INSTITUTIONAL QUALITY, EASE OF DOING BUSINESS AND STOCK MARKET RETURNS

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Abstract

The significance and contribution of stock market in an economy cannot be overemphasised, as it is a veritable tool for financing and investment for business organizations. The quality of institutions plays a vital role in determining the returns on stock. Countries with well-functioning institutions have a strong legal structure that allows for the effective mobilisation and deployment of financial resources, promoting a safer and more conducive business environment. The study examines the interacting effect between institutional quality and ease on doing business on stock market returns in Africa over the period of 2009 to 2022 for nine stock exchanges in Africa. The Bayesian panel regression and Bayesian Moving Average were used as its estimation technique,and the MM quantile regressions as its robustness check for the model. The study revealed that control of corruption, regulatory quality, rule of law, voice and accountability, political stability and absence of violence and terrorism,government effectivenessand ease of doing business were statistically significant in explaining the changes in stock market returns in Africa. Similarly, it was also discovered that the interaction between institutional quality and ease of doing business has a significant effect on stock market returns in Africa. The study concludes that creatingbusiness-friendly and institutional policies this influences organizational performance increases the stock market returns and send positive signals to foreign investors, indicating a stable and transparent business environment.

Introduction

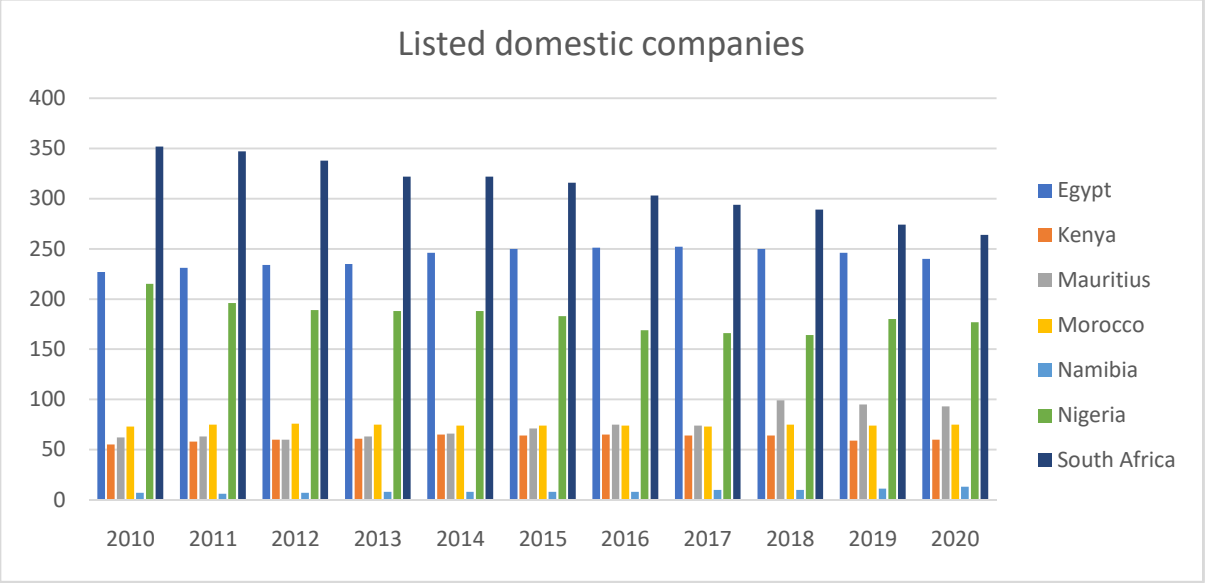
The development of a sound and effectivenessof institution for the growth of financial institutions,stock market, and overall economic performance is a major concern for both developed and emerging economies. In recent years, scholars have intensively focused on the

importance of institutional quality for the growth and development of the stock market,considering that the stock market is an integral part of the global financial system and continuously emphasizes its crucial role in economic well-being in emerging and developing countries(Ngare et al., 2014).Studies have shown that institutions play a crucial role in implementing laws and regulations, as well as monitoring political, social, and economic activities(Manasseh et al., 2017). Effective and efficient institutions play a critical role in ensuring macroeconomic stability and fostering social cohesion, thereby enhancing market efficiency and promoting business growth (Khan et al., 2018). According toManasseh et al. (2017), countries with well-functioning institutions have a strong legal structure that allows for the effective mobilization and deployment of financial resources, promoting a safer and more conducive business environment.

Similarly, Singh and Pradhan (2022) stated that institutional quality plays a profound role in fuelling overall macroeconomic development in a country, whileYartey (2010) asserting that the growth of developing stock markets is significantly influenced by key factors such as the regulatory framework, quality of governance, and political risk. However, the lack of sufficient regulatory structure and oversight has the potential to diminish investor confidence and weaken the overall performance of the market and economy (Yartey, 2007). Furthermore, the quality of institutions has the potential to influence the cost of doing business as well as the stability of stock market returns and volatility(Sonenshine & Erickson, 2022).The effectiveness of the institutional environment strengthens market integrity through the viable rule of law to promote investor confidence(Ogbuabor et al., 2020). According to Otchere et al. (2017), the growth and market capitalization value of the stock market in some African countries have been hindered by many factors, including inadequate liquidity, inappropriate regulatory frameworks, political instability, foreign exchange and convertibility challenges, tax policies, and foreign portfolio investment restrictions.

Another challenge facing stock markets in Africa is the occurrence of insider abuse, where individuals with privileged access to information manipulate market events by spreading market rumours, thereby influencing stock market transactional (Yartey, 2007). Consequently, an organization's performance plays a crucial role in determining its stock returns. Companies with strong financial performance, high profitability, and consistent growth are more likely to attract investors and experience higher stock returns (Jiang et al., 2020). Investors are more likely to invest in countries or regions with favourable business environments, as this signals stability and potential for growth(Wei et al., 2019). There is evidence that ease of doing business has a positive impact on stock market returns, and as such, countries with higher ease of doing business rankings tend to have higher stock market returns (Hassan & Al refai, 2012).

Figure1: Listed Firms in Selected Stock Exchanges in Africa



Source: World Bank (2022).

A plethora of studies investigate the impact of institutional quality on stock market returns in Africa, complementing the existing literature in two ways. First, studies on institutional quality and stock market returns in Africa are country and region specific. For example, Ogbuabor et al. (2020)focused on West Africa, Yartey (2007)covered Sub Saharan Africa, Ojeka et al. (2019)and Manasseh et al. (2017)focused on Nigeria, Asongu (2012) covered 14 countries in Africa, La Porta et al. (1999)focused on some selected countries in Africa, while Ongo Nkoa et al. (2023) focused on 50 countries in Africa. Most of these studies use political risk, democracy, corruption, and legal requirements as proxies for institutional quality. However, there appear to be few or no studies that model six institutional qualities developed by Kaufmann et al. (2009) as determinants of stock market returns in Africa: voice and accountability, political stability and absence of violence or terrorism, government effectiveness, quality of regulation, rule of law, and corruption control, which are considered benchmarks for measuring institutional quality worldwide.

