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Impact of Political Stability, Government Effectiveness and Control of Corruption on Stock Markets of South Asia

Abstract

This study explores the relationship between political stability, government effectiveness and corruption on stock market performance using the panel VECM model for South Asian countries from 1989 to 2015. In order to determine, the directional relationship, the Granger Causality test is being employed; however, Impulse response functions and forecast error variance decomposition are used to assess the stability of the relationship among projected variables over the time. Study findings suggest a strong positive relationship between control of corruption, government effectiveness, political stability and stock market performance. Policy recommendation for the South Asian nations could be condensed i.e. control on corruption, enhance government effectiveness, keep away from frequencies of violence and political instability that send wrong flags to universal investors, and keep up sound regulation quality. The most significant contribution of the study is its emphasis on quality of governance determinants and stock market performance of the South Asian economies.

Keywords: Panel VECM, Political Stability, Corruption, Stock Market Performance, Government Effectiveness.

Introduction

The performance of stock market is a most important element for judgment of financial condition of the country. According to the Stringham , Boettke and Clark (2008) stock market development has influence on economic and financial growth of the country. Normally it is consider that stock prices affect from predictable future cash flows produced by asset of the company .

In the meantime of last decade, researchers explore many factors that have influence on the performance of the stock market like inflation and deflation, exchange rate, gold prices, interest rate, trends of foreign markets, money supply and many other macroeconomic variables. While there are many other factors exist which also affect stock market performance like determinants of quality governance of the country. The risk of political events, Government policies and

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corruption continuously exist in developing countries due to unsound political situations and this affects to stock market in developing countries (shahid, 2014).According to Zhou et al., (2014) and Aggarwal et al., (2002) managers are unwilling to invest in the stock market of those countries which have political instability, poor standards of corporate governance. Therefore, improved domination situations can increase shareholders' returns through decreasing transaction costs and agency costs . The core idea is to develop the stock market that depends on suitable policies which are the result of better governance. Consequently, it is significant to recognize institutional elements that endorse the performance of south Asian stock markets.

Capital market development is a very important for the development of economy; there are very little studies available regarding quality governance and that stock market dynamics. This study discovers how policies (control of corruption, government effectiveness and political stability) effect to performance of stock market in south Asian economies.

The core input of this study in the literature is to explore the impact of government effectiveness, corruption and political stability on growth of stock markets concentrating exclusively on south Asian countries. The rest of paper is structure as ,in second section of paper literature review is discussed, while section three consist of data and methodology and chapter four and five results analysis and conclusion respectively .

Literature Review:

In the previous studies, lot of work is done to explore the association among stock prices and macro-economic variables corresponding to gold prices, inflation, exchange and interest rate etc. But political aspects are also having high rank in direction to affect the movements of Stock Market. In this research indication from south Asian countries is collected to explore whether government qualities, political stability and other governmental factors effect to stock prices or not and how much the variable affect the decisions of investors.

According to the Manzoor, (2013) political events depend upon the government stability, which means to provide positive environment for the local residences and all the activities performed in the law. Favorable environment through political stability gives the opportunity to the investor because they feel low risk in the financial market of the country. Further, study identified that political events have direct link with the fluctuation in the stock prices. Furthermore Murtaza and Ali (2013) elaborated the impact of political stability on stock market, they investigated that stock return and trade volume has negative association after the attack on Sri Lank cricket team. Furthermore researcher concluded that the stock market has direct link with positive or negative political events. Both events have significant influence on stock market prices.

Syed et al., (2005) examined that investors contemplate political risk as a verbalizing feature for estimating asset value which is similarly authoritative for examining the opportunity of investment. Beaulieu and Caron, (2005) examined that return on common stock of Quebec companies has positive relation with

political stability. Kelly et al., (2009) explored that return and trading of stock fluctuate according to political stability either negatively or positively.

