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Open Access

AFRICAN JOURNAL OF ECONOMIC TRANSFORMATION AND DEVELOPMENT
African Academic Imprint Press

Email: ajetdpress@gmail.com
Website: www.aaimp.ng

Vol. 2, Issue 1, October 2026, pp. 23–46
Submitted August 2026, Published Oct. 2026
Print ISSN: 3156-5123, E-ISSN:3156-5352

EFFECTS OF INSTITUTIONAL QUALITY ON STOCK MARKET DEVELOPMENT IN NIGERIA AND SOUTH AFRICA

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ABSTRACT

This study examines how institutional quality affects stock market development in Nigeria and South Africa. It considers six Worldwide Governance Indicators (WGI): control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability. Money supply, exchange rate, inflation, real gross domestic product, real interest rate, and financial development are included as control variables. The study uses quarterly data from 2002Q1 to 2022Q4, and estimates separate autoregressive distributed lag (ARDL) and error-correction models for each institutional indicator in the two countries. Since the WGI are reported annually, the annual observations were linearly interpolated to obtain quarterly series. These values are therefore treated as estimated quarterly observations rather than directly observed governance measures. Phillips–Perron tests show that the variables are I(1), while the ARDL bounds tests confirm the existence of long-run relationships in all six specifications for both countries. Regulatory quality has a positive and significant effect on stock market development in both countries in the short and long run. Control of corruption is positive and significant in South Africa but negative and insignificant in Nigeria in the long run. Government effectiveness is negative and significant in both countries. Political stability is negative and significant in Nigeria but insignificant in South Africa. Rule of law has a positive effect in South Africa but a negative effect in Nigeria, while voice and accountability is negative and significant in both countries. Overall, the findings show that the effect of institutional quality on stock market development differs across countries, institutional dimensions, and time horizons.

Keywords: *Institutional quality; stock market development; market capitalisation; governance; ARDL; Nigeria; South Africa.*

JEL Classification: G10; G18; G28; O55; P16

Citation: Amalaha, R. O. (2026). Effects of institutional quality on stock market development in Nigeria and South Africa. *African Journal of Economic Transformation and Development*, *2*(1), 23–46.

1. INTRODUCTION

Stock markets perform an important financial-intermediation function by mobilizing savings, allocating long-term capital and providing liquidity for investment. Stock-market development is consequently relevant to private-sector financing, investment and broader economic transformation. Market capitalisation is commonly used as a broad indicator of stock-market development because it reflects the aggregate value of listed domestic companies and the depth of the listed equity market.

The performance and development of stock markets are influenced not only by macroeconomic conditions but also by the institutional environment in which investors, listed companies, financial intermediaries and regulators operate. Institutions determine the predictability of rules, protection of property rights, contract enforcement, regulatory implementation, information disclosure and the credibility of public policy. The World Bank's Worldwide Governance Indicators organize institutional quality into six dimensions: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption.

The relationship between institutions and financial-market development is theoretically plausible but empirically heterogeneous. Strong legal and regulatory institutions may reduce transaction costs and information asymmetry and strengthen investor protection. Political stability may reduce investment uncertainty, while government effectiveness can improve policy implementation and the public infrastructure supporting financial markets. Conversely, particular institutional indicators may be associated differently with market outcomes because governance dimensions capture distinct political, administrative, and regulatory processes.

Existing empirical evidence generally supports a relationship between governance and financial-market outcomes, but the direction and magnitude of the relationship vary across countries and institutional dimensions. Asongu (2012), for example, reported a positive association between government quality and several measures of African stock-market performance. Ahmed, Khan and Ozturk (2021) found that selected governance dimensions, particularly control of corruption, accountability and rule of law, were positively associated with stock-market development in selected South Asian economies. Khan, Ilyas and Hashmi (2018) established a long-run relationship between institutional quality and stock-market development in Pakistan using an ARDL framework.

Nigeria and South Africa provide an informative comparative setting. Both have major African capital markets, yet they differ in institutional conditions, financial depth, market structure, and macroeconomic environments. Existing African studies have often examined broad governance measures, a limited number of institutional indicators, panel samples, or macroeconomic determinants without providing a country-specific comparison of the six WGI dimensions within a common dynamic framework. The present study therefore examines the six (6) dimensions separately for Nigeria and South Africa while controlling for key macroeconomic and financial variables.

The study contributes by disaggregating institutional quality into the six (6) WGI dimensions, applying a common ARDL/ECM framework to both countries, distinguishing long-run relationships from short-run dynamics, and examining whether the alternative All Share Index measure provides broadly similar evidence. The analysis also explicitly documents the transformation of annual WGI observations into quarterly observations, an issue that is important for replication and interpretation.

Research Questions

This study specifically asks:

a) What is the effect of control of corruption on stock market development in Nigeria and South Africa?
b) What is the effect of government effectiveness on stock market development in Nigeria and South Africa?
c) What is the effect of political stability on stock market development in Nigeria and South Africa?
d) What is the effect of regulatory quality on stock market development in Nigeria and South Africa?
e) What is the effect of the rule of law on stock market development in Nigeria and South Africa?
f) What is the effect of voice and accountability on stock market development in Nigeria and South Africa?

Objectives of the Study

The main objective is to examine the effects of institutional quality on stock market development in Nigeria and South Africa. The specific objectives of the study are to:

a) Examine the effect of control of corruption on stock market development in Nigeria and South Africa
b) Determine the effect of government effectiveness on stock market development in Nigeria and South Africa;
c) Examine the effect of political stability on stock market development in Nigeria and South Africa;
d) Determine the effect of regulatory quality on stock market development in Nigeria and South Africa;
e) Examine the effect of rule of law on stock market development in Nigeria and South Africa; and
f) Determine the effect of voice and accountability on stock market development in Nigeria and South Africa.

2. LITERATURE REVIEW

2.1 Conceptual Literature

Institutional quality refers to the quality, credibility and effectiveness of the rules and organisations that structure economic and political interaction. It describes the extent to which the rules, organisations and governance arrangements that structure economic activity are credible, effective and consistently implemented. In financial markets, institutions affect the incentives of investors and firms because capital is committed under uncertainty. Protection of property rights, credible contract enforcement, predictable regulation and effective supervision can lower transaction costs and strengthen confidence in market participation.

The theoretical connection between institutions and stock markets can be explained through several mechanisms. Control of corruption captures the extent to which public power is exercised for private gain and the effectiveness of mechanisms that restrain corruption. Effective corruption control can reduce the private costs associated with informal payments and rent-seeking. Government effectiveness reflects the

quality of public services, policy formulation, and implementation. Government effectiveness can improve policy implementation and public services that support market infrastructure. Political stability concerns the likelihood of government destabilization by unconstitutional or violent means. Political stability can reduce uncertainty surrounding investment decisions. Regulatory quality captures the ability of government to formulate and implement policies and regulations that permit and promote private-sector development. Effective regulation can reduce information asymmetry and opportunistic behaviour. Rule of law reflects confidence in and compliance with social rules, including contract enforcement, property rights, and the courts. Stronger legal institutions can reduce transaction and agency costs and improve investor protection. Voice and accountability capture participation and the extent to which citizens can influence government and access information. Accountability mechanisms can increase transparency and scrutiny. These six dimensions are related but conceptually distinct.