Additionally, to the best of our knowledge, this is the first study to investigate the effect of ease of doing business on the relationship between institutional quality and stock market returns in Africa. This study contributes to the literature by showing how ease of doing business can moderate the relationship between institutional quality and stock market returns in Africa. Based on our results, it was also discovered that Control of Corruption (CC), Regulatory Quality (RQ), Rule of Law (RL), Voice and Accountability (VA), Political Stability and Absence of Violence and Terrorism (PSAVT), Government Effectiveness (GE), and Ease of Doing Business (EDB) were statistically significant in explaining the changes in stock market returns in Africa. In addition, the results also reveal that the interaction between institutional quality and ease of doing business has a significant effect on stock market returns in Africa. The remainder of this paper is organized as follows. Section two reviews the literature and the theoretical framework. Section three and four presents the methodology and results and finding while, the sections five

provide conclusions and recommendations for the study.

2.0 Literature Review and Theoretical Framework

The theoretical framework adopted for the study is New Institutional Economics (NIE), which was drawn primarily from the work ofNorth (1990) and North and Thomas (1973). These studies incorporated the influence of institutions into their analysis and emphasized the importance of institutions as a major determinant of development and long-term economic performance. NIE views political and institutional factors as playing an important role in facilitating market development (North, 1990). This new train of thought shows that the financial market does not operate in a vacuum, but is affected by some factors, including a set of institutions. These institutions play a major role in monitoring the level of transparency in the market, government activities, and the country's competitiveness. In addition, institutional quality not only affects the aforementioned factors but also the level of foreign direct investment. Theoretically, the NIE shows that effective institutions can make a difference in the success of market reforms and even assume that institutions represent crucial factors for long-term economic growth (Yahyaoui & Rahmani, 2009). Institutional quality and ease of doing business are key factors that contribute to the overall economic performance and competitiveness of a country.Countries with developed institutions have comfortable and viable business environments in which firms can follow market strategies and do not require political connections to improve their performance(Ashyrov & Lukason, 2022).

In addition, countries with good institutional qualities, including political stability, security, controlled corruption, and enforcement of the rule of law, often create a favourablebusiness environment for foreign investors and reduce the cost of business operations because of fewer barriers and streamlined bureaucratic processes (Dennis & Ibekwe, 2018). According toLee et al. (2016), voice and accountability refer to the extent to which citizens can participate in government decision-making processes and enjoy freedom of expression, association, and the media.Studies show a positive correlation between voice, accountability, and stock market returns(Fagbemi et al., 2021).Rosdiana (2020) argued that countries with higher levels of voice and accountability tend to have more stable and efficient governments, which in turn can lead to higher stock market returns. Additionally, countries with stronger governance in terms of voice and accountability are often perceived as having a more favourable investment climate (Cuñat et al., 2016).

Mehmood et al. (2023) claimed that political stability captures perceptions of the likelihood of destabilizing or overthrowing the government. Political stability is a critical factor that drives stock market performance. Investors tend to have greater confidence and trust in countries with political stability, leading to increased investments in their stock markets. This stable political environment helps build trust among investors and contributes to the country's positive economic performance. In addition to the lack of transparency, weak political institutions have been proven to have negative effects on banking performance. Kilian (2008) reported that political instability leads to macroeconomic uncertainty, thereby deteriorating asset quality (non-performing loans) and off-balance sheet activities.Ajide (2014) argues that low levels of corruption and government effectiveness influence stock market growth and development, whereas political

instability has a negative impact on stock market growth.As stated byHooper et al. (2009), better governance quality reduces transaction and agency costs by achieving economies of scale; thus, higher governance quality increases shareholders' stock returns.

However, Low et al. (2011)claimed that countries with poor governance quality in terms of political instability, weak investor protection laws, inefficient government, bad regulatory quality, and less control over corruption lead to higher stock returns compared to countries with greater governance quality.Government effectiveness indicates the level of quality in the provision of public services, bureaucracy, provision, and competency of civil services without any political interference, and the integrity of the government's commitment to policies(Imran et al., 2020). Imran et al. (2020)argues that regulatory quality indicates unfriendly market policies such as inadequate bank supervision and price control. Similarly, regulatory quality also explains unaligned and unplanned excessive regulations on foreign trade and business development. Regulatory bodies formulate certain policies that prevent any activity in the stock market, which harms the interests of the public or investors. Moreover, regulatory quality forces firms to fully disclose information to prevent insider trading(Imran et al., 2020).Mehmood et al. (2023) contends that regulatory quality entails the government's willingness to enforce sound policies and regulations that permit and encourage private sector growth, while Akyol et al. (2014)opining that securities regulation increases the quality of financial reporting and transparency and maintains investors' confidence.

The rule of law measures how effective, enforceable, and predictable the judicial system is in a country. This demonstrates the effectiveness of the law in safeguarding contractual obligations and property rights. This indicator can also be used as a proxy for how nations achieve success and develop an environment that favours social interaction and economic progress (Imran et al., 2020). Additionally, the rule of law captures agents' perceptions or confidence regarding compliance with the rules of society, the quality of enforcing contracts, property rights, the police, and the judiciary, as well as the possibility of violence and crime(Mehmood et al., 2023). Another study by Beck et al. (2004) and Johnson et al. (2002)argues that high legal protection for investors and creditors, as well as full elimination of the ambiguity and deviousness of the financial sector, draw the interest of economic intermediaries in an economy. According toNatalia (2018), corruption includes bribery, extortion, and misuse of insider information and thrives when policy enforcement is lacking. Athanasouli et al. (2012) found that bribery and corruption have detrimental effects on the size and development of firms in Greece. Gaviria (2002) claimed that corruption reduces a company's turnover and growth, thus undermining its competitive position.

Bolgorian (2011) also noted a negative correlation between corruption and stock market growth. Additionally, Sonenshine & Erickson (2022)stated that corruption has the potential to increase corporate spending, thereby reducing profitability and stock market return.Institutional quality and ease of doing business are important factors that contribute to a country's overall economic performance and competitiveness. Countries with developed institutions tend to have comfortable business environments in which firms can follow market strategies, and do not necessarily need political connections to improve their performance(Ashyrov & Lukason, 2022). In addition, these countries often have

good institutional qualities, including political stability, security, controlled corruption, and the enforcement of the rule of law (Dennis & Ibekwe, 2018). These attributes often create a favourable climate for foreign investors and reduce the cost of business operations because of fewer barriers and streamlined bureaucratic processes. Furthermore, good institutional quality and ease of doing business send positive signals to foreign investors, indicating a stable, transparent business environment. Similarly, investors are more likely to choose these countries for their business ventures, as they can expect lower risks and higher returns (Cuervo-Cazurra et al., 2019).

Ali et al. (2022) used Westerlund Panel cointegration, dynamic system GMM and Dumitrescu-Hurlin Causality to investigate the impact of natural resource rents on the stock market and the role of institutional quality in managing resource revenues in shaping stock market development from 1991 to 2019 for G7 economies. The results show that resource rent has a positive effect on the stock market and institutional quality plays a moderating role in enhancing stock market resources. Imran et al. (2020) used panel regression analysis to examine the relationship between stock market performance and country-level governance indicators. The study used annual stock returns and country-level governance indicators for twenty-five developed countries covering the period from 1996 to 2018. The results reveal that stock market performance and governance indicators share a positive relationship, and as such, a high quality of governance is associated with higher returns on stocks.

