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The Link between Quality of Governance and Stock Market Performance: International Level Evidence

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Abstract. The present study investigates the link between quality of governance and stock market performance within the context of international markets. The study employed the Fixed Effect model using 23 countries with complete relevant data for the period spanning from 1996 to 2014. The study reveals that, quality of governance as captured by Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption significantly affect stock market performance. Varying effects are produced when the countries are decomposed into income classifications. What is more, the findings and suggestions of this study suggest that quality of government significantly affect foreign direct investment and could have interesting policy implications. The main value of this paper is to examine the link between quality of governance and stock market performance within the context of international markets.

1. Introduction

What is the link between quality of governance framework and stock market performance? A number of cross-country studies for example, Klapper and Love (2004), Durnev and Kim (2005), Bruno and Claessens (2010), among others, have demonstrated that effective functioning of any investment activity hinges on good corporate governance mechanisms which in turn depend on the quality of governance framework of a country. This is because firms do not operate in a vacuum as they are affected by the governance systems in which they operate. Empirical evidence has however shown that governance and stock market performance are somewhat inextricable. The United States (US) House of Representatives on October 29, 2008 voted down the bailout bill proposed by the Treasury and the Federal Reserve in order to

provide extra liquidity to the troubled US financial markets. Global stock markets[1] and Chicago Board Options Exchange Volatility Index quickly reacted with an increased by 17 per cent within two hours of the announcement. Dow Jones Industrial Average Index dropped 778 points a day after indicating clearly that, the uncertainty about the outcome of a critical vote was reflected by both domestic and global stocks. This seems to suggest that financial markets do not operate in a vacuum as they are affected by the governance systems in which they exist. Studies by Hail and Leuz, (2006), Hooper *et al.*, (2009) Chen *et al.*, (2009) Giannetti and Koskinen (2010), Chiou *et al.*, (2010) among others have opined that quality of a country's governance is known to be affecting the operation of financial and capital markets. Dooley (1998), McKinnon and Pill (1997) confirmed that governments are responsible for financial volatility and financial excesses.

The novelty of this study over the previous related studies stems from the following grounds: first, although several studies had been conducted in the past, the primarily focus had been on firm-specific corporate governance and stock market performance. The present study beams a searchlight on the country-level governance environment under which firm-specific corporate governance is implemented. Second, literature on stock market performance has focused mainly on non-governmental factors such as sovereign spreads (Gendreau and Heckman, 2003), valuation ratios (Campbell and Shiller., 1998; Maroney *et al.*, 2004; Ciaessens *et al.*, 1998; Groot and Verschoor, 2002), population demographics (Bakshi and Chen, 1994; Bekaert *et al*, 1998), exchange rates (Bailey and Chung, 1995; Harvey, 1995), and inflation rates (Erb *et al*, 1995; Hooker, 2004) as playing a contributory role on stock market performance. As a result, this study adds new empirical evidence to the existing stock of knowledge. Third, the sample employed in this study comprises of 23 countries with complete relevant data for the period from 1996 to 2014. The high frequency dataset will ensure that more robust policy recommendations are made. Further, country-level governance structures have remarkable informative power related to firm-level measures in explaining stock market performance (Krishnamurti *et al.*, 2005; Doidge *et al.*, 2007; Claessens and Yurtoglu, 2013). Finally, country heterogeneity is considered as a key relevance of this study. The researchers are of the view that quality of governance is possible to differ from country to country, rendering any evidence on return predictability country-specific. Hence, this study seeks to develop country-level governance indices of 23 countries sampled from high income, upper middle income and lower middle income countries, as shown in Table 1, to examine whether country-level governance indicators can predict stock market performance and, if so, whether this has implications for investors.

The study is structured in five sections. Section 2 reviews related literature in the study. Section 3 presents the data source and governance indicators. The next section presents the study methodology. Section 5 presents the empirical results and section 6 discusses the results and recommendations of the study.

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[1] See Gray and Wood (Financial Times, September 30, 2008, p. B7).

Table 1. List of countries included in the sample by income classification.

Classification	Countries	Region	Sample Period
High Income(OECD)	Australia	East Asia & Pacific	1996-2014
	Belgium	Europe & Central Asia	1996-2014
	Canada	North America	1996-2014
	Germany	Europe & Central Asia	1996-2014
	Chile	Latin America & Caribbean	1996-2014
	Israel	The Middle East & North Africa	1996-2014
	United States	North America	1996-2014
	United Kingdom	Europe & Central Asia	1996-2014
	Japan	East Asia & Pacific	1996-2014
Lower Middle Income	Ghana	Sub-Saharan Africa	1996-2014
	India	South Asia	1996-2014
	Nigeria	Sub-Saharan Africa	1996-2014
	Morocco	The Middle East & North Africa	1996-2014
	Philippines	East Asia & Pacific	1996-2014
	Ukraine	Europe & Central Asia	1996-2014
	Pakistan	South Asia	1996-2014
Upper Middle Income	South Africa	Sub-Saharan Africa	1996-2014
	Thailand	East Asia & Pacific	1996-2014
	Tunisia	The Middle East & North Africa	1996-2014
	Turkey	Europe & Central Asia	1996-2014
	Brazil	Latin America & Caribbean	1996-2014
	China	East Asia & Pacific	1996-2014
	Mexico	Latin America & Caribbean	1996-2014

