, then it is integrated of order  $d$  or  $I(d)$ .

Table 2 also reports the results of the unit root tests of all three non-stationary variables in their first differences. Results indicate that for all three variables four unit root test statistics reject the null hypotheses of unit roots at 5% level of significance, except  $\Delta \ln\_PGDP$  by the ADF-Fisher Chi-square test and  $\Delta \ln\_EF$  by the Levin-Lin-Chu (LLC) at 7% level. It is generally considered that the IPS tests are more powerful in detecting unit roots in panel data set than the Levin-Lin-Chu (LLC) and ADF-Fisher Chi-square tests (Raihan, 2007). Therefore, it can be concluded that all the variables are stationary in their first differences and they are integrated at order one,  $I(d)$ . That is, they are non-stationary in their levels but stationary in their first differences.

### 4.3. Results of the Panel Cointegration Tests

As in the case of panel unit root tests, several panel cointegration tests have been applied, because different panel cointegration tests may produce conflicting outcomes, and therefore, the results in many cases can be inconclusive. This indicates that one single panel cointegration testing may not be enough to draw firm conclusion regarding the cointegration among variables in the models under consideration (Raihan, 2007).

Table 3 reports the different Pedroni cointegration tests results and Table 4 reports the combined Johansen Fisher Unrestricted Cointegration Rank test results. The specifications of individual intercept include individual fixed effects and an individual intercept. The optimum lag of the tests is automatically determined using the Schwarz information criterion (SIC). Four types of Pedroni cointegration tests of the model for within-dimension (weighted and un-weighted) and three types of between-dimension are reported in Table 3. It is evident from the results that six of the eleven Pedroni test statistics reject the null hypothesis of 'no cointegration' of the model at 1% level of significance.

Table 4 reports the combined Johansen Fisher panel cointegration tests result to determine the number of the cointegrating vectors using both the Trace test and the Maximum Eigen value test. From these tests it is evident that the null hypothesis of no cointegrating relationship between variables of the model is rejected and traces more than one cointegrating equations.

From panel cointegration tests performed, it is evident that, except few cases, the results of the Pedroni tests indicate the existence of cointegration for the model. The combined Johansen Fisher tests suggest that the model is cointegrated. It is, therefore, concluded that the model (7) is cointegrated implying the existence of long-run relationship among the variables.

**Table 3.** Pedroni Residual Panel Cointegration Tests

	Un-weighted		Weighted	
	Statistic	Prob.	Statistic	Prob.
<i>Within Dimension</i>				
Panel v-Statistic	0.83	0.20	0.78	0.21
Panel rho-Statistic	-0.08	0.47	-0.27	0.39
Panel PP-Statistic	-3.52	0.00	-4.05	0.00
Panel ADF-Statistic	-5.07	0.00	-5.71	0.00
<i>Between Dimension</i>				
Group rho-Statistic	0.49	0.69		
Group PP-Statistic	-7.50	0.00		
Group ADF-Statistic	-6.47	0.00		

**Table 4.** Johansen Fisher Panel Cointegration Test Result

Hypothesized No. of CE(s)	Fisher Stat.* (from trace test)		Fisher Stat.* (from max-eigen test)	
	Prob.	Prob.	Prob.	Prob.
None	38.93	0.00	24.03	0.00
At most 1	22.67	0.00	21.63	0.01
At most 2	9.53	0.30	9.53	0.30

Note: \* Probabilities are computed using asymptotic Chi-square distribution.

#### 4.4. Results of the Unrestricted Error Correction Model (UECM)

Since there is cointegration relationship between variables in the model, following Engle and Granger (1987) three-step procedure the model is estimated using Unrestricted Error Correction Mechanism (UECM). Following Engle and Granger (1987) first step the fixed effect estimation result gives the long-run estimates which is presented in Table 5 and the short-run estimation results from the final step is given in Table 7.