In the African context, Ongo Nkoa et al. (2023) used the system-generalized methodologies of the moment technique are used to analyse the impact of political and legal institutions on the growth of financial markets in 50 African nations between 1996 and 2016. The results revealed that the growth of financial markets in Africa may be attributed to the calibration of political and legal institutions. Sonenshine and Erickson (2022) used a panel data analysis method to investigate the impact of institutional characteristics, such as democracy, transparency, and corruption, on emerging market returns and equity flows. The findings suggest that institutional quality impacts stock market returns and flows in emerging markets, where corruption, transparency, and democracy levels are below average. Bamanga et al. (2018) investigated the impact of regulatory quality on African stock market development with a focus on 12 African stock countries by employing a pooled mean group model covering the period 1996–2016. The findings reveal that quality regulations have a positive impact on stock market development. Aluko and Azeez (2019) used the two-stage least squares estimator to examine the effectiveness of legal institutions in stock market development in 11 countries in Sub-Saharan Africa, covering the period between 2000 and 2014. The results reveal that the effectiveness of legal institutions does not promote stock market development in sub-Saharan Africa after controlling for income, banking sector development, inflation, endowments, capital account liberalization, culture, and democracy.

Table 1: Summary of Empirical Review

Authors	Country	Method	Measure	Result
Autore et al. (2014) 1998-2008	37 Countries	Panel data analysis	financial reporting practices, law enforcement,public trust, outside monitoring affect and IPO's Issue	Country IQ has effect on Initial public Offering
Eldomiaty et al. (2016) 1996–2014	MENA	Panel Fixed and Random Effect	Stock market volatility property rights, freedom from corruption,fiscal freedom,government spending, business freedom, labour freedom, monetary freedom, trade freedom, investment freedom and financial freedom	Stock marketvolatility is reduced when economic freedom is associated with an effective IQ
Bayar (2016) 2002-2013	8 European Union transition economies during	Panel regression analysis	Stock market development, political stability, regulatory quality, rule of law and control of corruption	IQ haspositive impact on stock market development.
Winful et al. (2016) 1996 to 2011	41 Emerging Countries	Dynamic Panel data Analysis Generalized method of moment's technique	Voice and Accountability, Corruption Control, Government Effectiveness, Political Stability, Regulatory Quality and Rule of Law, Institution quality index and stock market capitalization to GDP	Institutional quality has a positive influence on stock market performance.
Manasseh et al. (2017) 1985 to 2013	Nigeria	Autoregressive Distributed Lag Model and ARDL bounds testing procedure	corruption control, democratic accountability, bureaucratic quality, and stock market capitalization	Institutional quality has a positive effect on stock market development in Nigeria
Nguyen et al. (2022) 2002 to 2013	34 Emerging Countries	Sys-GMM Panel model	Stock market returns, turnover, inflation, GDP growth rate, interest rate, exchange rate, credit to private sector, FDI, M2 to GDP, Government effectiveness, rule of law, regulation quality and control of corruption	Macro liquidity and Institutional quality has a positive effect on stock market returns
Imran et al. (2020) 1996 to 2018	25 Developed Countries	Principal Component Analysis	Corruption Control, Effectiveness, Stability, Regulatory, Law, Voice,	Governance quality indicators has a positive

		Panel Data Analysis	Inflation, Volume, Oil Prices	relationship with stock market performance
Lakshmi et al., (2021) 1995-2014	BRIC, Brazil, Russia, India and China	Extreme Bound Analysis, Dynamic panel data analysis	Corruption, bureaucratic quality, law and orderand democratic accountability	Corruptions affect stock market returns
Sonenshine & Erickson (2022) 2000-2017	Emerging markets	Panel data analysis	corruption, transparency, democracy levels and stock market returns	IQ has a significant impact on stock market returns
Ali et al. (2022) 1991 to 2019	G7 Countries	Westerlund Panel cointegration, dynamic system GMM and Dumitrescu-Hurlin Causality analysis	stock market development, natural resources revenue, economic growth, foreign direct investment, institutional quality and the moderating variables between natural resources revenue and institutional quality	Natural resource rent and institutional quality have a significant effect on stock market development

Source: Author's Computation (2025)

3.0 Methodology

This study focuses on selected stock exchanges in Africa using data fromnine stock markets in Africa between 2009 and 2022. The list of selected stock markets in Africa based on the availability of data is shown in the table below.

Table 2: List of selected African Countries

Countries	Stock Exchange	Stock Market Index	Founded
South Africa	Johannesburg Stock Exchange	JALSH Index	1887
Nigeria	Nigerian Stock Market	NGXINDX Index	1960
Egypt	Cairo Stock Exchange	HERMES Index	1903
Tanzania	Tanzania (Dares Salaam Stock Exchange)	DARSDSEI Index	1996
Mauritius	Stock Exchange of Mauritius	SEMDEX Index	1989
Kenya	Nairobi Stock Exchange	NSEASI Index	1954
Ghana	Ghana Stock Exchange	GGSECI Index	1989
Zambia	Lusaka Stock Market	LUSEIDX Index	1993
Botswana	Botswana Stock Exchange	BGSMDC Index	1989

The justification for the choice of the selected stock market index in Africa wasbased onthe operational stock market index in Africa and the top stock market index in Africa, based on market capitalization and volume of transactions and countries in Africa with data on the ease of doing business. The ease of doing business is the justification for the benchmark for the period of the study, as data on the ease of doing business started in 2009.

Table 3: Variables and Measurements

Variables	Abbreviations	Sources
Stock Market Returns	SMR	Bloomberg Terminal
Government Effectiveness,	GE	World development indicators
Rule of Law,	RL	World development indicators
Regulation Quality	RQ	World development indicators
Control of Corruption	CC	World development indicators
Voice and Accountability	VA	World development indicators
Political Stability and Absence of Violence/Terrorism	PSAVT	World development indicators
Ease of Doing Business	EDB	Bloomberg Terminal

To achieve theobjective of this research, we follow extant theoretical and empirical literature related to this study. The study used the six institutional qualities developed by Kaufmann et al. (2009) as determinants of stock market returns, such as voice and accountability, political stability and absence of violence or terrorism, government effectiveness, quality of regulation, rule of law, and corruption control, which are considered benchmarks for measuring institutional quality worldwide. In addition, the institutional quality index is measured by constructing an index using principal component analysis (PCA) based on the six models of institutional quality. The principal component analysis uses a mathematical procedure to transform correlated variables into linearly uncorrelated variables, the so-called principal components(Jolliffe & Cadima, 2016). This index is defined as the first principal component of the correlation matrix of the factors, with the current or lagged value of the respective proxy having a higher correlation with the first stage index.

$$\text{Institutional Quality}_{it} = \theta_1 VA_{it} + \theta_2 PSAVT_{it} + \theta_3 GE_{it} + \theta_4 RQ_{it} + \theta_5 RL_{it} + \theta_6 CC_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

The institutional qualities were proxied by Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption, while θi represents the factor loadings on the first principal components of the proxieslagged and contemporaneously.The model adopted for this study was developed based on several studies, such asAutore et al. (2014), Eldomiaty et al. (2016), Manasseh et al. (2017), Obenpong Kwabi et al. (2023) and Ojeka et al. (2019) those

investigating the extent to which institutional quality determines the sensitivity of stock market returns in Africa. The model is specified as follows.