Source: World Bank data

2. Literature Review

The literature on the quality of governance in influencing a country's stock market performance is large and growing in recent times. Recent literature in the early 2000s (see, e.g., La Porta *et al.*, 1997, 1998, 2000; Ball *et al.*, 2000; Gul and Qui, 2002; Shleifer and Wolfenson, 2002) have shifted the focus from firm-specific corporate governance to country-level governance environments. It is an undeniable fact that country-level governance has now become an important policy issue in many countries. In developed countries for instance USA, Milyo (2012) reports that stock markets react to governance indicators and events. Bechtel (2009) argued that a stable political situation has a systematic investment risk and encourages growth, capital investment and improves overall economy's performance. Jorion and Geotzmann (1999) derived that political events had an interruption in the market transactions. Chiu *et al.* (2005) proved that political elections in South Korea changed the behavior of foreign investors in financial markets. Beaulieu *et al.* (2006), Aktas and Oncu (2006), Bailey *et al.* (2005) and Frey and Waldenstrom (2004) argued that political events had a strong effect on the returns and trading volume of the financial markets. Low *et al*, (2011) found a negative relation between

governance quality and equity return when they examined the link between country-level governance and global stock market performance. A study by Munteanu and Brezeanu (2014) which employs a Prais-Winsten regression that allows for both autocorrelation and heteroskedasticity confirms that government effectiveness and control of corruption present significant positive effects on bank performance across emerging European economies.

Hooper *et al*, (2009) reveal a significant and positive association between quality of governance and stock market performance. Lombardo and Pagano (2000) employ a cross-section of national stock market indices from both developed and emerging markets and confirm the link between quality of governance and the return on equity. Simplice (2011) study reveals a direct association between stock market returns and the quality of government institutions. Hail & Leuz (2003) concur a significant relationship between the strong legal institution's cost of capital. Governments have also been blamed for financial volatility and financial excesses (see, for example, Dooley 1998, McKinnon and Pill 1997). Albuquerque and Wang (2008) find that high investments are often necessitated by poor investor protection. Such results parallel those of Harvey (1995), and of Giannetti and Koskinen (2010) with special reference to emerging markets. The trustworthiness of governments, the reliability of courts, and the full disclosures of accounting standards in the countries of the common law system significantly affect stock market returns (Djankov *et al.*, 2003). Li and Filer (2007) concur that countries which attract more equity investors often practices unbiased and transparent legal systems. The effects of political risk have been found to be statistically significant in emerging stock markets (see, e.g., Erb *et al.*, 1996a, Diamonte *et al.*, 1996; Perotti and van Oijen, 2001). Lehkonen and Heimonen (2015) employ 49 emerging markets panel data to investigate how stock markets respond to changes in democracy and political risk. The study finds evidence to support that stock markets respond significantly to changes in democracy and politics. Their results reveal that decline in political risk leads to higher returns. Evidence on the negative effects of democracy on the volatility of growth is provided by Mobarak (2005). Empirical works by Bittlingmayer (1998), Henry (2000), Bekaert and Harvey (2000) and Bailey and Chung (1995) confirm that political uncertainty significantly affects market volatility. Research work on the US Civil War by Willard *et al.*, (1996) discovered that the turning points during the civil war reflected the price of the Greenbacks.

Bailey *et al*. (2005) examined the Iraqi invasion of Kuwait in August 1990 and concluded that the impact of political events on the returns affects US-based international equity mutual funds. Frey and Waldenstrom (2004) studied the fluctuation in the value of government bonds of Germany and Belgium traded in the Zurich and Stockholm markets during Second World War, confirmed the relationship between political event and stock market performance. In 1995, a referendum conducted in Quebec on the separation from the Canada Federation had a positive impact on the stock market performance. This was good news for financial markets because Quebec will remain a part of Canadian Federation (Beaulieu *et al.*, 2006). Research by Ferguson (2006), which examined the behavior of the London bond market during the First World War, revealed a more significant effect on the international bond yield performance.

Ismail and Suhardjo (2001) examined the effect of domestic political events on the Jakarta Stock market performance. They concluded that the whole market and the overall industry did not show any significant response to all events. Chiu *et al.* (2005) studied the behavior of foreign investors in the four elections of South Korea. The results showed that negative relationship exists between KOSPI 200 index return and the volume of both future and option contracts. Onder and Simga-Mugan (2006) evaluated the impact of economic and political news on the emerging markets; the study took a case of two markets the Buenos Aires Stock Exchange (BASE) in Argentina and Istanbul Stock Exchange (ISE) in Turkey. They examined political and economic news and financial markets from January 1995 to December 1997. The results showed that both economic and political news affects the stock markets. A pioneering study by Javed and Ahmed (1999) on the impact of the studies on two nuclear tests in Pakistan and India in 1998 and 1999 respectively on Karachi Stock Exchange on trading volume, volatility and average return 1995 to 1999 by using the ARCH Model. The study reports that, whereas Indian nuclear tests had a significant negative impact on the average rate of returns, trading volume and volatility level increased at KSE, Pakistani nuclear tests did not affect the average rate of returns significantly. They did, however, increase the volatility and trade volume. Masood and Sergi (2008), who used Bayesian modeling and Markov Chain Monte Carlo techniques to examine major political events in Pakistan from 1947 to 2006, which had an effect on the stock market, find that the Pakistan's political uncertainty has a risk premium of 7.5 to 12 percent. Some researchers like Robock (1971), Haendal *et al.* (1975), Kobrin (1979) and Feils (2000) have examined the impact of political risk on the volatility of investment and observed both negative and positive effects.