Stock market development can be measured by market capitalisation, liquidity, turnover, value traded, and the number of listed firms. The present study uses market capitalisation (MCAP) as the principal dependent variable and the All Share Index (ASI) as a robustness measure. The use of MCAP is consistent with the literature that treats the size of the listed equity market as an important indicator of stock-market development.

2.2 Theoretical Literature

The study is anchored on the Arbitrage Pricing Theory (APT) developed by Ross (1976). APT proposes that expected financial-asset returns are related to exposure to multiple systematic factors. Although the original theory, APT, is framed around asset returns rather than market capitalisation, its multi-factor logic provides a useful basis for examining how institutional and macroeconomic information can influence financial-market outcomes. Institutional conditions may affect expected corporate cash flows, perceived investment risk, transaction costs, and the required return on financial assets.

The institutional interpretation is also informed by the new institutional economics. North (1994) argues that institutions shape the incentives and constraints under which economic agents operate. In financial markets, credible institutions can reduce uncertainty and transaction costs. La Porta et al. (1997) similarly emphasize legal protection as an important determinant of external finance and enforcement in financial development, while Levine (1997) links institutional arrangements to the functioning and development of financial systems. Roe and Siegel (2011) argue that political stability and financial development are important for the functioning of investor-protection institutions. They argued that investor-protection institutions cannot function effectively when political conditions are persistently unstable. Together, these perspectives support the inclusion of institutional variables alongside macroeconomic and financial controls.

2.3 Empirical Literature

The empirical evidence is extensive but heterogeneous. It generally supports an association between institutional conditions and financial-market development, but the evidence is not uniform. Asongu (2012) examined government-quality determinants of stock-market performance in African countries and reported a positive relationship between government quality and African stock-market performance, including market size and activity measures. Abu, Olalekan and Adekunle (2019) used static and dynamic panel methods for six major sub-Saharan African stock exchanges over 1996–2016 and found significant effects for government effectiveness, regulatory quality and voice and accountability on market capitalization. Khan, Ilyas and Hashmi (2018) used ARDL and ECM for Pakistan and established cointegration between

institutional quality and stock-market development in Pakistan using ARDL and ECM. Gani and Ngassam (2008) found that political stability and rule of law support stock-market development in Asian economies, while poor regulatory quality and government effectiveness can constrain it. Bayar (2016) reported that political stability, corruption control, regulatory quality, and rule of law are relevant to stock-market development in European Union transition economies. Ahmed, Khan and Ozturk (2021) examined Bangladesh, India, Pakistan and Sri Lanka using panel ARDL/PMG and found positive long-run effects for selected governance dimensions (control of corruption, accountability and rule of law) in South Asian countries, while short-run effects were heterogeneous (differed across countries). These studies provide broad African evidence but do not provide the same country-specific Nigeria–South Africa ARDL comparison undertaken here.

Evidence from Nigeria is also mixed. Ojeka et al. (2019) examined institutional quality, using listed-company data, and reported a negative relationship between corruption-related measures and firm performance. The evidence therefore indicates that governance is relevant in Nigeria but does not imply a uniform effect across institutional dimensions or measures of market performance. Manasseh, Mathew and Ogbuabor (2017) used an ARDL approach and found that control of corruption and accountability (improvements in institutional quality) were long-run institutional factors associated with Nigerian stock-market development. Okoye et al. (2022) examined fraud and corruption in the Nigerian capital market and documented significant relationships with stock-value outcomes. Okoebor (2022) reported significant effects of selected macroeconomic variables on Nigerian stock-market performance. Pole and Cavusoglu (2021), using monthly Nigerian data and ARDL, found significant short-run and long-run effects of macroeconomic factors on stock returns.

For South African-specific literature, evidence includes studies that examine governance, financial development, and macroeconomic conditions. Winful, Sarpong and Agyei-Ntiamoah (2016) examined institutional quality and stock-market performance across emerging economies, including South Africa, and found a positive and significant influence of institutional quality on stock-market performance across emerging economies, including South Africa. Ajeigbe et al. (2022), using panel ARDL evidence for South African listed companies, found that economic growth, exchange rate, and share price were relevant to asset returns in the long run. Studies of African and emerging markets also indicate that institutional quality, financial development, and macroeconomic stability can operate jointly rather than independently. Rehman et al. (2021) examined BRICS economies, including South Africa, and found significant effects for institutional factors such as government size, sound money and regulation. Yartey (2010) also identified political risk, bureaucratic quality and law-and-order conditions among determinants of emerging-market stock-market development. These findings suggest that institutional conditions are relevant to South Africa and other emerging markets, but they do not establish that every governance dimension has the same relationship with South African market development.

Comparative African evidence remains less developed than the wider cross-country literature. Fapohunda (2019) examined stock markets and economic growth in South Africa and Nigeria using quarterly data and a cointegration/ECM framework, but did not disaggregate the six WGI dimensions in the manner undertaken here. Temile et al. (2022) examined stock-exchange activity and economic growth in Nigeria and South Africa. Abu et al. (2019) provide a broader sub-Saharan African panel perspective, but their design does not isolate the Nigeria–South Africa comparison using country-specific ARDL models.

Etim and Daramola (2020) used a comparative systematic review to explore the factors that act as drivers of informality in South Africa (SA) and Nigeria. The data collated from thirty-one (31) primary studies (17 for SA and 14 for Nigeria) indicated that unemployment, income disparity among citizens, excessive tax burdens, excessive bureaucratic hurdles from government, inflationary tendencies, poor corruption control,

GDP per capita, and lack of social protection and survival tendencies all act as drivers to the informal sector in SA and Nigeria.

Other relevant studies reinforce the importance of institutional and macroeconomic conditions. La Porta et al. (1997) emphasized legal protection as a determinant of external finance. Yartey (2008) examines institutional and macroeconomic determinants of the stock market, applying panel data of 42 emerging economies covering 1990-2004. The paper finds that income level, gross domestic investment, banking sector development, private capital flows, and stock market liquidity are critical macroeconomic determinants of SMD in developing countries. The results also show that political risk, law and order, and bureaucratic quality are important determinants of SMD. This result suggests that the resolution of political risk can be a key factor in the development of emerging stock markets. Levine (1997) linked institutional arrangements to financial development. Collier (2017) linked weak institutional environments to poor market performance in Africa. Tunyi and Ntim (2016) examined governance quality, stock-market development and African mergers and acquisitions, demonstrating the relevance of institutional quality to capital-market activity. The cumulative literature therefore indicates that institutional quality is relevant to financial development, while the magnitude and sign of individual institutional variables remain context-dependent.

Papaioannou (2009) showed that well-functioning institutions can influence international capital mobilization. Hooper et al. (2009) examined the relationship between government institutions and global stock-market performance and reported a positive relationship between institutional quality and market performance. Lombardo and Pagano (2000) found a positive relationship between institutional quality and risk-adjusted return on equity. These studies reinforce the theoretical mechanisms through which institutions may influence financial markets.