$SMR_{it} = \beta_0 + \beta_1 VA_{it} + \beta_2 PSAVT_{it} + \beta_3 GE_{it} + \beta_4 RQ_{it} + \beta_5 RL_{it} + \beta_6 CC_{it} + \mu_{it}$……..……..……..*(2)*

Where SMR is Stock Market Returns, VA is voice and accountability, PSAVT is political stability and absence of violence/terrorism, GE is government effectiveness, RQ is regulatory quality, RL is rule of law, and CC is control of corruption; the subscripts $_i$ and $_t$ refer to the cross-dimension and time-series dimensions of the model, respectively, explaining the panel nature of the model.To account for the moderating role of ease of doing business in the above equation, we re-write the equation to capture the interaction effects, as shown below:

$SMR_{it} = \beta_0 + \beta_1 VA_{it} + \beta_2 PSAVT_{it} + \beta_3 GE_{it} + \beta_4 RQ_{it} + \beta_5 RL_{it} + \beta_6 CC_{it} + \beta_7 IQ \times EDB_{it} + \beta_8 EDB_{it} + \mu_{it}$…… *(3)*

In Equation (3), IQ × EDB is the interaction variable, IQ is institutional quality, and EDB is the ease of doing business.μ_{it} is the error term, $_t$ and $_i$ are time and country identity, respectively. As a form of robustness, we employed a battery of econometric analyses to validate the baseline results. This study employedan innovative moments-quantile regression (MM-QR) method. This estimation method considers the distribution and heterogeneity of the independent variables' effects on the explained variable(Machado & Silva, 2019). This method is efficient for addressing the fixed effect's structure and panel quantile regression. It offers conditional distribution estimates for the 10th, 25th, 50th, 75th, and 90th percentiles of dependent variables. equation (3) can be reformulated as the conditional quantile

$QSMR\ (\tau_j/X_{it}) = (\sigma_i + \gamma_{iq}(\tau)) + X'\beta(\tau_i) + \emptyset_i(\tau_j) + U_t(\tau_j),\ \tau_j \epsilon (0, 1)$…….(4)

$QSMR\ (\tau_j/X_{it})$ is the quantile of the SMR conditioned on X_{it}, implying that the SMR variable is conditioned on the location of the independent variable, X_{it}. The corresponding fixed effect of the quantile τ for individual cross-sectional units is defined by the scalar coefficient $\sigma_i + \gamma_{iq}(\tau)$. $\emptyset_i$ and U_t are unobserved country identity and time identity for fixed effect. Quantile estimates depend on the scale and location coefficients(Rehman et al., 2021).In addition, Bayesian regression was employed to validate the consistency of the MM-QR results. One advantage of the Bayesian technique is that it effectively manages sample bias, heteroscedasticity, and endogeneity problems.

$y = X\Lambda + \epsilon$, where $\epsilon \sim N\ (0, \tau^{-1} I_{NT})$……(5)

Where y represents a panel of N × T. X is the matrix of explanatory variables of size NT × (K + N) and Λ is the vector is of length K + N.

4.0 Result and findings

Table 4: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Stock Market Returns	126	11398.40	17670.52	68.04	73709.39
Control of Corruption	126	-0.31	0.59	-1.28	1.00
Government Effectiveness	126	-0.24	0.60	-1.21	1.15
Regulatory Quality	126	-0.12	0.60	-1.16	1.20
Rule of Law	126	-0.18	0.56	-1.18	1.02
Voice and Accountability	126	-0.03	0.65	-1.51	0.94
Political Stability and Absence of Violence/Terrorism	126	-0.31	0.97	-2.21	1.10
EDB	126	92.39	39.47	13.00	175.00

Source: Author's Computation, (2025)

Table 5: Principal components/covariance

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1559.570	1558.690	0.999	0.999
Comp2	0.880	0.709	0.001	1.000
Comp3	0.171	0.040	0.000	1.000
Comp4	0.131	0.091	0.000	1.000
Comp5	0.040	0.017	0.000	1.000
Comp6	0.023	0.015	0.000	1.000
Comp7	0.008	.	0.000	1.000

Source: Author's Computation, (2025)

The table above shows the breakdown of different components alongside their eigenvalues and the proportions of the principal components analysis. The results showed that the first component had an eigenvalue of 1559.570 and proportion of 0.999. This implies that 99.9% of the variables are captured in the first component, while the remaining percentage of 0.001% are not captured in the first component, but captured in the second components of the principal components analysis.

Table 6: Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Comp7	Unexplained
CC	-0.010	0.403	-0.048	0.288	-0.852	-0.135	-0.085	0
GE	-0.013	0.253	0.298	0.463	0.303	0.173	-0.714	0
RQ	-0.013	0.264	0.321	0.306	0.286	-0.715	0.375	0
RL	-0.011	0.308	0.090	0.357	0.101	0.652	0.579	0
VA	-0.011	0.331	0.692	-0.621	-0.109	0.117	-0.014	0
PS	-0.017	0.706	-0.564	-0.310	0.279	-0.057	-0.082	0
EDB	1.000	0.029	0.007	0.005	0.004	-0.001	-0.000	0

Source: Author's Computation, (2025)

The table above shows the breakdown of the eigenvectors of all the variables, and it was revealed that the eigenvector of the first component for CC is (-0.010), GE is (-0.013), RQ is (-0.013), RL is (-0.011), VA is (-0.011), PS is (-0.017) and EDB is (1.0000). This implies that the first component should be adopted as a proxy for institutional quality.

Table 7: Pairwise correlations

Variables	(SMR)	(CC)	(GE)	(RQ)	(RL)	(VA)	(PS)	(EDB)	(Interact)
SMR	1.00								
CC	-0.07	1.00							
GE	-0.07	0.84*	1.00						
RQ	-0.08	0.84*	0.96*	1.00					
RL	-0.14	0.90*	0.95*	0.91*	1.00				
VA	0.20*	0.70*	0.74*	0.79*	0.73*	1.00			
PSAVT	-0.25*	0.87*	0.76*	0.78*	0.85*	0.71*	1.00		
EDB	0.02	-0.68*	-0.84*	-0.84*	-0.80*	-0.67*	-0.67*	1.00	
Interact	0.04	-0.67*	-0.78*	-0.78*	-0.75*	-0.63*	-0.68*	0.97*	1.00

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Author's Computation, (2025)

The table above reveals that there is a negative relationship between Control of Corruption (CC), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Political Stability Absence of Violence and Terrorism and Stock Market Returns (SMR), while Voice and Accountability (VA) and Ease of Doing Business show a positive relationship with Stock Market Returns (SMR) in Africa.

Table 8: Bayesian panel regression result using income classification of countries.

Variables	All Countries	Lower middle-income countries	Upper-middle income countries
CC	-0.1743**	-12.4285	-6.6529
	(0.0182)	(1.0161)	(1.0237)
GE	-0.0283**	-16.7167	-0.1047
	(0.0261)	(0.9919)	(1.0374)
RQ	-0.7951***	-12.0625	-4.3412
	(0.0082)	(0.9831)	(1.0182)
RL	0.4857***	-13.1149	-2.1121
	(0.0063)	(1.0152)	(1.0071)
VA	0.3688**	-2.6814	1.7164
	(0.0228)	(1.0030)	(0.9936)
PSAVT	-0.2928**	-26.7739	-9.7246
	(0.0141)	(0.9997)	(0.9962)
EDB	0.0199***	-134.3801	60.2225
	(0.0001)	(5.4997)	(0.9333)
Interacts	-0.00009***	1.6170**	4.4410**
	(0.0000)	(0.0383)	(0.0144)
Constant	-1.1534*	-1.3569	2.4298
	(0.0511)	(1.0048)	(1.0003)
Year Effect	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes
Iterations	12500	12500	12500
Burn-in	2500	2500	2500
Sample Size	10000	10000	10000
Acceptance Rate	83%	98%	82%
Countries	9	6	3

Note: Monte-Carlo standard errors are in parentheses, and *, **, *** for level of significance at 10 %, 5 %, and 1 % respectively. Robust standard errors are indicated in parentheses.