However overwhelmingly the literature on the link between quality of governance framework and stock market performance has advanced our knowledge, the empirical results have been mixed and contradictory, allowing the present study to add new empirical evidence to the existing stock of knowledge. First, the previous works have focused mainly on the developed and emerging countries for example US and Europe where the impact may differ. The study extends the existing literature by examining the link between quality of governance framework and stock market performance by grouping these countries into three income classifications: Lower Middle Income, Upper Middle Income and High Income. Second, unlike the previous studies where few countries have been sampled and selected, the present study samples 23 countries with complete relevant data for the period from 1996 to 2014 to examine the of impact quality of governance framework on stock market performance. Finally, previous studies have shown that the impact of quality of governance framework on stock market performance is inconclusive. Whereas some studies have revealed a positive impact on the quality of governance and stock market performance, others have confirmed an inverse relationship. The inconclusiveness of the previous studies indicates that this problem deserves new research. The study therefore hypothesizes the following relationship.

H_1: Quality of government significantly affects stock market performance

3. Data source and governance indicators

3.1 Stock returns data

The global equity indices were obtained from the World Bank Development Indicators data stream and are broadly representative of each country's market composition. The equity returns indicating market performance were selected from January 1996 to December 2014, which correspond to the years that governance data are available. Panel A of Table 2 and Panel A, B,C of Table 3 reports both the summary statistics of stock returns and summary statistics of stock returns per income classifications from 1996 to 2014.

Table 2: Summary statistics of stock returns from 1996 to 2014.

Countries	Credit Rating	Political Risk Index(PRI) with Global Index as 73	mean	s.d.	min	max
Australia	AAA	88	9.412	2.651	-5.408	7.237
Belgium	AA	81	9.542	3.132	-6.557	6.383
Brazil	A−	70	1.035	2.564	-4.904	5.753
Canada	AAA	93	1.127	2.696	-4.28	6.403
Chile	AA−	84	8.848	3.511	-4.124	8.399
China	AA−	70	9.269	3.138	-3.468	7.376
Germany	AAA	83	8.347	1.874	-3.848	3.101
Ghana	B	70	5.337	2.026	-4.952	3.525
India	BBB−	70	4.205	2.708	-3.486	5.672
Israel	AA−	82	4.541	3.901	-5.09	9.416
Japan	AA−	85	1.75	4.398	-6.414	9.414
Mexico	A−	80	1.238	3.582	-3.54	1.083
Morocco	BBB	70	6.851	2.612	-1.914	7.853
Nigeria	BB-	59	9.229	3.796	-6.16	7.152
Pakistan	B−	54	1.67	6.368	-8.225	1.703
Philippines	BB+	73	1.825	3.931	-6.192	1.12
South Africa	A−	69	9.598	3.077	-4.171	5.61
Thailand	BBB+	76	1.19	5.127	-7.876	1.472
Tunisia	BB-	69	1.911	2.19	-4.702	4.793
Turkey	BB+	71	3.029	7.848	-6.24	2.545
Ukraine	B-	56	1.717	5.054	-5.717	1.251
United Kingdom	AAA	86	1.471	4.53	-5.27	1.022
United States	AA+	84	1.559	3.375	-4.507	7.85

Table 3. Summary statistics of stock returns per income classifications from 1996 to 2014.

Market	Region	mean	s.d.	min	max
Panel A: Lower Middle Income					
Ghana	Sub-Saharan Africa	4.541	3.901	-5.09	9.416
India	South Asia	1.75	4.398	-6.414	9.414
Nigeria	Sub-Saharan Africa	1.238	3.582	-3.54	1.083
Morocco	Middle East & North Africa	6.851	2.612	-1.914	7.853
Philippines	East Asia & Pacific	9.229	3.796	-6.16	7.152
Ukraine	Europe & Central Asia	1.67	6.368	-8.225	1.703
Pakistan	South Asia	1.825	3.931	-6.192	1.12
Panel B: Upper Middle Income					
South Africa	Sub-Saharan Africa	9.598	3.077	-4.171	5.61
Thailand	East Asia & Pacific	1.19	5.127	-7.876	1.472
Tunisia	Middle East & North Africa	1.911	2.19	-4.702	4.793
Turkey	Europe & Central Asia	3.029	7.848	-6.24	2.545
Brazil	Latin America & Caribbean	1.717	5.054	-5.717	1.251
China	East Asia & Pacific	1.471	4.53	-5.27	1.022
Mexico	Latin America & Caribbean	1.559	3.375	-4.507	7.85
Panel C: High Income					
Australia	East Asia & Pacific	9.412	2.651	-5.408	7.237
Belgium	Europe & Central Asia	9.542	3.132	-6.557	6.383
Canada	North America	1.035	2.564	-4.904	5.753
Germany	Europe & Central Asia	1.127	2.696	-4.28	6.403
Chile	Latin America & Caribbean	8.848	3.511	-4.124	8.399
Israel	Middle East & North Africa	9.269	3.138	-3.468	7.376
United States	North America	8.347	1.874	-3.848	3.101
United Kingdom	Europe & Central Asia	5.337	2.026	-4.952	3.525
Japan	East Asia & Pacific	4.205	2.708	-3.486	5.672