Lee and Ng, (2006) explored the effect of government qualities, stock market governance on stock market performance. The results of this study showed that upgrading and better implementation of market governances contribute to enhance liquidity in capital market and capital market growth. This indication proposes adverse association between governance and risk, i.e., improved governance leads to minimization of risk. This is the reason that investors would require high rate of return on equity in poorly governed stock markets for bearing greater risk.

Love, (2010) delivers a worthy analysis on corporate governance and capital market growth around the world. The results of also propose that political stability and efficient legal enforcement considered by excellence lawful system, suitable investor defense and low tendency of corruption lead to improvement in capital market. Li and Filer, (2007) found that those countries that have improved property rights safeguard, balanced and clear legal systems tend to attract more equity investors. Moreover Fan, Fui and Zhao ,(2008) put forward their views that firm in poor governance countries have higher transaction and agency costs as compare to those that have good governance structure countries. Higher costs demotivate to investors for investments so poor government qualities and governance negatively effect to stock market growth.

There are two types of argues about corruption in the existing literature while most researchers agreed that corruption has negative impact on stock market, some researchers claim that corruption is a motivating factor for economic growth. According Brooks, (2016) corruption has positive impact on stock market growth. Ahlin and Pang (2008) argues that corruption increases the liquidity and liquidity leads to financial development. Moreover a study also found that corruption and stock market development has a positive association

Corruption effect to FDI positively and FDI have positive impact on stock market growth. Through corruption private firms can overcome unproductive regulations . Moreover, Chene (2014) claims that institutional weaknesses can overcome through corruption in those countries that have poor governance and ineffective government.

In comparison, a large number of researches proposed that corruption and stock market development negatively associate. Daouk et al., (2006) argues that stock market growth negatively affect by corruption through manipulating FDI. Further they claimed that corruption negatively effects to economic growth because it reduced the competition in stock market. Furthermore, corruption makes difficult and expensive to conduct overseas operations through attaining permits and licenses. According to Wei (2000) , Lamsdorff (2003) and Voyer and Beamish (2004) there is a negative impact of corruption on foreign Direct investment. Some researches proposed that stock market growth effect asymmetrically by corruption on the basis of country's conditions, i.e., whether developed or developing.

Zhu et al., (2012) recommended that in underdeveloped counties, corruption is probable increase to firm growth whereas in those countries that have developed stock market, it effect firm’s growth negatively Same as Pinheiro, (2010) found that, in developed economies, stock market inversely affect by corruption while, corruption has positive impact on stock market in emerging countries. Lee and Ng (2006) argues that corruption reduce stock prices by increasing the borrowing cost of the firm, ultimately stock prices effect to stock market growth. Only Stock market growth does not effect by corruption but also effect volatility. Pastor and Veronesi (2012) claimed that investor can overcome uncertainty about government policies if investors consider inducement as a source for organizations especially in developing markets.

Hypothesis

H₀: There is no significant association between control of corruption and stock market performance.

H₀: There is no significant association between government effectiveness and stock market performance.

H₀: There is no significant association between political stability and stock market performance.

Data sources and methodology

Study at hand employed 4 variables as (Political stability, Government effectiveness, control of corruption, and stock market capitalization). Annual panel time series data is collected from two different well-known sources ICRG¹ and FRED² during 1989 to 2015. This study purposed stock market performance as dependent variable, while Political stability, Government effectiveness and control of corruption as an independent variable. In the literature, different studies generally utilized these variables (Aggarwal et al., 2002; Nguthi, 2013; Manzoor, 2013 and Arzu, 2011). The functional form of the model is specified as in the subsequent:

$$SMP = f(CC, GE, PS)$$

Table 3.1 Variables description and data source

Variable	Description	Units	Source
<i>SMP</i>	Stock market Performance	Total share % of GDP	FRED
<i>PS</i>	Political Stability	Index	ICRG
<i>GE</i>	Government Effectiveness	Index	ICRG
<i>CC</i>	Control of Corruption	Index	ICRG