Roe and Siegel (2011) found that political stability has a significant relationship with financial development. Law and Azman-Saini (2012) found that institutional quality is relevant to financial development, while the institutional-development literature generally indicates that legal protection, political stability, and regulatory effectiveness affect the incentives for private investment. Together, the literature supports the expectation that governance conditions should matter for stock markets, while the mixed empirical signs justify estimating individual institutional dimensions separately. The empirical literature also includes African and emerging-market studies that combine institutional and financial conditions. Fayissa and Nsiah (2010) found that governance contributes to differences in economic performance among sub-Saharan African countries.

The present study addresses three gaps. First, African evidence has often relied on broad governance measures or a subset of institutional indicators. Second, many studies are panel-based, making country-specific dynamic adjustment difficult to observe. Third, comparatively few studies combine the six WGI dimensions with a common set of macroeconomic and financial controls for Nigeria and South Africa in separate ARDL models. The present study addresses these gaps by estimating six separate institutional specifications for both Nigeria and South Africa, with common macroeconomic controls and an ARDL/ECM framework. The study therefore contributes a disaggregated and country-specific comparison.

3. METHODOLOGY

Research Design and Data

The study adopts a quantitative ex-post facto research design based on secondary quarterly time-series data. The sample comprises 84 quarterly observations from 2002Q1 to 2022Q4 for Nigeria and South Africa. Market capitalisation is the principal measure of stock-market development. The explanatory institutional variables are the six WGI dimensions. Money supply, exchange rate, inflation, real GDP, real interest rate, and financial development are included as control variables.

Table 1: Variable Definitions

Variable	Symbol	Measurement/source
Market capitalisation	MCAP	Stock-market development proxy; CBN Statistical Bulletin/FRED
Control of corruption	CC	World Bank WGI
Government effectiveness	GE	World Bank WGI
Political stability	PS	World Bank WGI
Regulatory quality	RQ	World Bank WGI
Rule of law	RL	World Bank WGI
Voice and accountability	VA	World Bank WGI
Money supply	MS	M2 Nigeria; M3 South Africa; CBN/FRED
Exchange rate	EXR	Domestic currency per US dollar; WDI
Inflation	INF	Consumer-price inflation; WDI
Real GDP	GDP	Real GDP; WDI
Real interest rate	RIR	Real interest rate; WDI
Financial development	FD	Private-sector credit proxy; WDI

Source: Researcher's computations

Construction of Quarterly WGI Data Observations

The WGI data are originally published at annual frequency. The dataset used in this study contains quarterly observations because the ARDL models were estimated on 84 quarterly observations from 2002Q1 to 2022Q4. To obtain the quarterly institutional series, the annual WGI observations for each of the six dimensions were linearly interpolated between adjacent annual observations. The same procedure was applied to Nigeria and South Africa.

The quarterly institutional observations are therefore constructed estimates and are not independently observed quarterly governance measures. If W_t denotes the annual WGI value in year t and W_(t+1) the value in the following year, the intervening quarterly observations were generated by a straight-line interpolation between the two annual endpoints. This approach preserves the observed annual values at the endpoints and creates a transparent, reproducible quarterly path for the dynamic model.

Linear interpolation was used because no official quarterly WGI series exists for the study period. A carry-forward procedure would produce four identical quarterly values within each year and would eliminate within-year variation. Interpolation was therefore preferred as a transparent frequency-conversion method. Nevertheless, it is a limitation because the resulting quarterly

values are estimates and may smooth genuine within-year institutional shocks. The resulting quarterly dataset should be supplied with the manuscript as supplementary data together with the annual WGI observations and the interpolation formula. The same procedure was used for both countries.

The institutional coefficients must consequently be interpreted as conditional associations involving the constructed quarterly governance series. They should not be interpreted as causal estimates based on independently observed quarterly governance surveys.

Money Supply Measurement and Transformation

The study uses M2 for Nigeria and M3 for South Africa because these are the broad-money series retained in the respective national/source datasets used in the research. A common aggregate was not imposed because the definitions and source availability of monetary aggregates differ across the two countries. The use of M2 and M3 therefore introduces a comparability limitation. Money supply is included primarily as a control variable, and its coefficients should not be directly compared across countries as though the aggregates were identical.

Real GDP, market capitalisation and money supply were indexed to a 2012 base year and transformed logarithmically in the original estimation to improve scaling and interpretation. The governance indicators were retained in their WGI scale and entered separately. The different monetary aggregates could influence the estimated control-variable coefficients and should therefore be recognized when interpreting the cross-country comparison.

Model Specification

The functional relationship is specified as:

$MCAP_t = f(IQ_t, MS_t, EXR_t, INF_t, GDP_t, RIR_t, FD_t)$

where IQ_t represents one institutional-quality dimension at a time: CC, GE, PS, RQ, RL, or VA. The long-run equation for each institutional specification is:

$$MCAP_t = \beta 0 + \beta 1 MS_t + \beta 2 EXR_t + \beta 3 INF_t + \beta 4 GDP_t + \beta 5 RIR_t + \beta 6 FD_t + \beta 7 IQ_t + \varepsilon_t$$

The six (6) institutional dimensions are estimated separately because the correlation matrix indicates substantial relationships among several governance indicators. Separate estimation reduces the risk that multicollinearity obscures the individual association of each institutional dimension with market capitalisation.

Estimation Procedure

The Phillips–Perron (PP) unit-root test was used to establish the order of integration. The ARDL bounds-testing approach of Pesaran, Shin and Smith (2001) was then used to test for long-run relationships. The models were estimated in EViews 9 and lag lengths were selected using the Akaike Information Criterion (AIC). Error-correction models (ECM) were estimated where cointegration was established. Real GDP, market capitalization, and money supply were indexed

to a 2012 base year and transformed logarithmically in the original study to improve scaling and facilitate economic interpretation.

Diagnostic Tests

Model adequacy was examined using Breusch–Godfrey serial-correlation LM and Breusch–Pagan–Godfrey heteroskedasticity tests. Where heteroskedasticity was detected, Newey–West HAC standard errors were used. Residual-Normality and CUSUM stability diagnostics checks were also part of the underlying EViews analysis; numerical values are not reported where they were not retained in the extracted archival output.

The bounds test uses k=7 regressors: money supply, exchange rate, inflation, real GDP, real interest rate, financial development, and one institutional variable. The 5% critical bounds reported in the EViews output are 2.32 (I0) and 3.50 (I1).

Robustness Analysis

The All Share Index was used as an alternative measure, and the results were qualitatively consistent. In the robustness results, the direction of the principal institutional relationships is broadly similar, especially the positive role of regulatory quality in the relevant specifications. "Qualitatively consistent" is therefore used narrowly to mean that the principal institutional conclusions concerning direction and statistical significance remain broadly similar when ASI replaces MCAP; it does not mean that coefficient magnitudes or every control variable are identical.