The Bayesian result shows that the institutional quality for lower-middle income and upper-middle income countries was not significant in explaining the changes in stock market returns; however, the interaction between institutional quality and ease of doing business was significant in explaining changes in stock market returns. Additionally, the Bayesian results for all the countries show that all institutional quality variables, such as Control of Corruption (CC), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Voice and Accountability (VA), Political Stability and Absence of Violence and Terrorism, were statistically significant in influencing the changes in stock market returns. It could be further deduced that Control of Corruption (CC), Government Effectiveness (GE), Regulatory Quality (RQ), Political Stability and Absence of Violence and Terrorism have a negative relationship with stock market returns, while the Rule of Law (RL), Voice and Accountability (VA) have a positive relationship with stock market returns.

Additionally, the Bayesian result for all the countries shows that the Ease of Doing business (EDB) is statistically significant in influencing the changes in stock market returns, and a such,

it posed a positive relationship with stock market returns in Africa. Similarly, the interaction between institutional quality and ease of doing business shows a positive relationship with stock market returns; thus, an increase in the quality of institutions, such as (Control of Corruption (CC), Government Effectiveness (GE), Regulatory Quality (RQ), Political Stability and Absence of Violence and Terrorism) and Ease of Doing Business will lead to an increase in stock market returns in Africa.

Table 9: Bayesian Model Averaging Linear Regression

Variables	PIP	Posterior Mean	Posterior Std. Dev
VA	0.973	1.497	0.491
CC	0.969	1.416	0.521
PSAVT	0.968	-1.134	0.380
RQ	0.928	-1.155	0.576
RL	0.811	-0.873	0.665
GE	0.673	0.479	0.596
EDB	0.812	-0.005	0.004
Interact	0.637	-0.000	0.000
_Cons	1	0.472	0.374
Acceptance rate	0.4411		
Prior Probability Inclusion	0.5		
Mean Model size	6.772		
Mean Sigma	0.568		

Note: Coefficient posterior means and std. dev. estimated from 73 models.
Note: Default prior is used for models.

The PIP refers to the posterior inclusion probability of a particular regressor. Given that the prior inclusion probability is equal for all the variables (i.e., 0.5), those variables with PIP higher than 0.5 are labelled as robust determinants of stock market returns. The Bayesian moving average result shows that all the institutional quality variables such as Control of Corruption (CC), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Voice and Accountability (VA), Political Stability and Absence of Violence and Terrorism are determinants of stock market returns in Africa, as the Posterior Inclusion Probability for all the variables is higher than the prior inclusion probability of 0.5. Similarly, the coefficient of Ease of Doing Business (EDB) and the interaction between institutional quality and ease of doing business are also determinants of stock market returns as they are higher than the prior inclusion probability of 0.5. This finding corroborates the results of the Bayesian panel regression for the model.

4.2 Robustness Check

The study used the MM Quantile regression as its robustness check and MM-quantile regression at various conditional distributions of the dependent variable, such as 0.10, 0.25, 0.50, 0.75, and 0.90. We examine our baseline results in Tables 8 and 9. The MM-QR results are presented in Tables 10 and 11, and the graph is shown in the appendix.

Table 10: MM Quantile regression without interaction term

VARIABLES	Location	Scale	Q(10)	Q(25)	Q(50)	Q(75)	Q(90)
CC	1.3879***	0.0975	1.2604***	1.2604***	1.3897***	1.4871***	1.5822***
	(0.2251)	(0.1230)	(0.2483)	(0.2483)	(0.2274)	(0.2853)	(0.3563)
GE	0.7470	0.5581**	0.0174	0.0174	0.7575	1.3145**	1.8586***
	(0.5329)	(0.2354)	(0.6162)	(0.6162)	(0.5486)	(0.6087)	(0.6946)
PSAVT	-	-	-	-	-	-	-
	1.0020***	0.3695***	0.5188***	0.5188***	1.0089***	1.3777***	1.7380***
	(0.1547)	(0.0825)	(0.1481)	(0.1481)	(0.1722)	(0.2242)	(0.2333)
RL	-1.1079*	-0.0180	-1.0844	-1.0844	-1.1083*	-1.1262*	-1.1437
	(0.5915)	(0.2575)	(0.6736)	(0.6736)	(0.5917)	(0.6529)	(0.7915)
RQ	-	-	-0.1372	-0.1372	-	-	-
	1.2943***	0.8850***			1.3109***	2.1942***	3.0570***
	(0.4639)	(0.2084)	(0.5024)	(0.5024)	(0.5062)	(0.5954)	(0.6191)
VA	1.3694***	0.4984***	0.7178***	0.7178***	1.3788***	1.8762***	2.3620***
	(0.2278)	(0.1136)	(0.1999)	(0.1999)	(0.2539)	(0.3429)	(0.3465)
EDB	-0.0066**	-	-0.0010	-0.0010	-0.0066**	-	-
		0.0042***				0.0109***	0.0150***
	(0.0032)	(0.0014)	(0.0037)	(0.0037)	(0.0033)	(0.0036)	(0.0040)
Constant	0.5909*	0.9096***	-0.5983*	-0.5983*	0.6081*	1.5158***	2.4026***
	(0.3049)	(0.1281)	(0.3251)	(0.3251)	(0.3506)	(0.3916)	(0.4222)
Observations	126	126	126	126	126	126	126

*Note: *, **, *** for level of significance at 10 %, 5 % and 1 % respectively. Robust standard errors are in parenthesis.*

The MM Quantile regression without the interaction term shows thatControl Corruption (CC) is statistically significant in explaining the changes in stock market returns at the 0.10, 0.25, 0.50, 0.75, and 0.90quantiles, while Government Effectiveness is statistically significant in explaining the changes in stock market returns at the 0.75 and 0.90 quantiles. In addition, the coefficients of Political Stability and Absence of Violence and Terrorism are statistically significant in explaining the changes in stock market returns at 0.10, 0.25, 0.50, 0.75, and 0.90 quantiles. The coefficient of the Rule of Law (RL) is statistically significant in explaining the changes in stock market returns at the 0.50 and 0.75 quantiles, while the coefficient of Regulatory Quality is statistically significant in explaining the changes in stock market returns at the 0.50, 0.75, and 0.90 quantiles. Additionally, the results show that Voice and Accountability (VA) is statistically significant in explaining the changes in stock market returns at 0.10, 0.25, 0.50, 0.75, and 0.90 quantiles, while Ease of Doing Business (EDB) is statistically significant in explaining the changes in stock market returns at 0.50, 0.75, and 0.90 quantiles. The results further explain that Control Corruption, (CC) Government Effectiveness (GE), and Voice and Accountability have a positive relationship with stock market returns, while Regulatory Quality (RQ), Rule of Law (RL), Political Stability and Absence of Violence and Terrorism and Ease of Doing Business (EDB) have a negative relationship with stock market returns in Africa.