¹Federal Reserve Bank of St. Louis

² The International Country Risk Guide includes a Political Risk Index

Econometric Model

PVECM is being utilized to examine long run association among control of corruption, government effectiveness, political stability and stock market performance for the South Asian economies as follows.

$$\ln SMP_{it} = \beta_0 + \beta_1(\ln CC_{it}) + \beta_2 (\ln GE_{it}) + \beta_3(\ln PS_{it}) + \mu_{it}$$

SMP = Stock market performance

I =Country in the panel

PS = Political stability

t =Time period

GE = Government effectiveness

$\beta_1, \beta_2, \beta_3$ = sloops of coefficients

CC = Control of Corruption μ

μ = Error term

Panel Unit root test

To investigate cointegration existence panel unit root test is being employed, according to Canning and pedroni (2008) panel data shows time series nature if each cross section comprises 20 years’ data, while time series data normally found non-stationary, hence to avoid from spurious regression unit root is most important. There are different panel unit root method available but study at hand only employ Levin and Lin (1992, 1993) and, Pesaran and Shin (2003) .According to Slamon et al., (1987) the LLC unit root test considers heterogeneity of various cross sections, serial correlation but LLC has low power in small sample size. However, to overcome LLC unit root tests limitation, IPS test is used which consider heterogeneity of various cross sections, serial correlation, and work well even in small sample size .

LLC and IPS test equation is following.

$$\Delta x_{it} = \alpha_i + \beta x_{i,t-1} + \sum_{j=1}^{pi} \beta_{ij} \Delta x_{i,t-j} + \mu_{it}$$

Whereas, *i* ,*t*, *x_{i,t}*, *p i* and μ_{it} indicates cross section (country), time, series of countries over the time, optimal lags and residual. LLC and IPS test has a null hypothesis $H0: \beta = 0$

Panel co-integration

First of all, order of integration of series being examined and all variables found stationary at 1(*I*), and to examine co-integration all variables should be stationary at first difference, hence we can go for panel co-integration to confirm long run relationship, to verify panel co-integration two different panels co-integration tests are being employed KAO and Johansen Fisher Panel co-integration test. Panel unit

root test confirmed that at entirely variables (series) are stationary at first difference, that's why panel co-integration test is employed and model is below.

$$y_{it} = \beta_1 + p_i t + \beta_{1i} x_{1,it} + \beta_{2i} x_{2,it} + \beta_{3i} x_{3,it} \dots \dots \dots N + \epsilon_{it} \text{Eq3.6}$$

Whereas, i, t, β_1 and p_i refers to cross section (countries), time period, intercept and deterministic trend specifically for each country.

Panel Vector Error Correction Model (PVECM)

A case where all variables are stationary at 1(I) and Cointegration also exist hence, to examine long run and short run causalities panel VECM model is most appropriate. In vector error correction model all variables used as a dependent variable and in difference form, that why's number of equation in VECM model equal to number of variables. Further dependent variable in each equation depends on its own lag values. The VECM equation in 4 variables case can be written as follows:

$$\begin{aligned} \Delta \ln smp_{it} &= \alpha_{1j} + \sum_{k=1}^x \alpha_{11ik} \Delta \ln smp_{it-k} + \sum_{k=1}^x \alpha_{12ik} \Delta \ln cc_{it-k} + \sum_{k=1}^x \alpha_{13ik} \Delta \ln ge_{it-k} + \sum_{k=1}^x \alpha_{14ik} \Delta \ln ps_{it-k} + \lambda_{1t} ect_{it-1} + \mu_{1it} \\ \Delta \ln cc_{it} &= \alpha_{2j} + \sum_{k=1}^x \alpha_{21ik} \Delta \ln smp_{it-k} + \alpha_{1j} + \sum_{k=1}^x \alpha_{22ik} \Delta \ln cc_{it-k} + \sum_{k=1}^x \alpha_{23ik} \Delta \ln ge_{it-k} + \sum_{k=1}^x \alpha_{24ik} \Delta \ln ps_{it-k} + \lambda_{2t} ect_{it-1} + \mu_{2it} \\ \Delta \ln ge_{it} &= \alpha_{3j} + \sum_{k=1}^x \alpha_{31ik} \Delta \ln smp_{it-k} + \sum_{k=1}^x \alpha_{32ik} \Delta \ln cc_{it-k} + \sum_{k=1}^x \alpha_{33ik} \Delta \ln ge_{it-k} + \sum_{k=1}^x \alpha_{34ik} \Delta \ln ps_{it-k} + \lambda_{3t} ect_{it-1} + \mu_{3it} \\ \Delta \ln ps_{it} &= \alpha_{4j} + \sum_{k=1}^x \alpha_{41ik} \Delta \ln smp_{it-k} + \sum_{k=1}^x \alpha_{42ik} \Delta \ln cc_{it-k} + \sum_{k=1}^x \alpha_{43ik} \Delta \ln ge_{it-k} + \sum_{k=1}^x \alpha_{44ik} \Delta \ln ps_{it-k} + \lambda_{4t} ect_{it-1} + \mu_{4it} \end{aligned}$$