3.2 Global risk factors and Governance data

Whereas the country's credit ratings were collected from the International Country Risk Guide (ICRG), quality of governance (QG) indicators were also obtained from Political Risk Services Inc. (PRS) published by the Country Risk Services Inc. (CRS). The quality of governance (QG) gives a measure of the host country's political environments. The measure includes many macro-assessments such as government stability, socioeconomic conditions, external and internal conflicts, corruption, law and order, military in politics, religious and ethnic tensions, democratic accountability and bureaucracy quality. To compare and contrast among countries with similar stages of economic development, the study divides the sample into three panels. The first panel comprises lower middle income (Ghana, India, Nigeria, Morocco, Philippines, Pakistan and Ukraine). The second panel includes (South Africa, Thailand, Tunisia, Turkey, Brazil, China and Mexico). The last panel considers high income countries (Australia, Belgium,

Canada, Germany, Chile, Israel, United States, United Kingdom and Japan). The present study seeks to develop country-level governance indices namely voice and accountability (Democracy and military in politics), political stability and absence of violence (government stability and internal conflict), government effectiveness (Bureaucratic quality), regulatory quality (Investment profile), rule of law (Law and order) and control of corruption (Corruption). The choice and justification of country selections were motivated by two main criteria. The first of these is the number of firms for each country reflects the capital market size with a higher number allocated to a country with large capital market size. The second justification is that firms included had available and valid data for the analysis of future performance.

3.3 Governance indicators

The study employs six government indicators and these are categorised to measure different aspects of governance. The literature on country-level governance indicators as measured by voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption by Low, Kew & Tee (2011) would be discussed in turns:

Indicator 1: Voice and Accountability

Voice and Accountability describe how individuals who manage government institutions are selected and the stability of their positions in these organizations. Voice and Accountability as measured by democracy is not only a complex political and social phenomenon but a subject which needs more attention in developing countries and whether democracy can affect the behavior of the stock markets still remains unexplored. However, regardless of the connection between economic growth and stock market performance, it is possible that democracy and political stability might continue to have a direct impact on stock market performance over and above their impact on economic growth.

Indicator 2: Political stability and absence of violence

Political stability and absence of violence as measured by government stability and internal conflict although are considered as events that do not have any direct relationship with stock markets but they are considered as one of the main factors that may affect the stock market's performance. Empirical works by Bittlingmayer (1998), Henry (2000), Bekaert and Harvey (2000) and Bailey and Chung (1995) confirm that political uncertainty significantly affects market volatility.

Indicator 3: Government effectiveness

Government effectiveness as a measure of bureaucratic quality concerns perceptions of the quality of public services, the quality of the bureaucracy and the reliability of the government's responsibility to such guidelines. It considers the ability of the government to formulate, initiate and implement sound policies. This index measures the ability of governments to produce and implement good policies and deliver public goods. The expanding and improving stock markets in developing countries demonstrate an important concern of how government frameworks affect stock market performance. Governance quality has been adopted by an international organization to measure the state of developing countries.

Indicator 4: Regulatory Quality Index

Regulatory Quality Index which measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development Kaufmann *et al*. (2009). Regulatory Quality looks at the instances of market-unfavorable guidelines such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas. Low *et al*, (2011) examine the link between country-level governance and global stock market returns and find the regulatory quality is positively and significantly related to stock market returns.

Indicator 5: Rule of law

Rule of law selected as our fifth indicator of the study which measures the law and order reflect the extent to which citizens of a country has confidence in the courts, the police, the level of contract administration and the tendency of crime and violence. Rule of law is an assessment of the law and order tradition in the country. It summarizes in broad terms the respect of citizens and the state for the institutions that govern their interactions. Rule of law considers the effectiveness and predictability of the judiciary, and, more importantly, the enforceability of contracts and proprietary rights. This indicator is a proxy for the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions. The Raw of law indicator can be considered as a measure of investor protection arising from the enforcement of equitable principles. Chiou *et al*, (2010) using data on 4916 stocks from 37 countries, confirm equities found in countries practicing English common law often have higher risk premium than equities found in countries practicing civil law. The qualities of judicial system, legal protection of investors' rights, and the social/political environment in a state have significant association on return and risk. Various research studies have confirmed the association between performance of financial systems and comprehensive legal protection and an efficient legal system both at the macroeconomic and firm levels and notable among these studies are La Porta *et al.* (1998; 2000).

Indicator 6: Corruption

Corruption is the extent to which public power is exercised for private interest. Corruption is not just about bribery. Instead, corruption extends beyond bribery to include other exercises of discretionary power in the public sector. In the academic literature, corruption is often defined as the misuse of public office for private gains (Shleifer and Vishny, 1993; Klitgaard, 1991; Transparency International, 1995). The World Bank calls corruption ''the single greatest obstacle to economic and social development. It undermines development by distorting the rule of law and weakening the institutional foundation on which economic growth depends''. Corruption is a serious social problem that affects all facets of a society (Qing *et al*, 2015). Lee and Ng (2004) document the empirical relationship between the level of corruption within a country and the valuation of its corporations to shareholders. They find that firms from more corrupt countries trade at significantly lower market multiples, after controlling for other factors. They document that corruption significantly decreases equity values after controlling for many other firms- and country-level control factors. Gelos and Wei (2006) show that lower country transparency is associated with lower investment from international funds. They also find that during financial crises, international funds flee non-transparent countries by a greater amount than their transparent counterparts. Given the link between secrecy and corruption mentioned earlier, it seems that corrupted countries will receive less investment from foreign investors.