Table 11: MM Quantile regression with interaction term

VARIABLES	Location	scale	Q(10)	Q(25)	Q(50)	Q(75)	Q(90)
CC	1.4371***	-0.0618	1.5212***	1.4989***	1.4400***	1.3762***	1.3325***
	(0.2299)	(0.1236)	(0.2300)	(0.2243)	(0.2282)	(0.2894)	(0.3701)
GE	0.7903	0.4686**	0.1521	0.3213	0.7679	1.2520**	1.5832**
	(0.5325)	(0.2275)	(0.6184)	(0.5469)	(0.5433)	(0.6261)	(0.6860)
PSAVT	-0.9714***	-0.4787***	-0.3195	-0.4923***	-0.9485***	-1.4431***	-1.7814***
	(0.1787)	(0.0791)	(0.3210)	(0.1519)	(0.2053)	(0.2746)	(0.3412)
RL	-1.2071*	0.3407	-1.6711***	-1.5481***	-1.2234*	-0.8715	-0.6308
	(0.6255)	(0.2336)	(0.5840)	(0.5751)	(0.6249)	(0.7512)	(0.9066)
RQ	-1.3632***	-0.6815***	-0.4353	-0.6812	-1.3306***	-2.0346***	-2.5162***
	(0.4524)	(0.2047)	(0.5978)	(0.4702)	(0.4805)	(0.5788)	(0.5204)
VA	1.3615***	0.5134***	0.6623*	0.8477***	1.3369***	1.8673***	2.2302***
	(0.2367)	(0.0960)	(0.3394)	(0.1935)	(0.2642)	(0.3500)	(0.2936)
EDB	-0.0122	0.0183***	-0.0370***	-0.0304***	-0.0130	0.0058	0.0187
	(0.0090)	(0.0041)	(0.0117)	(0.0079)	(0.0098)	(0.0124)	(0.0177)
Interact	0.0000	-0.0001***	0.0002***	0.0001***	0.0000	-0.0001	-0.0002*
	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0001)
Constant	0.8255*	-0.0112	0.8408*	0.8367*	0.8261*	0.8145	0.8066
	(0.4439)	(0.1911)	(0.4491)	(0.4337)	(0.4416)	(0.5265)	(0.6163)
Observations	126	126	126	126	126	126	126

*Note: *, **, *** for level of significance at 10 %, 5 % and 1 % respectively. Robust standard errors are in parenthesis.*

The MM Quantile regression with the interaction term shows that Control Corruption (CC) is statistically significant in explaining the changes in stock market returns at the 0.10, 0.25, 0.50, 0.75, and 0.90 quantiles, while Government Effectiveness is statistically significant in explaining the changes in stock market returns at the 0.75 and 0.90 quantiles. In addition, the coefficients of Political Stability and Absence of Violence and Terrorism are statistically significant in explaining the changes in stock market returns at 0.25, 0.50, 0.75, and 0.90 quantiles. The coefficient of Rule of Law (RL) is statistically significant in explaining the changes in stock market returns at the 0.10, 0.25, and 0.50 quantiles, while the coefficient of Regulatory Quality (RQ) is statistically significant in explaining the changes in stock market returns at 0.50, 0.75, and 0.90 quantiles. Additionally, the results show that Voice and Accountability (VA) is statistically significant in explaining the changes in stock market returns at 0.10, 0.25, 0.50, 0.75, and 0.90 quantiles, while Ease of Doing Business (EDB) is statistically significant in explaining the changes in stock market returns at 0.10 and 0.25 quantiles.This study is similar toBolgorian (2011)which reported a negative correlation between corruption and stock market growth.

In addition, Asongu (2012)it has been reported that government effectiveness positively affects stock market performance. This result is in line with Fagbemi et al. (2021) the finding of a positive correlation between voice, accountability, and stock market returns. Mehmood et al. (2023) reported that regulatory

quality influences private sector growth. Additionally, Lombardo and Pagano (2006) they find a positive relationship between the quality of the overall legal system and equity returns, while Hooper et al. (2009) revealing a positive relationship between regulatory quality and stock market returns.This result is consistent with Ajide (2014) the finding that political instability has a negative impact on stock market growth. Additionally, Lehkonen and Heimonen (2015)they report a negative relationship between political risk and stock market development. Kaufmann et al. (2002) opined that the rule of law could enhance the growth and development of stock markets. Additionally, Asongu (2012) conforming to the rule of law results in an increase in stock market performance.

5.0 Conclusions and Recommendations

The relationship between institutional quality and stock market returns is complex and multi-faceted. Institutional quality refers to the effectiveness and efficiency of a country's institutions, including its legal and regulatory frameworks, political stability, property rights protection, and overall governance. Governments and policymakers often work on improving both institutional quality and the ease of doing business to create an environment that supports entrepreneurship, innovation, and sustainable economic development. When countries have business-friendly policies, regulations, and infrastructure, it becomes easier for businesses to operate and thrive. This attracts domestic and foreign investors, leading to increased investments in the stock market and higher stock market returns. Additionally, a favourable business environment fosters economic growth and stability, which positively impacts stock market returns. This study explores the interaction effect between institutional quality and stock market returns in Africa with reference to nine (9) stock markets exchanges. To attain the objective of the research, we follow extant theoretical and empirical literature related to the study, and as such, the study used the six institutional qualities developed byKaufmann et al. (2009) as determinants of stock market returns, such as voice and accountability, political stability and absence of violence or terrorism, government effectiveness, quality of regulation, rule of law, and corruption control which are considered as the benchmark for measuring institutional quality worldwide.

In addition, the study used Bayesian panel regression, Bayesian panel regression, and Bayesian Moving Average to examine the interaction effect between institutional quality and ease of doing business on stock market returns in Africa and the MM Quantile regressions as a robustness check for the model. The study revealed that Control of Corruption (CC), Regulatory Quality (RQ), Rule of Law (RL), Voice and Accountability (VA), Political Stability and Absence of Violence and Terrorism (PSAVT), Government Effectiveness (GE), and Ease of Doing Business (EDB) were statistically significant in explaining the changes in stock market returns in Africa. Similarly, it was also discovered that the interaction between institutional quality and ease of doing business has a significant effect on stock market returns in Africa. This implies that when countries in Africa create a favourable climate for foreign investors with good institutional quality and reduce the cost of business operations, it often increases stock market returns and sends positive signals to foreign investors, indicating a stable and transparent business environment.

