

The Role of Governance Indicators in Stock Market Development of Selected Sub-Saharan Economies¹

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Abstract

The increase in foreign direct investment to developing countries has raised important questions on the role of governance indicators on stock market development in these economies. The recent developments in stock market of economies of Sub-Saharan countries also raise an important question on whether this can be attributed to governance indicators. The purpose of this study is to investigate the effect of governance indicators on stock market development in the economies of selected Sub-Saharan countries. This study investigates the effect of governance indicators such as corruption, political rights, public sector efficiency, regulatory burdens, protection of property rights and law enforcement on stock market development in the selected Sub-Saharan economies. The results indicate that governance indicators play a role in the development of stock markets.

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1. Introduction

The economies of emerging markets have grown rapidly over the past few decades. This growth is partly attributed by the boom in stock markets of these economies. The boom in stock market development in emerging economies resulted in the fundamental shift of financial structures of developing economies. It also caused capital flows from advanced to developing economies. Various measures indicated that the ratio of stock market development to GDP increased from 10 percent in 1990 to more than 60 percent of GDP in 2013. The growth of the stock market can be attributed to several macroeconomic variables and governance indicators.

There are many studies which investigated the effect of macroeconomic variables on stock market development in emerging economies. However, studies on the effect of governance on stock market development are still being developed. There is a general consensus that governance indicators have influences on the development of the stock market. It raises an important question on what role does governance play in influencing market performance. It also raise another important question on whether governance should be prioritised in the development agenda of developing economies. According to Kaufmann (2005), governance is not the only variable that matters for the development of the stock market, but if it is weak, it will also compromise the development of policies in other areas. It is widely acknowledged that quality of governance has an important influence on the development of the stock market. According to Yartey (2015), governance indicators such as strengthening property rights could boost confidence in stock market investment. Investment in equity becomes more attractive as political risk decreases. This argument is supported by Perroti and Van Oijen (2001) that the development of quality institutions has a significant influence on the stock market development. Studies on the effect of governance on stock market development are closely related to studies on the relationship between legal framework and corporate finance. According to Laporta *et al.* (1997), countries with weak legal systems and law enforcements tend to have smaller and underdeveloped capital markets. Firms that are listed in the stock markets of these countries tend to have more concentrated ownership. The

literature in most African stock markets estimated stock market development as function of macroeconomic variables such as GDP, interest rates, money supply and prices, among others. These studies did not give more emphasis on governance indicators as potential determinants of stock market development. The objective of this paper is to contribute to the literature by investigating the effect of governance indicators on the development of stock market in selected Sub-Saharan African economies. These selected economies are South Africa, Kenya, Zambia, Mauritius and Botswana. The rest of the paper is organised as follows. Section 2 discusses a brief review of the literature. Section 3 presents the empirical model, data and estimation methodology. Section 4 presents the results, while Section 5 concludes.

2. Literature

The theoretical and empirical literature predicts that there is an important relationship between governance and stock market development. The quality of governance in any economy is expected to have an important effect on market development. Although there is extensive research on the effect of governance on stock market development, there is no consensus on whether the relationship between these variables is positive or negative.

There are studies that found a positive effect of governance on stock market development. Studies such as Klapper and Love (2004) argued that good governance has a positive effect on stock market performance and valuation. At a microeconomic level, firm level governance can even be more important in countries with very poor protection of the rights of shareholders. This is also the case if the judicial system of that country is weak. However, Klapper and Love (2004) stated that the results of their study did not suggest that governance at firm level is important than or can replace judicial reform at a country level. The reason for this is that countries that have weak legal system also have lower governance at firm level. This indicates that firm level governance cannot substitute the lack of good laws and their enforcement. Cross-country studies on corporate governance approach put emphasis on the laws and quality of their enforcements as important components of governance and finance. La Porta *et al.* (1997) emphasise the importance of law and their enforcement on stock

market development. Economies that have well-enforced rights of outside investors by courts and market regulators will encourage investors to provide the necessary finance to firms. However, economies that have weak legal systems and ineffectively enforced rights will discourage investors from providing finance. This argument is supported by Battacharya and Daouk (2002; 2009).