4. Methodology

To estimate the relationship between governance quality and stock market performance, a model for the empirical investigation takes the following form:

$$EQIND_{it} = \beta_0 + \beta_1 VACC_{it} + \beta_2 PSAV_{it} + \beta_3 GEFF_{it} + \beta_4 RQUA_{it} + \qquad [1]$$
$$+ \beta_5 ROL_{it} + \beta_6 COC_{it} + \delta_1 INF_{it} + \delta_2 GDP_{it} + \varepsilon_{it},$$

where Equity Index (EQIND) being the dependent variable, the study regressed all six explanatory variables namely Voice and Accountability (VACC), Political Stability and Absence of Violence (PSAV), Government Effectiveness (GEFF), Regulatory Quality (RQUA), Rule of Law (ROL) and Control of Corruption (COC) on the dependent variable. Other control variables include Inflation(INF) and Gross Domestic Product(GDP). The model was also specified separately for the various income classes (high income, upper middle income and lower middle income). Fixed effect estimation is used in this study in order to include the country fixed effects that are largely unobserved in standard econometric models such as the strength of democracy. The fixed effect model has chosen ahead of a pooled ordinary least squares (OLS) regression. Both fixed effect and random effect estimations were done for all the models, after which a Hausman specification test was conducted. The null hypothesis that individual effects are not

correlated with any of the model's regressors was rejected (Hausman, 1978). Thus with systematic differences in the coefficients, a fixed effect model was adjudged more appropriate, hence the choice of fixed effect estimation.

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5. Empirical results

5.1 Descriptive statistics

Table 2 presents summary statistics of the equity indices for each country from 1996 through to 2014. Five countries, namely Belgium, China, Australia, Nigeria and South Africa have the highest positive equity indices (>9%) with the lowest being Brazil (1.035) during the sample period and correspond with a political risk index of each country exceeding 50 per cent. These results contradict the findings of Bekaert and Harvey (2000, 2003) and Henry (2000) using IFC indices, and found poor stock performance. There are several causes of the better performances in these countries. First, these countries have now come out of a long-term economic recession and depreciation in the domestic currencies cause a positive return in equity markets. This is particularly true for some market like China. Second, the selection of sample period excludes major market crashes in a number of states such like "Tequila Crisis" in 1994, "Asian Flu" in 1997, and "Russian Virus" in 1998. Third, in recent years, an increase in integration of the global financial market and financial liberation has increased the abnormal returns particularly in less developed markets. The countries of the highest stock return volatility are Turkey (7.848) and Pakistan (6.368). This could be attributed to the recent turmoil in the region. Table 3 presents summary statistics of the equity indices for each country, categorized by sub regions and income classifications mainly lower middle countries (Panel A), Upper Middle Income Panel (B) and High Income (Panel C). Of the eight countries sampled within the lower middle countries, Philippians showed the highest, positive equity indices and exceeds 9 per cent with less than 2 per cent for countries such as India, Ukraine, Pakistan and Nigeria. Within the upper middle-income countries, South Africa records the highest equity indices with Turkey recording the highest stock return volatility.

Table 4. Definition of variables and summary statistics.

Variable	Definition	obs.	mean	s.d.	min	max
EQIND	Equity Indices	437	11.43	38.59	-82.25	254.5
VACC	Voice and Accountability	437	0.62	0.33	0	1
PSAV	Political Stability and Absence of Violence	437	0.59	0.28	0	0.936
GEFF	Government Effectiveness	437	0.59	0.35	0	1
RQUA	Regulatory Quality	437	0.60	0.32	0	1
ROL	Rule of Law	437	0.57	0.32	0	1
COC	Control of Corruption	437	0.42	0.26	0	1
INF	Inflation	437	17.86	7.42	8.58	40.5
GDP	GDP Growth Rate	437	6.36	2.54	3.7	15.00

Table 4 provides variable definition and summary descriptive statistics for the equity indices indicating each countries stock market performance and governance indicators for the entire study period of 1996 through to 2014. The data employed had a total of 437 observations. The mean of the governance indicators should by definition be zero due to the standardization process in their construction. However, the sample of countries selected based on the availability of stock market data results in a positive mean for each of the governance indicators. On government indicators, Voice and Accountability (VACC) had the highest positive average score, followed by Regulatory Quality (RQUA), Political Stability and Absence of Violence (PSAV), Government Effectiveness (GEFF), Rule of Law (ROL), and Control of Corruption (COC). Overall, with the exception of EQIND which had its standard deviation higher than its mean, all the variables had their means higher than their standard deviation. This depicts close spread and high quality of the data. The two macro level control variables exhibited good data qualities by showing the low spread in the distribution (with very low standard deviation compared to their means). As shown in Table 5, the results of unit root tests indicated that the three tests employed (Harris-Tzavalis (1999), Breitung (2000) and Im-Pesaran-Shin (2003)) all rejected the null hypothesis of the presence of unit roots in all panels at 1 percent. All the variables used are therefore stationary and appropriate carrying out the panel estimation.

Table 5. Unit root tests.