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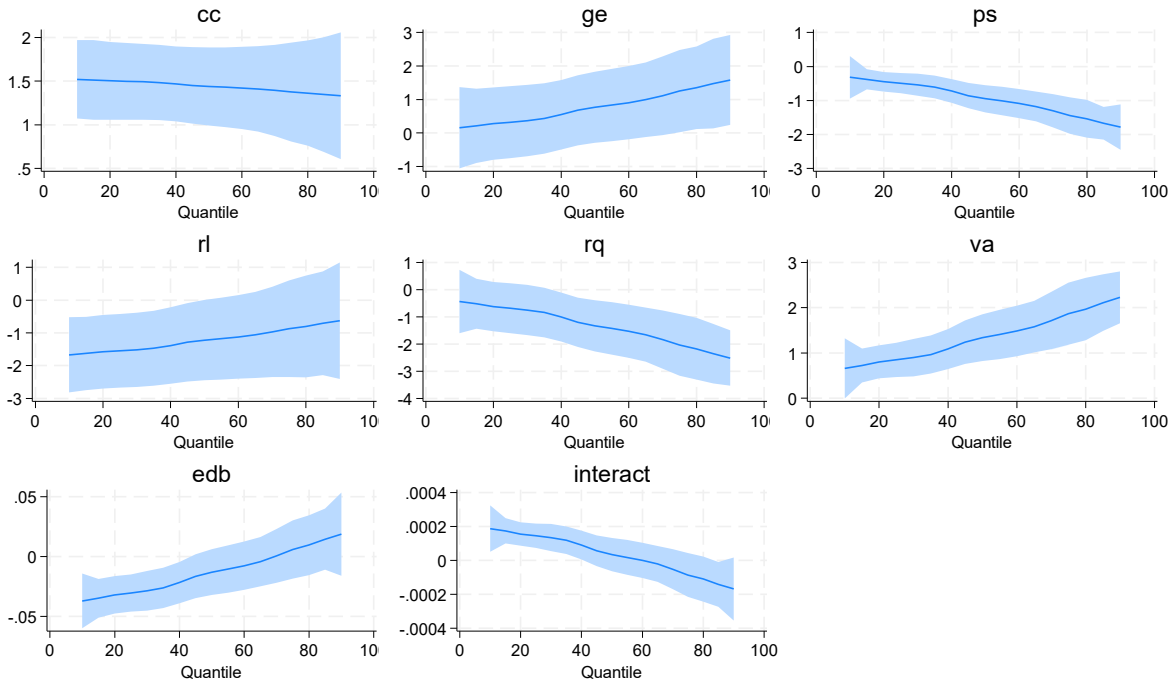
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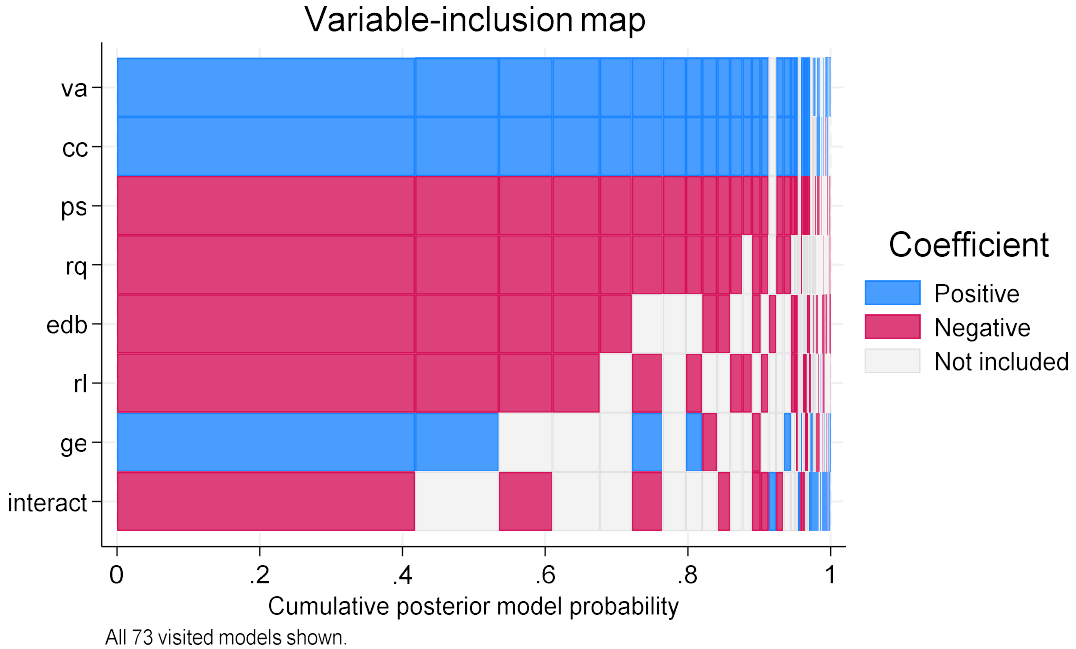
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Appendix