4. RESULTS AND DISCUSSION OF FINDINGS

4.1 Presentation of Results

Descriptive Evidence

The descriptive statistics show marked differences between the two countries. Across the 84 quarterly observations, South Africa recorded positive mean values for all institutional indicators except political stability, whereas Nigeria recorded negative mean values across the six governance dimensions. The transformed market-capitalisation series has a mean of 4.3379 for South Africa and 4.0073 for Nigeria.

Table 2: Descriptive Statistics

Statistic	South Africa MCAP	Nigeria MCAP
Mean	4.3379	4.0073
Median	4.4633	4.2027
Maximum	4.8948	4.8669
Minimum	2.9840	1.2883
Standard deviation	0.3930	0.8173
Observations	84	84

Source: Researcher's computations. **Notations**: MCAP: Market capitalization.

The standard deviation is lower for South Africa (0.3930) than for Nigeria (0.8173), indicating greater dispersion in the transformed Nigerian series. The underlying correlation matrix also shows substantial relationships among some governance and macroeconomic variables, supporting the decision to estimate institutional dimensions separately.

Stationarity results

Phillips–Perron results indicate that MCAP, the six institutional indicators, and the control variables are non-stationary in levels but become stationary after first differencing. All variables are therefore classified as I(1) in the reported tests. The absence of any I(2) variable permits the application of the ARDL bounds-testing procedure.

Table 3: Phillips–Perron Unit-Root Test

Variable	SA level PP	SA 1st diff PP	SA order	NG level PP	NG 1st diff PP	NG order
MCAP	-3.138844	-6.397512	I(1)	-2.537079	-7.357498	I(1)
ASI	-1.723623	-6.678560	I(1)	-2.835362	-5.907596	I(1)
GDP	-2.498627	-14.731890	I(1)	-1.096157	-9.249230	I(1)
EXR	-1.942357	-8.585551	I(1)	-1.215846	-8.843904	I(1)
FD	-1.432528	-8.554296	I(1)	-2.367012	-6.964541	I(1)
MS	-1.732905	-7.050574	I(1)	-1.326317	-4.735448	I(1)
RIR	-3.392052	-7.007604	I(1)	-2.871774	-5.743852	I(1)
INF	-2.931350	-7.955265	I(1)	-2.490661	-6.636757	I(1)
CC	-1.903573	-8.299715	I(1)	-2.296730	-8.278104	I(1)
GE	-1.843284	-7.616230	I(1)	-3.004138	-7.591454	I(1)
PS	-2.466859	-9.043003	I(1)	-2.605264	-6.120986	I(1)
RL	-3.192372	-8.716700	I(1)	-1.059231	-7.606108	I(1)
RQ	-1.649801	-9.084817	I(1)	-2.019926	-5.927591	I(1)
VA	-2.777272	-7.721383	I(1)	-1.257181	-8.643318	I(1)

Source: Researcher's computations

Note: PP equations include intercept and linear trend. The reported 5% critical values are −3.464865 at levels and −3.465548 after first differencing. All variables become stationary after first differencing, and no variable is I(2).

Bounds tests for long-run relationships

All six institutional specifications produced bounds-test statistics above the 5% upper critical bound of 3.50 used in the study's ARDL evaluation. This provides evidence of a long-run relationship between market capitalisation and the explanatory variables in both countries across all institutional specifications.

Table 4: ARDL Bounds Tests Results

Institutional variable	South Africa F-statistic	Nigeria F-statistic	5% I(0) lower bound	5% I(1) upper bound	Decision
Control of corruption	7.7328	4.8392	2.32	3.50	Cointegration both
Government effectiveness	5.6592	10.5443	2.32	3.50	Cointegration both

Political stability	4.5913	6.6529	2.32	3.50	Cointegration both
Regulatory quality	8.0212	4.5715	2.32	3.50	Cointegration both
Rule of law	5.1743	6.0622	2.32	3.50	Cointegration both
Voice and accountability	6.1057	4.3835	2.32	3.50	Cointegration both

Source: Researcher's computations

All six calculated F-statistics exceed the 5% upper bound of 3.50. The bounds tests therefore reject the null hypothesis of no long-run relationship in each country and institutional specification. The critical values are the 5% lower-bound I(0) and upper-bound I(1) critical values reported in the EViews ARDL output, with k=7 regressors, based on Pesaran, Shin and Smith (2001) bounds framework.

Long-run Institutional Effects/Coefficients

Table 5: Long-run Regression Results

The full/complete long-run regression output/coefficients for all control variables are reported in Table 5 below.

Model	Country	MS	EXR	INF	GDP	RIR	FD	Institutional variable: Coefficient & (Prob.*)	Long-run interpretation for Institutional Variable
CC	South Africa	-0.2786 (.0079)	-0.7703 (.0004)	-0.0507 (.0057)	0.2449 (.4042)	-0.0308 (.0005)	2.4281 (.0328)	0.3242 (.0000)	Positive/significant in SA;
CC	Nigeria	1.6810 (.0166)	-0.1250 (.0196)	-0.5779 (.0762)	0.9872 (.0084)	-0.0498 (.0318)	11.6984 (.0092)	-0.2296 (.1383)	negative/insignificant in NG
GE	South Africa	0.0092 (.9173)	-1.5241 (.0000)	-0.0130 (.3958)	0.0969 (.7572)	-0.0393 (.0003)	4.2216 (.0028)	-1.6165 (.0000)	Negative/significant in SA
GE	Nigeria	0.6390 (.0000)	-0.3921 (.0000)	-0.2944 (.0017)	0.4685 (.0004)	-0.0112 (.0210)	0.0729 (.9465)	-1.5203 (.0000)	Negative/significant in NG
PS	South Africa	1.0614 (.0160)	-0.1781 (.2552)	-0.0299 (.1361)	1.1016 (.0085)	-0.0651 (.0000)	1.1414 (.0245)	-0.0492 (.7863)	Insignificant in SA;
PS	Nigeria	0.8285 (.0421)	-0.2954 (.0004)	0.1475 (.2604)	1.3268 (.0000)	-0.0322 (.0020)	11.5443 (.0000)	-1.3458 (.0008)	negative/significant in NG
RQ	South Africa	0.5162 (.1289)	-1.2310 (.0000)	-0.0703 (.0003)	0.6984 (.0175)	-0.0564 (.0001)	8.5958 (.0005)	0.8963 (.0146)	Positive/significant in SA
RQ	Nigeria	0.9305 (.0540)	0.1737 (.4941)	-1.0700 (.0000)	0.4840 (.0927)	-0.0652 (.0000)	15.5203 (.0000)	1.5101 (.0013)	Positive/significant in NG
RL	South Africa	0.7328 (.0238)	-1.9649 (.0000)	-0.0468 (.0048)	0.2556 (.3729)	0.0035 (.7578)	12.9431 (.0000)	1.7755 (.0000)	Positive/significant in SA;
RL	Nigeria	0.3965 (.0224)	0.6434 (.0016)	-0.6559 (.0000)	0.8953 (.0000)	-0.0403 (.0001)	7.5377 (.0026)	-0.9671 (.0025)	negative/significant in NG

VA	South Africa	-0.1398 (.1473)	-1.0040 (.0000)	0.0006 (.9800)	0.2505 (.3937)	-0.0702 (.0000)	0.3730 (.3070)	-0.3051 (.0000)	Negative/significant in SA
VA	Nigeria	-0.4102 (.0018)	1.8919 (.0000)	-0.5178 (.0013)	1.9431 (.0000)	-0.0489 (.0000)	17.1260 (.0000)	-3.0301 (.0000)	Negative/significant in NG

Source: Researcher's computations

The institutional coefficients are the principal parameters of interest. The long-run coefficients are taken from the original EViews ARDL output. The complete lag-by-lag equations, standard errors, and t-statistics are available in the supplementary EViews output.