Variable	Test		
	Harris-Tzavalis	**Breitung**	**Im-Pesaran-Shin**
EQIND	-0.1951***	-12.6534***	-10.6018***
VACC	-0.0693***	-10.6741***	-9.6484***
PSAV	-0.3124***	-11.6705***	-12.2565***
GEFF	-0.1848***	-9.9423***	-11.2918***
RQUA	-0.1376***	-9.5214***	-8.1813***
ROL	-0.3114***	-10.2534***	-12.3119***
COC	-0.2047***	-10.0288***	-11.5573***
INF	-0.2373***	-10.7468***	-11.3411***
GDP	-0.1822***	-9.4428***	-10.2082***

Ho: All panels contain unit roots   Ha: At least one panel is stationary

Table 6 summarizes the statistics of quality governance indicators from 1996 to 2014. Quality of governance (QG) indicators used in this study, which have been obtained from Political Risk Services Inc. (PRS) and published by the Country Risk Services Inc. (CRS), includes voice and accountability (Democracy and military in politics), political stability and absence of violence (government stability and internal conflict), government effectiveness (Bureaucratic quality), regulatory quality (Investment profile), rule of law (Law and order), and control of corruption (Corruption).

5.2 Model results

From Table 7, Voice and accountability (VACC) had a positive impact on EQIND, and the impact was significant at the 1 per cent level. This implies that the countries with higher voice and accountability rates are likely to have increased equity indices, and the opposite also holds. Stated differently, the improvements in democracy lead to higher returns. Whereas the findings confirm the results of Lehkonen & Heimonen, (2015), they contradict the results of (Low *et al*, 2011). Regulatory Quality (RQUA) considers instances of market-unfavorable guidelines i.e. weak bank oversight and surveillance had a positive and significant impact on EQIND at the 5 per cent level. This shows that an improvement in regulatory quality results in an increased equity index, and vice versa. Such results parallel those of Albuquerque and Wang (2008) findings suggest that high investments are often necessitated by poor investor protection and support those of Harvey (1995), Giannetti and Koskinen (2010) with special reference to emerging markets.

Table 6. Summary statistics of quality governance indicators.

Market	Voice & Accountability				Political Stability & Absence of Violence				Government Effectiveness			
	mean	s.d.	min	max	mean	s.d.	min	max	mean	s.d.	min	max
Panel A: Lower Middle Income												
Ghana	0.695	0.310	0.000	0.830	0.485	0.220	0.000	0.670	0.632	0.281	0.000	0.750
India	0.365	0.178	0.000	0.500	0.477	0.223	0.000	0.740	0.211	0.125	0.000	0.500
Nigeria	0.365	0.178	0.000	0.500	0.477	0.223	0.000	0.740	0.211	0.125	0.000	0.500
Morocco	0.586	0.269	0.000	0.750	0.633	0.289	0.000	0.840	0.421	0.187	0.000	0.500
Philippines	0.598	0.269	0.000	0.830	0.601	0.276	0.000	0.870	0.618	0.281	0.000	0.750
Ukraine	0.618	0.344	0.000	0.880	0.560	0.300	0.000	0.840	0.197	0.105	0.000	0.250
Pakistan	0.246	0.215	0.000	0.710	0.473	0.243	0.000	0.780	0.434	0.201	0.000	0.750
Panel B: Upper Middle Income												
South Africa	0.680	0.305	0.000	0.830	0.601	0.269	0.000	0.790	0.434	0.201	0.000	0.750
Thailand	0.526	0.245	0.000	0.710	0.572	0.278	0.000	0.910	0.434	0.201	0.000	0.750
Tunisia	0.430	0.198	0.000	0.710	0.705	0.322	0.000	0.900	0.421	0.187	0.000	0.500
Turkey	0.500	0.264	0.000	0.830	0.501	0.231	0.000	0.720	0.421	0.205	0.000	0.750
Brazil	0.614	0.277	0.000	0.750	0.610	0.273	0.000	0.780	0.434	0.201	0.000	0.750
China	0.288	0.135	0.000	0.380	0.657	0.303	0.000	0.900	0.421	0.187	0.000	0.500
Mexico	0.686	0.313	0.000	0.880	0.580	0.262	0.000	0.820	0.612	0.279	0.000	0.750
Panel C:High Income												
Australia	0.842	0.375	0.000	1.000	0.647	0.292	0.000	0.940	0.842	0.375	0.000	1.000
Belgium	0.834	0.372	0.000	1.000	0.646	0.291	0.000	0.890	0.842	0.375	0.000	1.000
Canada	0.838	0.373	0.000	1.000	0.641	0.287	0.000	0.820	0.641	0.287	0.000	0.820
Germany	0.819	0.366	0.000	1.000	0.666	0.302	0.000	0.910	0.842	0.375	0.000	1.000
Chile	0.618	0.286	0.000	0.790	0.647	0.295	0.000	0.930	0.632	0.281	0.000	0.750
Israel	0.613	0.275	0.000	0.830	0.408	0.187	0.000	0.570	0.836	0.373	0.000	1.000
United States	0.727	0.328	0.000	1.000	0.648	0.292	0.000	0.840	0.842	0.375	0.000	1.000
United Kingdom	0.838	0.373	0.000	1.000	0.591	0.270	0.000	0.840	0.842	0.375	0.000	1.000
Japan	0.727	0.327	0.000	1.000	0.683	0.310	0.000	0.910	0.836	0.373	0.000	1.000

Table 6 (cont.). Summary statistics of quality governance indicators.