Whereas Δ represents first difference, optimal lags length is being represented by k on the base of SIC. The equations from 1 to 4 allow both of kinds I.e. long run and short run causalities. For example, suppose from equation 1 if all the coefficients become zero it will indicate that control of corruption does not granger cause to stock market performance. While then again, to check invert causality, stock market performance does not Granger cause to control of corruption, every one of the coefficients of are equivalent to zero. For the short run causality of reaming variables can be confirm in a similar manner. Finally long run causality can be test with the help of ect_{it-1} .

EMPIRICAL FINDINGS

Table: 2 Correlation matrixes

Variables	<i>lnSMP</i>	<i>lnCC</i>	<i>lnGE</i>	<i>lnPS</i>
<i>lnSMP</i>	1.000000			

<i>lnCC</i>	0.764005 (0.0000)***	1.000000		

<i>lnGE</i>	0.798564 (0.0000)***	0.795675 (0.0000)***	1.000000	

<i>lnPS</i>	0.667154 (0.0000)***	0.719517 (0.0000)***	0.638511 (0.0000)***	1.000000

Note: *** indicating level of significance at 1%

Correlation matrix is being utilized to examine the strength of relationship among purposed variables. According to Evans (1996) the values of correlation coefficients between 0-.19 indicate a very weak relationship, whereas, .20-.39, .40-.59, .60-. 79 and .80-1. Weak, moderate, strong and very strong respectively. For the better understanding that how all the purposed variables (stock market capitalization, corruption, government effectiveness and political stability) are associated, we reported the findings of pairwise correlation in table 2. The Outcome of the table, shows that control of corruption, government effectiveness, political stability and stock market performance have a positive sign and a strong relationship.

Table 3: Panel unit root

Variables	(LLC)		(IPS)	
	Level	First difference	Level	First Difference
<i>lnSMP</i>	0.1045 (0.5416)	-6.7415 (0.000)*	-0.0049 (0.498)	4.8468 (0.000)*
<i>lnCC</i>	0.6829 (0.2473)	-8.6112 (0.000)*	4.0674 (0.667)	7.4242 (0.000)*
<i>lnGE</i>	-0.2547 (0.3995)	-6.2543 (0.000)*	-1.0475 (0.147)	-7.05995 (0.000)*
<i>lnPS</i>	-0.6861 (0.2463)	-4.1041 (0.000)*	12.8637 (0.457)	-4.6677 (0.000)*

Note: * indicating level of significance at 1%

As earlier argued, before examining the long run relationship a necessary condition for stock market performance, corruption, government effectiveness and political stability is that all variables should be stationary at same order, i.e. $I(1)$. Therefore, to examine this condition study at hand employed LLC (Levin, Lin & Chu) and IPS (Im, Pesaran and Shin test) unit root tests. The outcomes of LLC and IPS are presented in table 3. The findings of table 3 representing that all the variables at the level are non- stationary even at the 10 % level of significance. However, at $I(1)$ all variables become stationary at the 5 % level of significance. Based on LLC and IPS it can be concluded that all the variables are integrated $I(1)$ for the South Asian economies.