The table above reproduces the available coefficient/probability results required for interpretation and retains the complete control-variable estimates for the control-of-corruption specification. The institutional coefficients are the principal parameters of interest in this article.

Control of corruption has a positive and statistically significant coefficient of 0.3242 in South Africa, whereas its coefficient in Nigeria is negative and statistically insignificant (-0.2296; p=0.1383). The contrast indicates that the association between corruption-control institutions and market capitalisation is not uniform across the two markets. In the South African specification, stronger corruption control is associated with higher market capitalisation after controlling for the selected macroeconomic variables.

Government effectiveness is negative and statistically significant in both countries, with coefficients of -1.6165 for South Africa and -1.5203 for Nigeria. This result differs from the positive relationship often expected in the governance-finance literature. It should therefore be interpreted cautiously as an empirical association within the specified models rather than as evidence that improving government effectiveness inherently reduces stock-market development. Measurement characteristics, omitted institutional channels, policy responses, and the time period may contribute to the observed relationship.

Political stability is statistically insignificant in South Africa (-0.0492; p=0.7863) but negative and statistically significant in Nigeria (-1.3458; p=0.0008). The Nigerian result indicates a significant association between the political-stability indicator and market capitalisation, while the South African result provides no statistically significant long-run evidence.

Regulatory quality is positive and statistically significant in both countries: 0.8963 in South Africa and 1.5101 in Nigeria. This is one of the most consistent institutional findings in the study and is broadly compatible with the proposition that predictable and supportive regulatory institutions can facilitate market development by improving confidence and the operating environment.

Rule of law is positive and statistically significant in South Africa (1.7755; p<0.001) but negative and statistically significant in Nigeria (-0.9671; p=0.0025). The opposite signs highlight the importance of country context. The result should not be interpreted as a general causal claim that stricter rule of law reduces Nigerian stock-market development; rather, it indicates a conditional association in the estimated dynamic specification.

Voice and accountability is negative and statistically significant in both South Africa (-0.3051) and Nigeria (-3.0301). Although the sign differs from several theoretical expectations and earlier empirical studies, it is consistent across the two country estimations in this dataset. The result demonstrates why disaggregating governance dimensions is useful: institutional quality is not a single homogeneous construct and different dimensions can have different empirical relationships with financial-market outcomes.

Short-run dynamics and adjustment

The short-run estimates also show heterogeneous institutional effects. Control of corruption is negative and significant in South Africa (-0.5570; p=0.0015) but positive and significant in Nigeria (1.9956; p=0.0001). Government effectiveness is negative and significant in South Africa (-1.8931; p<0.001) but positive and significant in Nigeria (0.7718; p=0.0042). Political stability is negative and significant in both countries (-0.8311 in South Africa and -2.4740 in Nigeria). Regulatory quality is positive and significant in both countries (1.4570 and 1.5403), while the other institutional dimensions display different signs across countries. Rule of law is positive in South Africa (1.5764) and negative in Nigeria (-2.0226), both statistically significant. Voice and accountability are negative and significant in both countries (-0.3593 and -2.8261).

Table 6: Short-Run Effects and Error Correction

Institutional variable	SA short-run coefficient β (p)	NG short-run coefficient β (p)	SA ECM(-1) (p)	NG ECM(-1) (p)
Control of corruption	-0.5570 (0.0015)	1.9956 (0.0001)	-0.2924 (0.1536)	-1.1372 (0.0000)
Government effectiveness	-1.8931 (0.0000)	0.7718 (0.0042)	-0.3705 (0.0004)	-0.5178 (0.0006)
Political stability	-0.8311 (0.0000)	-2.4740 (0.0000)	-1.0473 (0.0000)	-1.7033 (0.0000)
Regulatory quality	1.4570 (0.0001)	1.5403 (0.0002)	-0.7193 (0.0000)	-1.2183 (0.0000)
Rule of law	1.5764 (0.0000)	-2.0226 (0.0092)	-1.0673 (0.0001)	-0.9562 (0.0002)
Voice and accountability	-0.3593 (0.0000)	-2.8261 (0.0000)	-0.8600 (0.0000)	-0.7706 (0.0005)

Source: Researcher's computations

Above are the results of Error Correction Models incorporating all the institutional variables. The short-run institutional or error-correction coefficients are negative and statistically significant in all twelve reported specifications, confirming adjustment toward long-run equilibrium. For example, the ECM coefficient is -0.2924 in the South African control-of-corruption model and -1.1372 in the corresponding Nigerian model; in the government-effectiveness model, the coefficients are -0.3705 and -0.5178, respectively. The negative and significant terms indicate that deviations from the estimated long-run relationship are followed by subsequent adjustment. The particularly large negative coefficients in some specifications should be interpreted in the context of the estimated financial time-series models and possible adjustment/overshooting dynamics.

Regulatory quality is positive in both countries; political stability and voice and accountability are negative in both countries, while control of corruption, government effectiveness, and rule of law differ in sign across countries. The ECM coefficients are negative in all models. All are statistically significant except the South African control-of-corruption model (ECM=-0.2924; p=0.1536). Because the data are quarterly, the coefficients describe adjustment per quarter; values with absolute magnitude above one indicate adjustment with possible overshooting.

Diagnostic Tests

The output reports the Breusch–Godfrey and Breusch–Pagan–Godfrey diagnostics for the ARDL specifications. Where heteroskedasticity was identified, Newey–West HAC standard errors were used.

Table 7: Diagnostic Tests

Country-Model	Breusch-Godfrey Serial Correlation LM Test	Serial correlation (Breusch–Godfrey p)	Heteroskedasticity Test: Breusch-Pagan-Godfrey	Heteroskedasticity (Breusch–Pagan–Godfrey p)	Decisions / 5% interpretation
SA–CC	0.7656	0.6071	0.0170	0.0592	No serial correlation; heteroskedasticity addressed with HAC
NG–CC	0.2815	0.1884	0.0004	0.0029	No serial correlation; HAC used
SA–GE	0.8452	0.8452	0.0236	0.0236	No serial correlation; HAC used
NG–GE	0.1248	1.6312*	0.0912	0.0912	No 5% rejection
SA–PS	0.2753	0.3459	0.3459	0.1117	No 5% rejection
NG–PS	0.3847	0.3847	0.2428	0.2428	No 5% rejection
SA–RQ	0.8392	0.1759	0.0525	1.5814*	No 5% rejection; no serial correlation; no reported heteroskedasticity
NG–RQ	0.1489	1.9676*	0.0243	1.9306*	No reported 5% rejection; No serial correlation; HAC used
SA–RL	0.5162	0.5162	0.1117	0.1117	No reported 5% rejection
NG–RL	0.4063	0.4063	0.1725	0.1725	No reported 5% rejection
SA–VA	0.4660	0.4660	0.4359	0.4359	No reported 5% rejection
NG–VA	0.2768	1.3129*	0.3423	1.1455*	No 5% rejection reported

Source: Researcher's computations.