Market	Regulatory quality				Rule of law				Control of corruption			
	mean	s.d.	min	max	mean	s.d.	min	max	mean	s.d.	min	max
Panel A: Lower Middle Income												
Ghana	0.518	0.256	0.000	0.770	0.564	0.251	0.000	0.670	0.344	0.167	0.000	0.500
India	0.361	0.181	0.000	0.550	0.292	0.150	0.000	0.500	0.194	0.096	0.000	0.330
Nigeria	0.361	0.181	0.000	0.550	0.292	0.150	0.000	0.500	0.194	0.096	0.000	0.330
Morocco	0.599	0.281	0.000	0.770	0.722	0.332	0.000	1.000	0.395	0.184	0.000	0.500
Philippines	0.590	0.274	0.000	0.820	0.361	0.186	0.000	0.670	0.310	0.164	0.000	0.670
Ukraine	0.375	0.225	0.000	0.640	0.529	0.281	0.000	0.670	0.232	0.145	0.000	0.500
Pakistan	0.401	0.234	0.000	0.730	0.443	0.204	0.000	0.670	0.266	0.131	0.000	0.500
Panel B: Upper Middle Income												
South Africa	0.646	0.311	0.000	0.910	0.348	0.175	0.000	0.670	0.378	0.197	0.000	0.830
Thailand	0.528	0.250	0.000	0.730	0.440	0.258	0.000	0.830	0.262	0.130	0.000	0.500
Tunisia	0.545	0.263	0.000	0.820	0.699	0.311	0.000	0.830	0.337	0.166	0.000	0.500
Turkey	0.498	0.241	0.000	0.820	0.571	0.264	0.000	0.750	0.335	0.158	0.000	0.500
Brazil	0.476	0.224	0.000	0.640	0.293	0.143	0.000	0.500	0.382	0.202	0.000	0.670
China	0.480	0.227	0.000	0.820	0.596	0.277	0.000	0.830	0.271	0.138	0.000	0.420
Mexico	0.673	0.315	0.000	0.950	0.319	0.165	0.000	0.500	0.310	0.164	0.000	0.670
Panel C:High Income												
Australia	0.746	0.360	0.000	1.000	0.800	0.358	0.000	1.000	0.661	0.296	0.000	0.830
Belgium	0.674	0.326	0.000	0.950	0.708	0.317	0.000	1.000	0.587	0.279	0.000	0.830
Canada	0.780	0.372	0.000	1.000	0.817	0.365	0.000	1.000	0.709	0.327	0.000	1.000
Germany	0.765	0.358	0.000	1.000	0.717	0.323	0.000	1.000	0.674	0.304	0.000	0.830
Chile	0.749	0.342	0.000	0.950	0.678	0.304	0.000	0.830	0.580	0.277	0.000	0.750
Israel	0.647	0.305	0.000	0.820	0.699	0.311	0.000	0.830	0.468	0.224	0.000	0.830
United States	0.808	0.366	0.000	1.000	0.726	0.329	0.000	1.000	0.581	0.265	0.000	0.830
United Kingdom	0.762	0.353	0.000	1.000	0.777	0.351	0.000	1.000	0.615	0.279	0.000	0.830
Japan	0.737	0.362	0.000	1.000	0.717	0.323	0.000	1.000	0.516	0.261	0.000	0.830

Rule of law (ROL), which reflects the extent to which citizens of a country have confidence in the courts, the police, the level of contract administration and the tendency of crime and violence, interestingly is seen to affect EQIND rather negatively at 5 per cent level of significance. Thus, countries with higher ratings of rule of law were seen to have lower equity indices. The trustworthiness of governments, the reliability of courts, and the full disclosures of accounting standards in the countries of the common law system significantly affect stock market returns (Djankov *et al.*, 2003). La Porta *et al.* (1998, 1999) report that the countries with English common law origin provide the strongest legal protection to investors. Our empirical results confirm that risk and performance of a financial asset are related to the tradition of commercial law in a country. The stocks in the countries with French/Spanish civil law origin are the most volatile. The result validates the study hypothesis. Control of corruption (COC) has a negative relation with EQIND at 10 per cent level of significance. This implies that the more countries focused on reducing or controlling corruption, the more they scored in terms of their equity index. Various studies which support this result include the work of Mauro (1995) which affirms that corruption leads to lower levels of investment and growth. Wei (1997) finds that corrupted countries attract less foreign direct investment. The presence of corruption reduces investors' confidence in the rules that guide their businesses and thus boost investors' risks of dealing in such financial market. (Ng, 2006).

Table 7. Regression results from fixed effects estimation.