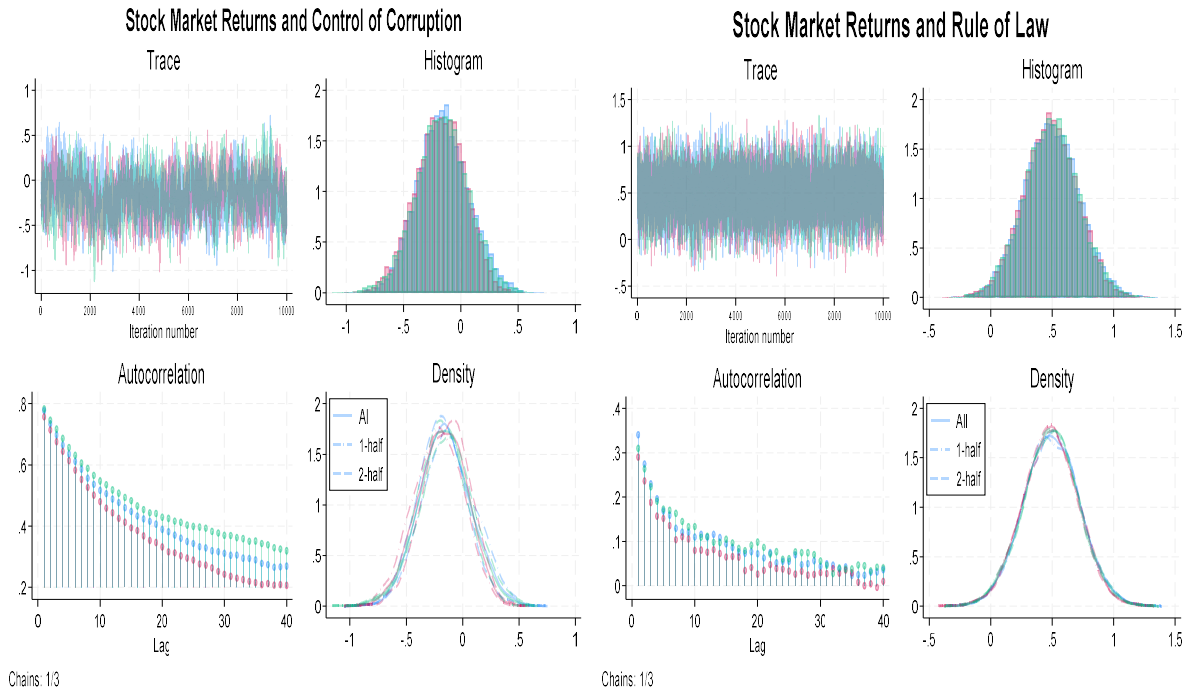
MM Quantile Graph

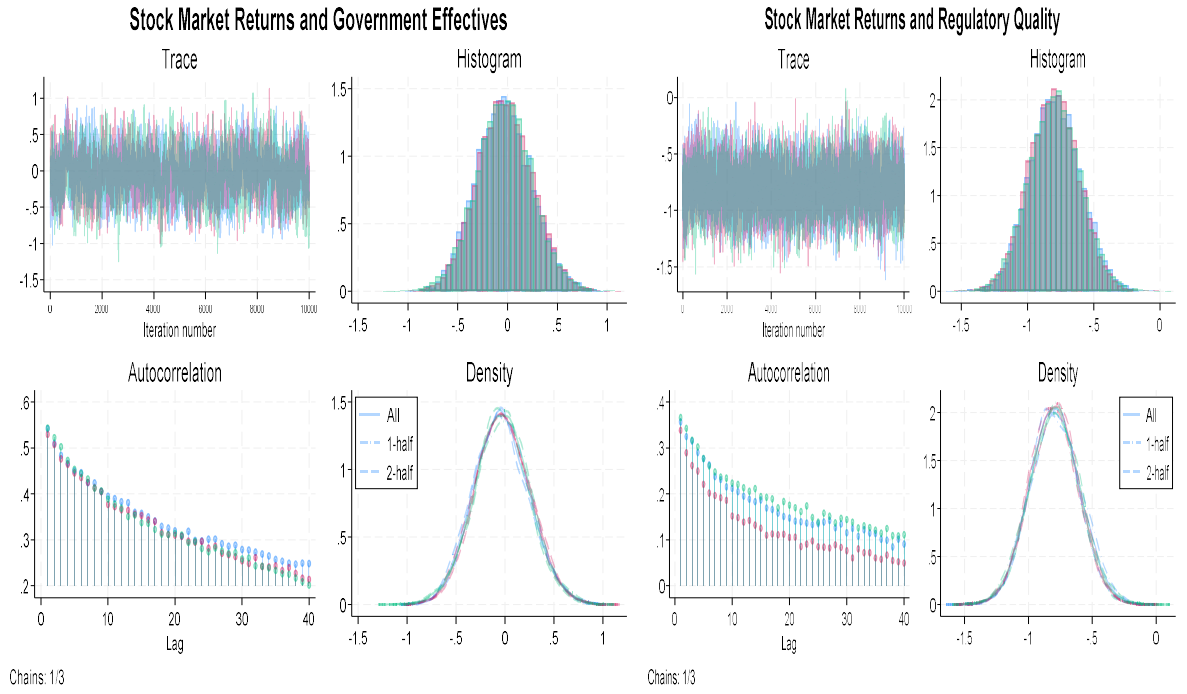


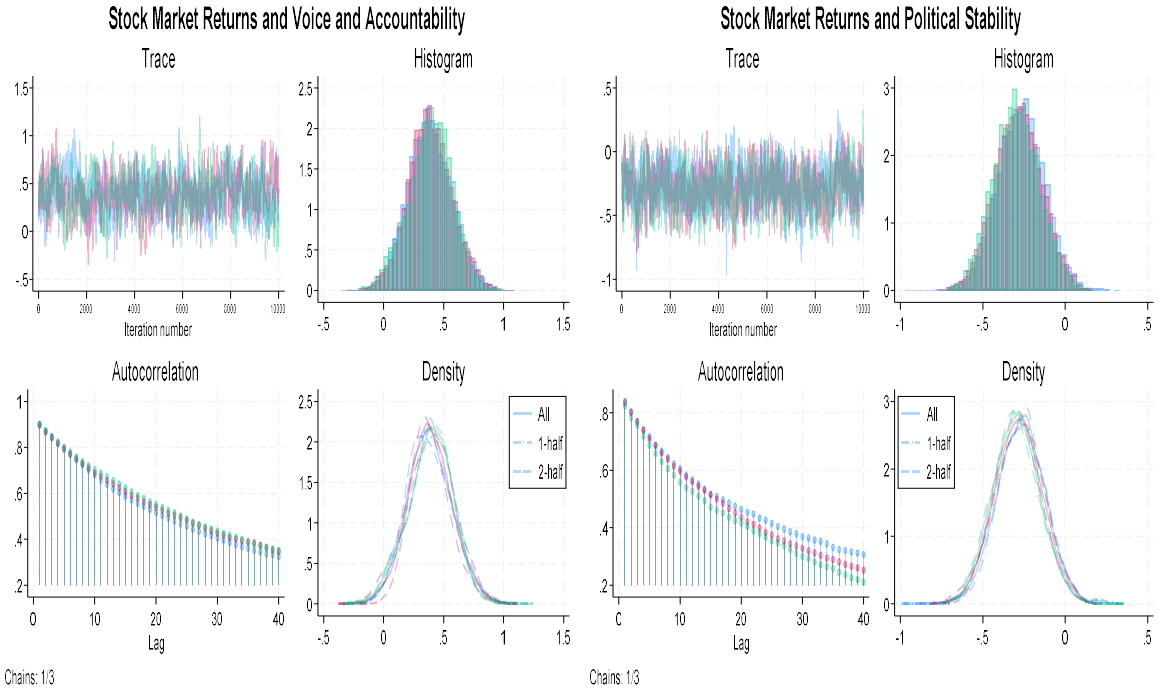
Cumulative posterior model probability Map

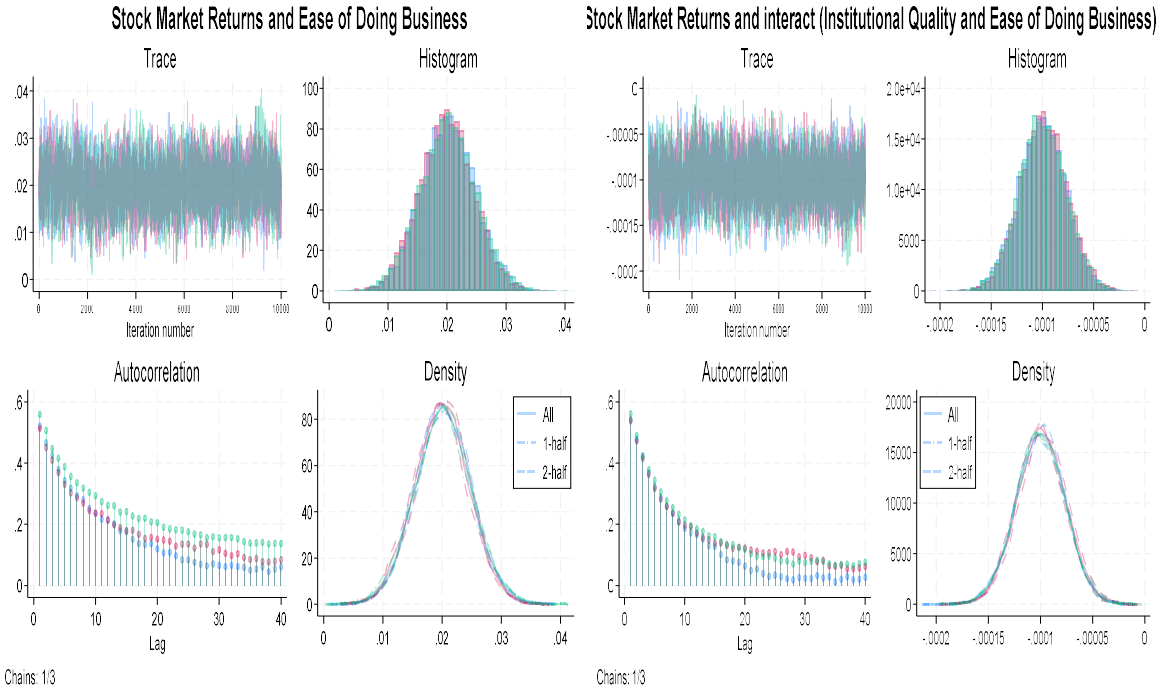


Bayesian Graph






Stock Market Returns and Voice and Accountability
Trace
Histogram
Iteration number
Autocorrelation
Density
Lag
All
1-half
2-half
Chains: 1/3
Stock Market Returns and Political Stability
Trace
Histogram
Iteration number
Autocorrelation
Density
Lag
All
1-half
2-half
Chains: 1/3


Stock Market Returns and Ease of Doing Business
Trace
Histogram
Iteration number
Autocorrelation
Density
Lag
All
1-half
2-half
Chains: 1/3
Stock Market Returns and interact (Institutional Quality and Ease of Doing Business)
Trace
Histogram
Iteration number
Autocorrelation
Density
Lag
All
1-half
2-half
Chains: 1/3

Availability of Data

The data that support the findings of this study are available from the corresponding author, [Seyingbo, O. A], upon reasonable request.

Disclosure Statement

I confirm that there are no relevant financial or non-financial competing interests to report.