The long-run estimators in Table 5 give the panel regression equation as follows:

$$\ln PF_{it} = \alpha_{0i} + \beta_1 \ln EF_{it} + \beta_2 \ln PGDP_{it} + \varepsilon_{it},$$

$$\ln PF_{it} = 5.98 - 1.41 \ln EF_{it} + 0.14 \ln PGDP_{it}. \quad (10)$$

(3.37) (-3.19) (2.08)

In the second step, stationarity of the residuals of the estimated equations are tested by the panel unit root tests. Applying five panel unit root tests the results of the residual of the estimated Equation (10) presented in Table 6 which shows that the residual of the model is stationary.

**Table 5.** Long-run Estimates of the UECM  
(Dependent Variable: LN\_PF)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LN_EF	-1.41	0.443	-3.185	0.002
LN_PGDP	0.14	0.065	2.082	0.040
C	5.98	1.775	3.370	0.001
R-squared	0.677	Mean dependent var		1.215
Adjusted R-squared	0.652	S.D. dependent var		0.357
S.E. of regression	0.210	Akaike info criterion		-0.199
Sum squared resid	3.456	Schwarz criterion		0.001
Log likelihood	15.490	Hannan-Quinn criter.		-0.118
F-statistic	27.331	Durbin-Watson stat		0.636
Prob(F-statistic)	0.00			

**Table 6.** Result of the Residual Unit Root Tests of the Long-run Model  
(Panel Unit Root Test: Summary / Series: RESID)

Method	Statistic	Prob.**	Cross-sections	Obs
Levin, Lin & Chu t	-14.33	0.000	5	79
Im, Pesaran and Shin W-stat	-9.75	0.000	5	79
ADF - Fisher Chi-square	274.51	0.000	5	79
PP - Fisher Chi-square	273.65	0.000	5	80

*Note:* \*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

**Table 7.** Short-run Estimate of the UECM  
(Dependent Variable: D(LN\_PF)/ Total Panel (balanced) Observations: 80)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LN_EF)	-0.90	0.321	-2.789	0.007
D(LN_PGDP)	-0.47	0.238	-1.975	0.052
RESID	-0.32	0.088	-3.576	0.001
C	0.03	0.023	1.476	0.144
R-squared	0.222	Mean dependent var		0.001
Adjusted R-squared	0.191	S.D. dependent var		0.163
S.E. of regression	0.147	Akaike info criterion		-0.942
Sum squared resid	1.651	Schwarz criterion		-0.823
Log likelihood	41.710	Hannan-Quinn criter.		-0.895
F-statistic	7.234	Durbin-Watson stat		1.678
Prob(F-statistic)	0.000			



With the existence of cointegrating relationship between variables of the model and based on Engle-Granger two-step results above, the error correction model estimated in panel framework is

$$\Delta \ln PF_{it} = \gamma_i + \beta_3 \Delta \ln EF_{it} + \beta_4 \Delta \ln PGDP_{it} + \lambda [\ln PF_{it} - \alpha_{0i} - \beta_1 \ln EF_{it-1} - \beta_2 \ln PGDP_{it-1}] + u_{it},$$

$$\begin{aligned} \Delta \ln PF_{it} = & 0.03 - 0.90 \Delta \ln EF_{it} - 0.47 \Delta \ln PGDP_{it} & (11) \\ & (1.48) \quad (-2.79) & \quad (-1.98) \\ & - 0.32 [\ln PF_{it} - 5.98 + 1.41 \ln EF_{it} - 0.14 \ln PGDP_{it}]. \\ & (-3.58) & \quad (3.37) \quad (-3.19) & \quad (2.08) \end{aligned}$$

The estimated Unrestricted Error Correction Model (UECM) of Equation (10) and Equation (11) respectively presents the long-run and the short-run relationship between political freedom and the economic freedom and the GDP in the SAARC region. Values in parentheses represent the *t*-statistics for the respective coefficients.