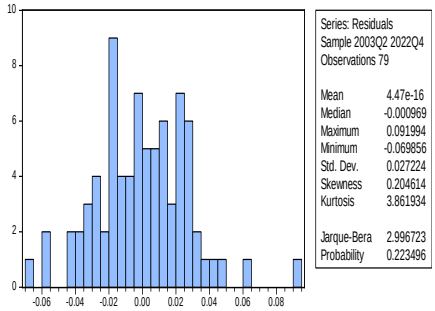
The Breusch–Godfrey tests do not reject the null of no serial correlation at 5% in any of the twelve models. Heteroskedasticity is detected in the South African CC and GE models and the Nigerian CC and RQ models; HAC covariance is used in those specifications.

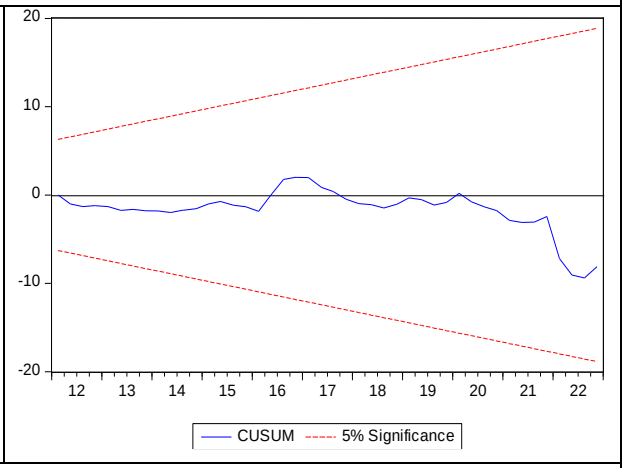
Residual-normality and CUSUM stability diagnostics

The residual-normality and CUSUM stability diagnostics were inspected in the EViews analysis. The EViews output/plots are presented in Table 4.7 as supplementary statistical evidence.

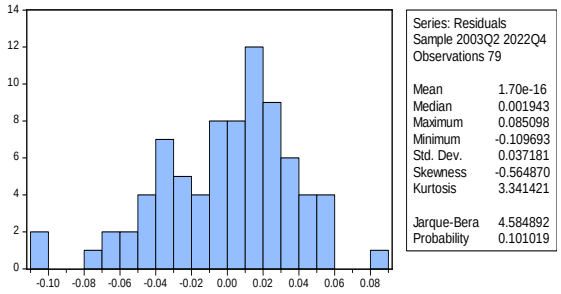
Figure 1: Normality and CUSUM Stability Diagnostics

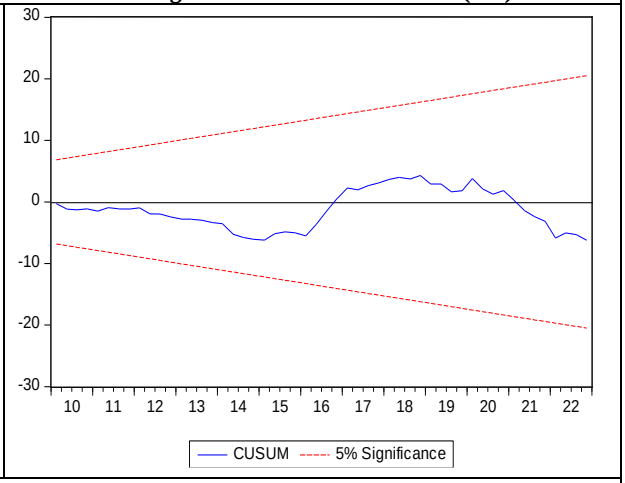
South Africa Results with MCAP - Long-run ARDL Regression Results using Control of Corruption (CC)



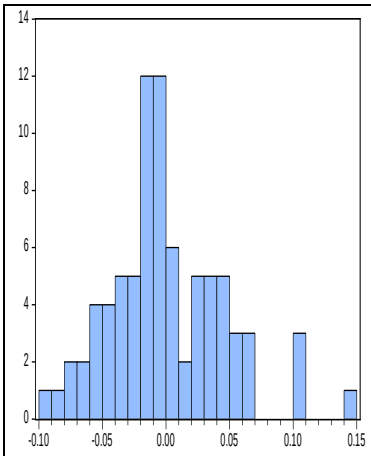


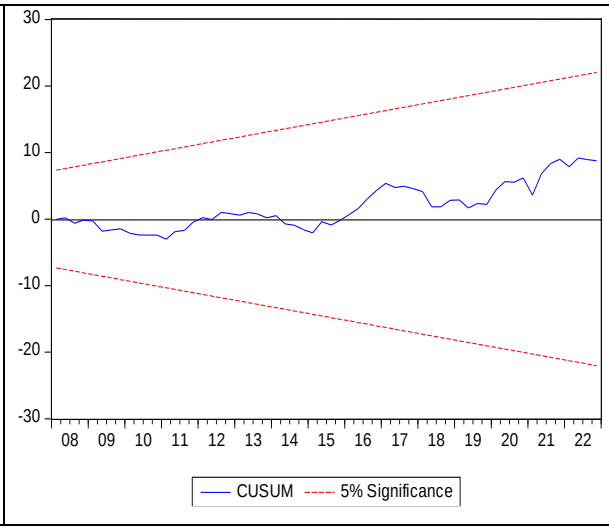
South Africa Results with MCAP - Long-run ARDL Regression Results using Government Effectiveness (GE)