The impact of governance on stock market development was tested by Hooper *et al.* (2009). The results indicated that irrespective of the measure of stock market development used, better governed economies have lower level of risk and higher equity returns. Governance indicators such as political stability impact positively on stock market returns and development. According to Low *et al.* (2011), the positive impact of governance on stock market development is in line with the demand centred view. The demand centred view argues that good quality governance decrease transaction cost of business operation. This will increase the returns o stockholders. This is done through higher demand for equity finance.

Studies on the effect of governance on stock market development in Africa are limited. However, there are notable studies such as Yartey (2015) on emerging economies including South Africa, Nigeria, Kenya, Ghana, Botswana and Zimbabwe. The results of this indicate that governance improve stock market development. Another notable study was conducted by Bello (2014) on Nigeria. This study provided mixed results. Some governance indicators have positive effect on stock market development while others have a negative impact. In light of these mixed results, this study seeks to investigate how governance influence the development of stock market in selected Sub-Saharan African economies. It specifically investigates the effect of each governance indicator on stock market development.

There are other studies that found evidence which point to a negative effect of good governance on stock market development. The effect of country level governance indicators such as investors' protection on equity premium was investigated by Albuquerque and Wang (2008). The results of this study indicate that weak protection of investors cause a rise in investment. This will lead to an increase in stock price volatility. It will also result in larger risk premiums and therefore a higher required return on shares. These results are in support of

Harvey (1995). Harvey (1995) argued that developing economies have poor governance system than advanced economies. Developing economies therefore tend to have higher equity risk premiums and the returns on stocks are highly volatile. The negative effect of good governance on stock market returns was also supported by Lombardo and Pagano (2002) who argued that better governance reduces the cost, time and other resources required to monitor the company, and this reduces the required return by stockholders. This suggests that the expected returns on stocks in countries with poor governance are higher. This implies that improvement in governance such as rules that govern stock market and accounting standards are expected to increase market liquidity, reduce the cost of capital and make pricing efficient. This implies that better governance which lowers risk has a negative influence on stock market return and development. That is because investors relate weak governance to increased risk. These investors in weakly governed capital markets would demand a higher required return on equity for investing in risky economic activities.

3. Empirical Model, Data and Estimation Methodology

3.1 Empirical Model

Following a review of the relevant literature, the empirical model for the relationship between governance indicators and stock market development in selected Sub-Saharan economies is specified as follows:

$$SMK_t = \alpha_0 + \alpha_1 GOV_t + \alpha_2 COR_t + \alpha_3 POL_t + \alpha_4 RUL_t + \alpha_5 VOL_t + \alpha_6 REG_t + \varepsilon_t \quad (1)$$

+/- +/- +/- +/- +/- +/-

Where *SMK*, *GOV*, *COR*, *POL*, *RUL*, *VOL*, *REG* are indicators of stock market development or return, government effectiveness, control of corruption, political stability and no violence, rule of law, voice and accountability, and regulatory quality. An increase in these variables is interpreted as improvement. As indicated by the signs below Equation (1), all coefficients are expected to have ambiguous signs. That is in line with the empirical literature that governance indicators can improve or reduce stock market performance and development.

3.2 Data

The data used in this study are quarterly and covers the period 2001 to 2013. Stock market performance or development (SMK) is proxied by share indices. These data are obtained from the IMF's International Financial Statistics. The data for all governance indicators are sourced from the World Bank's Worldwide Governance Indicators. An increase in all these variables is regarded as improvement.