VARIABLES	Equity Indices
VACC	1.3737***
	(0.2984)
PSAV	3.0881
	(2.8966)
GEFF	-2.0337
	(2.1716)
RQUA	0.6989**
	(.2911)
ROL	-3.7122***
	(0.4282)
COC	0.6552*
	(0.2992)
INF	-4.4678
	(4.2992)
GDPG	1.6062***
	(0.0454)
CONSTANT	5.8404***
	(1.5331)
Observations	437
Adj. R-squared	0.2392
Hausman	61.33
Prob > F	0.0000
F(8, 430)	144.25
Prob > chi2	0.0000

Note. *** $p<0.01$; ** $p<0.05$; * $p<0.1$

Table 8 presents the results of fixed effect estimation, by grouping the observations into three: higher income, upper middle income and lower middle income countries. Voice and

accountability (VACC) had a negative impact on EQIND in high income and lower middle income countries, and these impacts were significant at the 1 per cent and 10 per cent levels respectively. The implication is that, for both high income and lower middle income countries, an increase in voice and accountability would result in reduced equity indices. For the high income states, political stability and absence of violence (PSAV) had a positive impact on EQIND at the 5 per cent significance level. However, it was not significant for the other income classes. Interestingly, government effectiveness (GEFF) had a significantly negative impact on EQIND among the high income countries at 5 per cent level of significance, but also had a 5 per cent significant positive impact among the lower middle income class of countries. Thus, an improvement in government effectiveness would reduce equity indices in high income states and increase equity indices in lower middle income states. Although regulatory quality (RQUA) had no significant impact on EQIND among both high and upper middle income countries, the impact was positive and significant among the lower middle income countries at the 5 per cent level. Thus, lower income countries would benefit significantly from improvement in regulatory quality. ROL had a significant positive impact on EQIND among the upper middle income and high income countries at 5 per cent and 10 per cent respective levels of significance, but also had a 1 per cent significant negative impact among the lower middle income class of countries. Thus, an improvement in government effectiveness would increase equity indices in high income states but will reduce equity indices in lower middle income states. COC had a significant positive impact on EQIND among the upper middle income countries at 1 per cent level of significance.

Table 8. Regression results from fixed effects estimations.

| VARIABLES | INCOME CLASS | | |
	High income	Upper-middle income	Lower-middle income
VACC	-0.7635***	-0.8864	-0.8250***
	(0.1217)	(0.5352)	(0.0259)
PSAV	3.2525*	2.1666	1.6656
	(1.5180)	(5.2712)	(3.1173)
GEFF	0.8569**	-0.8249	-0.9343**
	(0.3622)	(0.4556)	(0.3931)
RQUA	2.9788	0.7375	0.8054***
	(2.0091)	(0.9843)	(0.2248)
ROL	- 0.6156***	1.0025**	0.7268*
	(0.2055)	(0.5118)	(0.3505)
COC	0.7360	0.4252***	0.5524
	(0.5684)	(0.0575)	0.3979
INF	0.0347	0.6248	0.0257
	(0.3468)	(0.4972)	(0.1685)
GDP	0.5256*	0.6787**	0.4674***
	(0.2566)	(0.2088)	(0.0467)
CONSTANT	-1.7959	-1.0238	-0.9171
	(1.7588)	(1.0737)	(0.5846)
Observations	171	133	133
Adj. R-squared	0.1754	0.2255	0.2712
Hausman	77.0535	77.0535	77.0535
Prob > F	0.0000	0.0000	0.0000
F-Statistic	95.47	100.85	108.43
Prob > F	0.0000	0.0000	0.0000

Note. *** $p<0.01$,;** $p<0.05$; * $p<0.1$

6. Discussion and implications

The sample employed in this study comprised of 23 countries with complete relevant data for the period from 1996 and 2014. The data is collected from different sources. The global equity indices were obtained from the World Bank Development Indicators DataStream and are broadly representative of each country's market composition to investigate the relation between quality of governance and stock market performance within the context of international markets using a fixed effect model. The study reveals that quality of governance as captured by Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption significantly affect stock market performance. Varying effects are produced when the countries are decomposed into income classifications. What is more, the findings and suggestions of this study suggest that quality of government significantly affect foreign direct investment and could have interesting policy implications. Such examination of the relation between quality of governance and stock market performance using most recent data is a contribution to empirical literature. From the findings of the study, the authors recommend the strategic managerial and policy implications that follow.

Managerial Implication

The results of this study offer some strategic implications for Security and Exchange Commission (SEC), financial institutions and financial consulting firms. First and foremost the results demonstrate that quality of governance is statistically significant with stock market performance, consistent with Hooper *et al.* (2009). This indicates that strong stock market performance is largely a result of an efficient institutional environment. Besides, investors who are not risk lovers would like to invest in countries with mean-variance efficiency. This shows that the quality of governance lowers both transaction and agency costs and creates value for shareholders. The result of this paper incorporates various positions of the world business literature from different perspectives i.e. the call for institutional reforms, standardized rules and regulation (Clark, 2003), especially a revitalization of regulation (Ngugi, 2003), since a tight regulation will lead to greater market efficiency and low volatility (Mutenheri and Green, 2003). Furthermore, corruption remains dire in the continent and represents a significant risk to financial market development. Therefore as a policy recommendation to the governments of the sampled countries especially maintain sound regulation quality and respect for the rule of law (Bartels *et al.*, 2009; Toumi, 2011; Darley, 2012). Measures should be put in place in African countries to avoid violence and political instability.

Policy Implication

The results of` this study have some policy implications for governments of various markets and other regulators. Many stock markets found in the lower middle income countries within the

Sub-Saharan African particularly in the French speaking countries are taking too long to pick-up. Regulatory environment and institutional arrangements significantly influence stock market development. Unfortunately, these unique arrangements have been discounted; therefore, policies that improve the condition of the political environment of a country should be pursued moderately since it has an important impact on the equity market. The findings of this study highlight the importance of the political dimension and thus imply that political reform deserves urgent policy attention in countries with weak political structures. These surely deserve attention in future research.

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