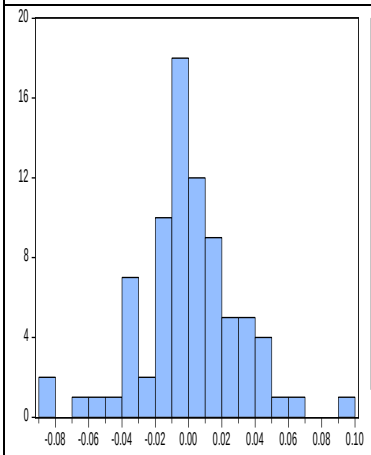


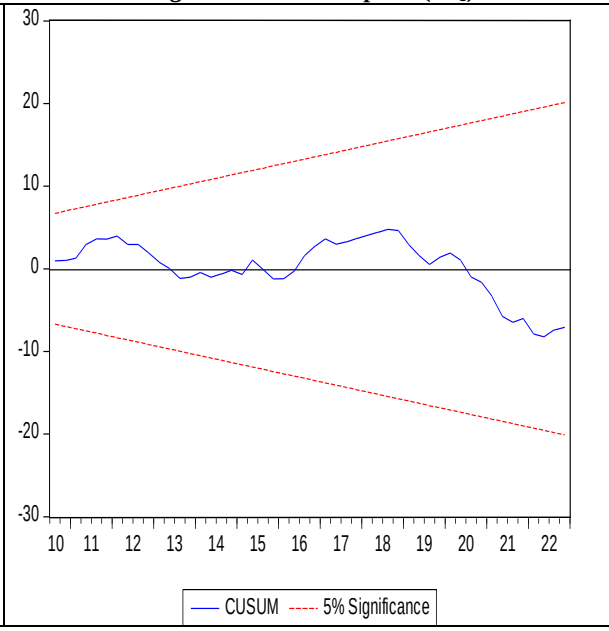
South Africa Results with MCAP - Long-run ARDL Regression Results using Political Stability (PS)



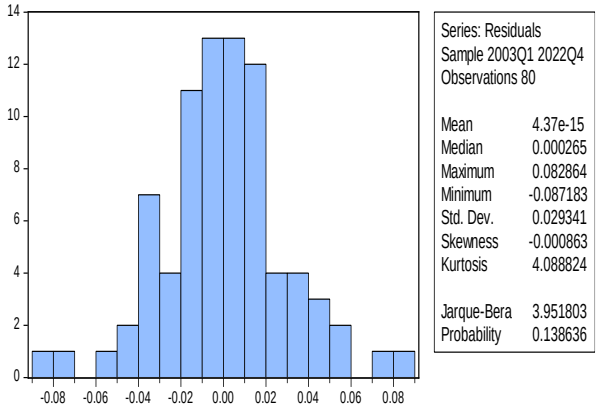


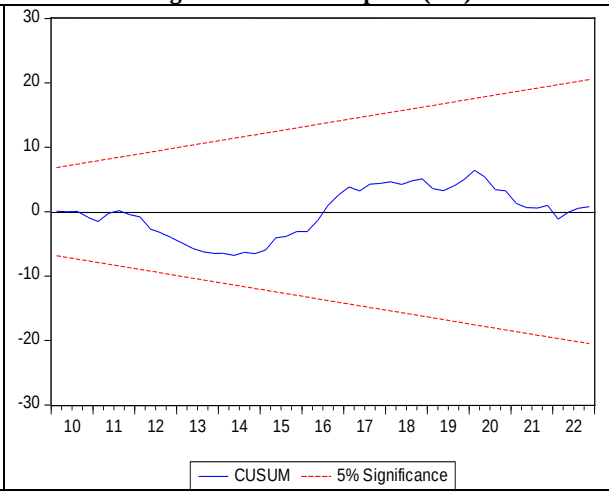
South Africa Results with MCAP - Long-run ARDL Regression Results using Control of Corruption (RQ)



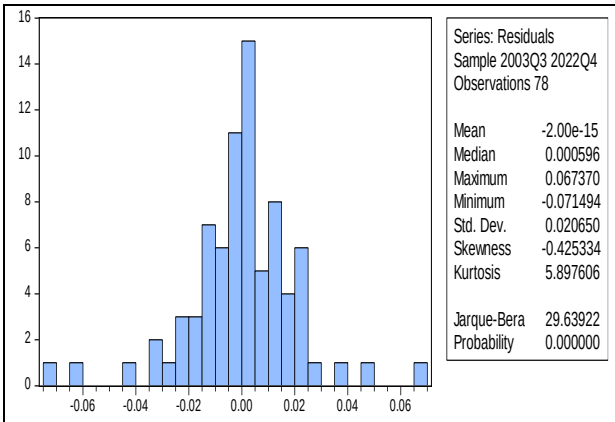


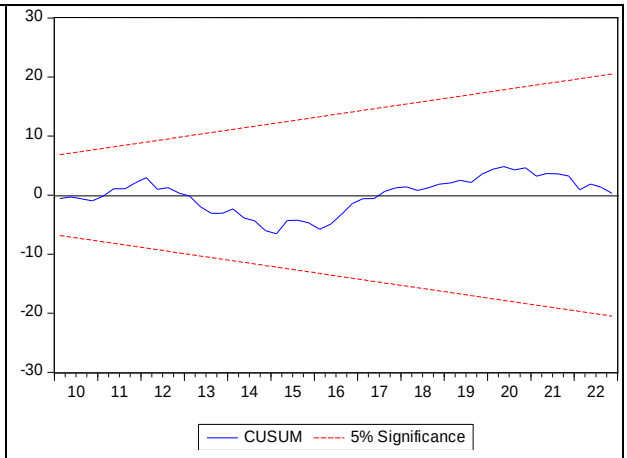
South Africa Results with MCAP - Long-run ARDL Regression Results using Control of Corruption (RL)



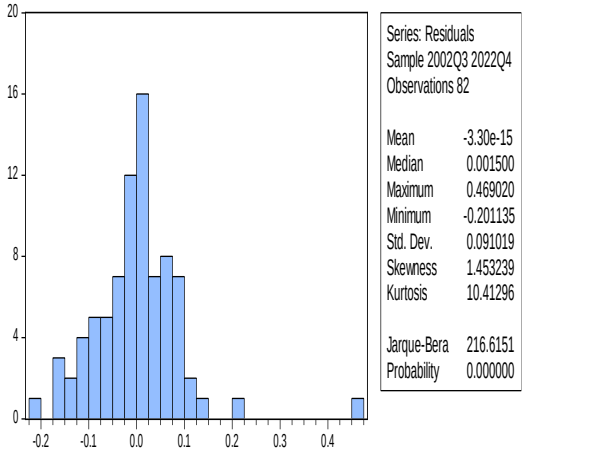


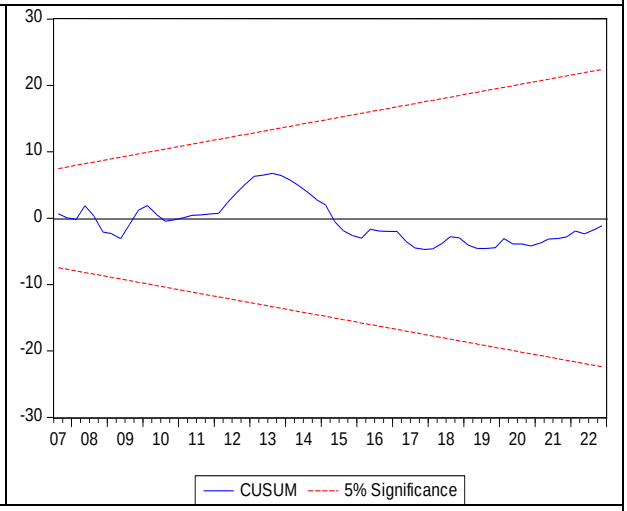
South Africa Results with MCAP - Long-run ARDL Regression Results using Control of Corruption (VA)