3.3 Econometric Methodology

Before the estimation of Equation (1), the time series properties of the variables which involve unit root tests needs to be established. This study uses three tests to determine whether the variables to be used in the estimation are stationary or non-stationary. These tests are Augmented Dickey Fuller (ADF), Phillips-Perron (PP) and Kwiatkowski Phillips-Schmidt Shin (KPSS).

A Vector Autoregression (VAR) model is applied in this study. This model has advantages in the sense that time series can be modelled simultaneously. It was developed by Johansen (1988; 1995). The VAR methodology corrects for autocorrelation and endogeneity parametrically using vector error correction model (VECM) specification. The advantage of this method is that it prevents substantial bias that takes place in OLS estimates of cointegration relations when the Engle-Granger two-step procedure is used. This procedure (Johansen econometric methodology) develops as follows. The starting point in VAR of order m is given by:

$$x_t = \mu + B_1 x_{t-1} + \dots + B_m x_{t-m} + v_t \quad (2)$$

Where x_t is $(n \times 1)$ vector of variables, each of B_i is an $(n \times n)$ matrix of parameters, v_t is a residuals or $(n \times 1)$ vector of innovations. Sims (1980) states that this type of modelling estimates the dynamic relationships among variables that is jointly endogenous without the imposition of strong *a priori* restrictions. This is supported by Harris (1995). Equation (2) can be re-written in a vector error correction model (VECM) format as:

$$\Delta x_t = \mu + \Pi x_{t-1} + \sum_{j=1}^{m-1} \Gamma_j \Delta x_{t-j} + v_t \quad (3)$$

where $\Pi = \sum_{i=1}^m B_i - I$ and $\Gamma_i = -\sum_{j=i+1}^m B_j$.

It is assumed that Equation (3) contains only I(0) or stationary variables and is white noise because the terms in Equation (2) are all I(1). Harris (1995) states that specifying the system this way will have information on the short-run and long-run adjustments to changes in x_t through Π and Γ_i estimates. In the analysis of VAR, Π is a vector representing a matrix of long-run coefficients. This is very important in VAR analysis. The long-run coefficients are defined as multiple of two ($n \times r$) vectors, α and β' (Eita & Jordaan, 2010). $\Pi = \alpha\beta'$, where the elements of α are called adjustment parameters in the VECM. They are loading matrices and denote the speed of adjustment from disequilibrium. The elements of β' are a matrix of long-run equilibrium such that the term $\beta' x_t$ in Equation (3) represents up to $n-1$ economic equilibrium or cointegrating relationships in the model. If Π has rank of zero, it means that the variables in x_t are not cointegrated. If the rank is r (number of cointegrating vectors), there will be r possible stationary relationships. If the matrix has a full rank ($r = n$), it suggests that there are n cointegrating vectors and all variables in Equation 3 are I(0). Johansen (1988; 1995) proposed two likelihood ratio test statistics for cointegration and these are trace (λ_{trace}) and maximum eigenvalue (λ_{max}).

4. Estimation Results

4.1 Unit Root Test Results

The unit root test, is the first step before estimation of the empirical model. The unit root test was done using Augmented Dickey Fulley Test, Phillips-Perron and KPSS test statistics. The results indicated that some variables are non-stationary while others are stationary in levels. However, they meet condition for cointegration test. The results of unit root test are not presented here but can be obtained from the author on request.

4.2 Long-run and Short-run Results

The results of Equation (1) are presented in Table 1. The results show that government effectiveness has positive effect on stock market in South Africa, Zambia and Botswana. However, its coefficient is negative for Kenya and Mauritius. Control of corruption impacts negatively on stock market performance in all countries except Mauritius.

Political stability and absence of violence promotes stock market performance or development in all the selected countries. An improvement in the rule of law causes a reduction in stock market performance in all countries (except in Kenya). This suggests that an improvement in rule of law reduces risk and required return on equity in all the selected countries.