In both the long-run and the short-run, the signs of the coefficients of economic freedom ( $\ln EF$ ) are, as expected, negative since high value of political right denoting low level of political freedom. The highly significant value of the short-run and long-run coefficients of  $\ln EF$  imply that more economic freedom bring in more political freedom in SAARC countries. Economic freedom have both immediate effect (short-run) in improving the political Freedom as well as long run effects in promoting democratic political structure in countries in this region.

The sign of the short-run coefficient of per capita GDP ( $\Delta \ln PGDP$ ) is as expected negative and significant at 5% level. That is, the increase in per capita GDP (as proxy for wealth of nation) led to improved political freedom in the short-run, as increasing solvency of the people immediately would put more pressure to democratize the nation.

The highly significant and positive coefficient of  $\ln PGDP$  in the long-run gives an unexpected and unusual indication of the effect of wealth of nation on political freedom in SAARC region. The positive value of the coefficient of  $\ln PGDP$  means, with the increase in per capita GDP political freedom deteriorates in SAARC countries in the long-run. Historical data shows high growth in countries under study accompanied higher level of democratization. But the empirical results finds that growth was not an influential factor behind this democratization, rather the economic reforms toward higher economic freedom pursued in brining political democracy and freedom in this region. The long-run elasticity of economic freedom (EF) on political freedom (PF) is 1.41 while the elasticity of per capita GDP (PGDP) on political freedom (PF) is 0.14. That is, increase in per capita GDP deteriorates political freedom at a lower rate, whereas economic freedom improves political freedom at a higher rate. It reveals that countries adopted more free economic policies which have had higher impact on

political democratization, off-setting negative effect of growth on political freedom in the long-run.

The coefficient of the error correction term  $\lambda$  (denoted as RESID in Table 7 which is residual of the long-run equation) has the correct negative sign, is highly significant ( $p = 0.00$ ) and lower than 1 in absolute value (-0.32). This confirms a valid representation of the error correction mechanism. The coefficient of the error correction term suggests a reasonable rate of adjustment to the long-run steady state relationship from any short-run deviation, 32% of the disequilibrium errors are corrected within just one year.

## 5. CONCLUSION

Friedman hypothesis holds that economic freedom is a necessary condition for political freedom. Later version of the hypothesis includes civil freedom. In recent years interest has grown in this hypothesis leading to a number of studies on the interrelationship between different freedoms. This paper tests the Friedman new hypothesis using data pertaining to five SAARC countries. The empirical results show that political freedom Granger-causes civil freedom and economic freedom Granger-causes political freedom. No relationship between economic freedom and civil freedom is evident. The empirical result shows that Friedman hypothesis regarding political, civil and economic freedom does not stand up fairly well in the SAARC region. There is an instance of combining high level of political freedom with high levels of economic freedom but no instance of civil freedom found without some degree of political freedom in this region.

The empirical model of political freedom on economic freedom, and a control variable per capita GDP shows that economic freedom has expected positive effect on political freedom both in the short run and long run. However, while per capita GDP has expected positive effect on political freedom in the short run, in the long run it has negative effect on political freedom in South Asia, which is not so usual to expect. This is because the democratization that is observed in some of the SAARC countries with economic growth is the institutional democracy- existence of constitutional provisions relating to fundamental freedoms such as right to equality, freedom of expression etc., but not the democracy and political freedom in practice. Governments have often failed in their ability to uphold some of their basic responsibilities for ensuring political right and freedom.

The low level of political freedom results in a low level of civil freedom. The states follow mixed economic policies, inconsistent combination of regulation and liberalization in different economic sectors. To realize the potential of SAARC countries, the economic freedom achievement has to be of central concern on which political freedom and hence civil freedom depends as this study found. Countries in this region should ensure people's participation in the decision making processes which would lead to an equitable access to public goods and services and gradually open room for civil

freedom and liberty. So to ensure the ‘government of the people, by the people and for the people’ in SAARC countries, economic freedom is required first.

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