Table: 4: Kao and Fisher Panel Cointegration Test Results

Results of Kao Panel Cointegration Test		
	t-statistics	Prob.
ADF	-1.7503	0.0400
Results of Fisher Panel Cointegration Test		
No. of CE(s)	Fisher Stat. (From trace test) [Prob]	Fisher Stat.* (From max-eigen test) [Prob]
None	1.386 [0.9667]	38.23 [0.0012]
At most 1	55.26 [0.0021]	55.26 [0.0034]
At most 2	47.34 [0.0041]	50.42 [0.0023]
At most 3	6.267 [0.3939]	6.267 [0.3931]
Note: Null hypothesis for panel co-integration test is no co-integration, optimal lags for Kao and Fisher Panel Co-integration test is on the base of SIC 2.		

Table 4 indicates the results of panel cointegration, the null hypothesis for the co-integration is no-cointegration, and study at hand employed both kinds of panel cointegration tests, Kao Panel cointegration Test, residual based and Fisher Panel co-integration Test maximum-likelihood-based. The results of cointegration indicating an evidence of cointegration between stock market performances control of corruption, government effectiveness and political stability.

Table 5: Panel Vector Error Correction Model (VECM)

Variables	Coefficients	Standard errors	T- value
<i>lnCC (-1)</i>	4.3601	1.6107	2.7069
<i>lnGE (-1)</i>	3.6356	1.0900	3.3352
<i>lnPS (-1)</i>	4.2070	1.9375	2.1712
C	9.6456		
CointEq1	-0.2083	0.06020	-3.4603
R-squared	0.3823		
Note: Optimal lags 2 used on the base of SIC.			

After affirming proof for the presence of long run association between the stock market performances, control of corruption, government effectiveness and political stability, then the next step comprises of examining the long run dynamics between purposed variables. The results state that there is a 38% variation in stock market performance due to variation in all purposed independent variables (corruption control, government effectiveness and political stability). The negative and significant sign of the error correction term indicates the existence of the long run relationship among projects variables. However, the speed of adjustment from the last year’s disequilibrium in stock market performance is 20%. Moreover, there is a positive and significant relation between control of corruption, government effectiveness, political stability and stock market performance, at the 5 % level of significance, it implies that due to 1% increase in control of corruption, government effectiveness and political stability lead over 4.3%, 3.6% and 4.2% increase respectively in stock market performance in the long run. Furthermore, findings are in line with

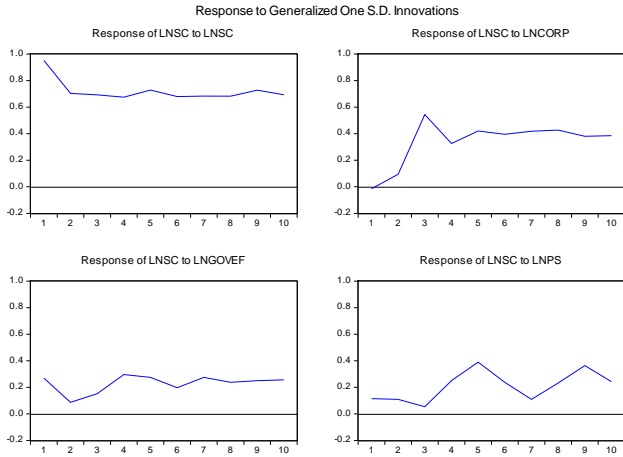
Table 6: VEC based Granger Causality Test: for South Asian Economies

Null Hypothesis:	d.f	Chi-sq	Prob.
lnCC does Granger Cause lnSMP	2	16.76	0.00*
lnSMP does Granger Cause lnCC		0.01	0.97
lnGE does Granger Cause lnSMP	2	14.28	0.00*
lnSMP does Granger Cause lnGE		1.63	0.44
lnPS does Granger Cause lnSMP	2	5.20	0.07**
lnSMP does Granger Cause lnPS		0.83	0.65

Note: * and ** indicates level of significance at 1% and 10% respectively

We observe from table 6, reports the results of PVECM based granger causality test, to examine the direction of relationship among projected variables. We observe from table 6 that there is unidirectional causality running from control of corruption, government effectiveness, and political stability to stock market performance, since the causality is not bidirectional. It implies that due to increase or decrease in lnCC, lnGE and lnPS in short run stock market effect.