Improvement in voice and accountability causes stock market performance to improve in all countries (except in South Africa). The results for regulatory quality shows that it impact positively on stock market development in South Africa and Zambia. However, it impact negatively on stock market performance in Botswana, Kenya and Mauritius. The short run results for all the selected countries shows that the coefficients of the error terms are negative and statistically significant. This indicates that there is adjustment to equilibrium in all the selected countries. These results compare favourably with the findings of other studies in the literature. However, they are not completely consistent with the findings of Yartey (2015). This could be attributed partly to the econometric technique and the inclusion of other macroeconomic variables.

Table 1. Long-run and Short-run Results

Dependent variable: stock market share index

	LONG RUN ELASTICITIES							SHORT RUN ELASTICITIES						
	GOV	COR	POL	RUL	VOI	REG	Constant	ECM	Δ GOV	Δ COR	Δ POL	RUL Δ	Δ VOI	Δ REG
Botswana	0.5 (0.2)	-9.5 (-9.5)	20.1 (4.4)	-3.45 (-0.2)	4.9 (1.7)	-9.1 (4.1)	1.9 (0.7)	-0.002 (1.7)	0.02 (2.1)	-0.02 (-1.1)	-0.003 (-0.3)	-0.005 (-0.6)	-0.002 (-0.19)	-0.03 (-3.3)
Kenya	-10.4 (-4.9)	-6.4 (-5.5)	3.1 (1.8)	0.4 (1.8)	0.33 (1.9)	-0.03 (0.01)	-3.2 (-1.2)	-0.08 (-2.4)	-0.01 (-1.2)	-0.06 (-2.9)	-0.03 (-0.9)	-0.01 (-0.7)	-0.09 (-3.3)	0.09 (-0.7)
Mauritius	-1.6 (-5.9)	3.6 (9.7)	1.4 (5.1)	-2.9 (-6.3)	8.4 (9.4)	-1.2 (-7.0)	-3.3 (-2.3)	-0.7 (-5.5)	-0.01 (-0.2)	-0.04 (-0.7)	-0.03 (-0.4)	-0.03 (-0.8)	-0.01 (-0.4)	-0.2 (-2.2)
South Africa	4.9 (2.8)	-2.5 (-3.2)	3.3 (4.5)	-0.3 (-1.6)	-2.6 (-3.0)	1.2 (1.9)	-3.3 (-2.3)	-0.08 (-1.9)	0.01 (0.8)	-0.1 (-3.7)	0.02 (0.9)	-0.3 (-1.5)	-0.1 (-2.7)	0.04 (1.4)
Zambia	4.4 (1.9)	-4.4 (-1.7)	0.5 (0.3)	-10.2 (-3.9)	1.2 (6.6)	7.4 (5.2)	7.8 (6.1)	-0.02 (-1.7)	0.00 (0.0)	-0.01 (-1.14)	0.03 (1.5)	-0.02 (-4.0)	0.0 (0.5)	0.02 (1.4)

Note: The t-statistics are in brackets

5. Conclusion

The purpose of this study was to investigate the relationship between governance and stock market performance. The investigation was conducted through an extensive review of the relevant literature. The theoretical and empirical literature predicts that the effect of governance can be positive or negative. This study provides mixed evidence on the relationship between governance indicators and stock market performance. For example, government effectiveness improves stock market performance in Botswana, South Africa and Zambia. However, it reduces stock market performance in Mauritius and Kenya. Improvement in control of corruption reduces stock market performance. This suggests that an improvement in control of corruption results in investors to reduce their required return on equity and risk premium.

Political stability and absence of violence has a positive effect on stock market development and performance, indicating that it encourages investment in equity and returns will be high for all the selected countries. The effect of rule of law shows that an improvement causes a reduction in stock market performance for all countries. This suggests that investors demand low return on equity and premium because the risk is low.

The effect of voice and accountability on stock market performance is positive for all countries (except South Africa). Only two countries, South Africa and Zambia have positive coefficients for regulatory quality.

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