Impulse response function



Study at hand, follows this order of purposed variables to perform generalized impulse response function (lnSMP, lnCC, lnGE and lnPS). Figure4.2 represents impulse responses of stock market performance to shocks in purposed variables. To explain IRF one should first clear understanding about that what the impulse response function is. IRF is actually one variable’s response due to shock in another variable. The shocks and impulse are measured for changes in variables in Standard Deviations. Figure 4.2 indicates that stock market performance gives positive response due to one standard deviation shock to stock market performance itself for the next 10 periods. Government effectiveness is impulse for the next 10 periods stock market responded positively but with minor effect. A one standard deviation shock to control of corruption shows that stock market performance gives a positive response for the next 10 periods. Finally, if we give one standard deviation shock to political stability in this response stock market performance respond positively as well.

Table 7: Variance decomposition analysis

Period	S.E.	LnSMP	lnCC	lnGE	LnPS
1	0.951	100.00	0.000	0.000	0.000
2	1.191	98.597	0.779	0.476	0.146
3	1.502	83.264	14.142	1.792	0.801
4	1.724	78.493	14.530	3.650	3.325
5	1.989	72.400	15.620	4.443	7.535
6	2.166	70.877	16.678	4.414	8.02
7	2.332	69.671	17.753	5.178	7.39
8	2.497	68.252	18.557	5.401	7.788
9	2.670	67.114	18.384	5.374	9.12
10	2.811	66.621	18.562	5.545	9.270

Table7 demonstrates that stock market performance attributes 100% of its changes to its own particular shock instead any other variable projected in model. While in period 2 again lnSMP itself contribute 98% of its changes to its own particular

shock instead any other variable, however, lnCC, lnGE and lnPS only contributes 0.77%, 0.47% and 0.14% respectively to forecast error variance. Though, from period three to onward lnCC contributes 14%, 15%, 17%, 18%. It implies that the lnCC is only leading factor to determine economic growth.

Discussion and policy recommendations

This study explore relationship between corruption, government effectiveness, political stability and stock market performance using panel VECM model for south Asian economies from 1989-2015. Our findings suggest a strong positive relationship between control of corruption, government effectiveness, political stability and stock market performance. It implies that nations that have an efficient institutional environment ought to expect enhancements in their stock market performance, due to efficient institutional environment level of risk reduce and investors invest their funds in stock markets without fear of losing their wealth. The most significant contribution of the study is its emphasis on government quality determinants and stock market performance for the south Asian economies, since most of the studies employed macroeconomic variables and stock market performance. Radiating from this, there are a couple of strategy messages which incorporates: political stability ought to be always kept up and advanced as it constitutes delay the stock execution, any demonstrations of corruption ought to be avoided as. The stock market development depends on the quality of governance and regulatory environment, normally quality of governance has been ignored. Corruption normally in south Asian countries remains a significant risk for financial development. Policy recommendation for the south Asian nations could be condensed in the following: increase the control of corruption, enhance government effectiveness, keep away from frequencies of violence and political instability that send wrong flags to universal investors, and keep up sound regulation quality.

The most significant contribution of the study is its emphasis on government quality determinants and stock market performance of the South Asian economies, since most of the studies employed macroeconomic variables and stock market performance. Radiating from this, there are a couple of strategic messages which incorporate: political stability ought to be always kept up and advanced as it constitutes delay the stock execution, any demonstrations of corruption ought to be avoided as.

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