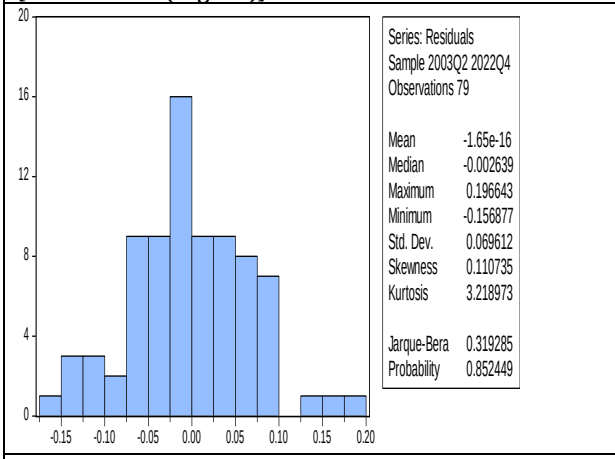


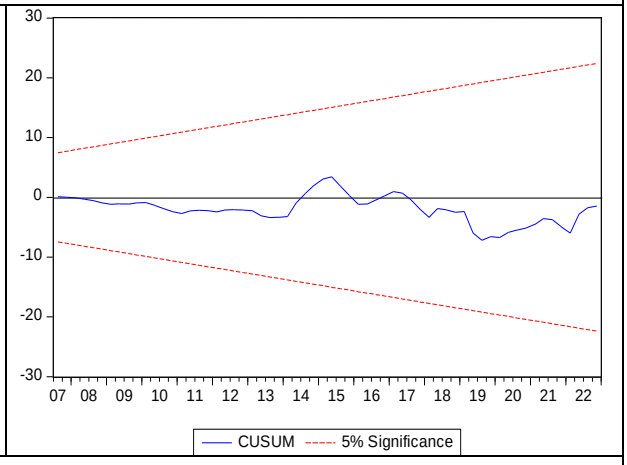
Nigeria Results with MCAP – Long-run ARDL Regression Results using Control of Corruption (CC) [ECM for Control of corruption (Nigeria)]



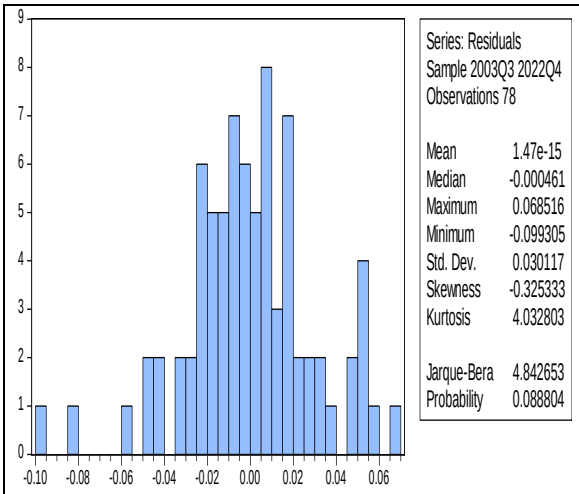


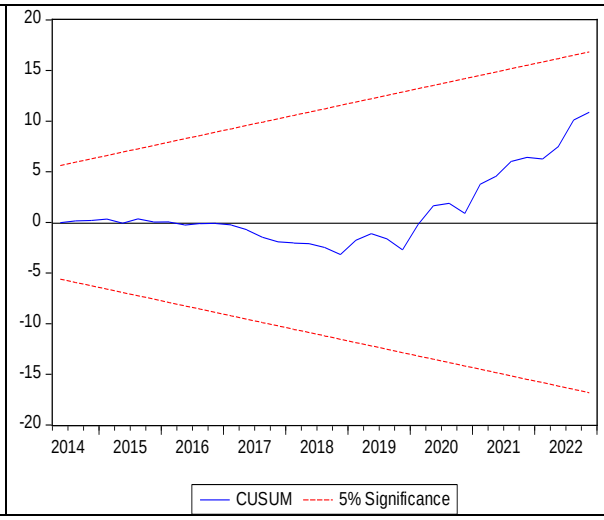
Nigeria Results with MCAP – Long-run ARDL Regression Results using Control of Corruption (GE) [ECM for GE (Nigeria)]



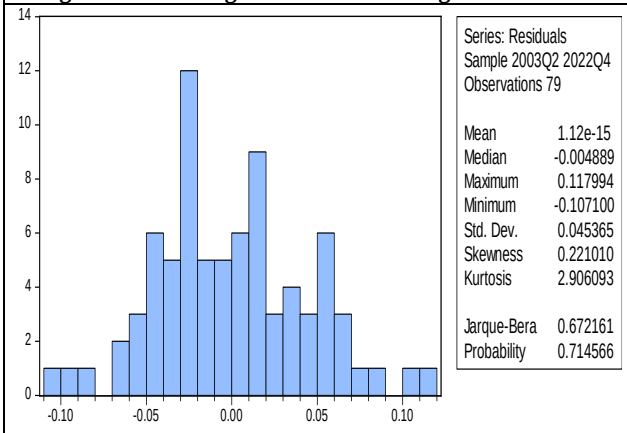


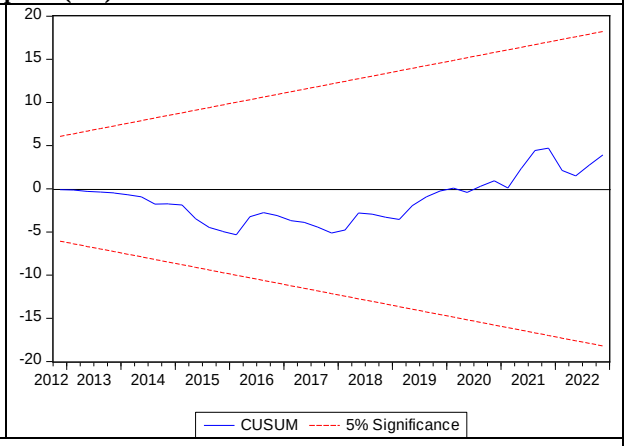
Long-run ARDL Regression Results using Control of Corruption (RQ)



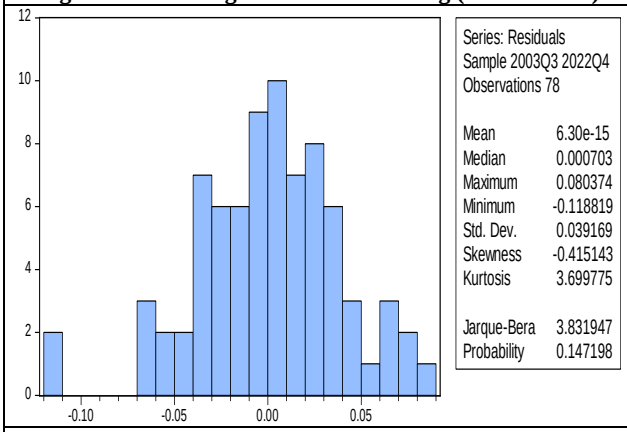


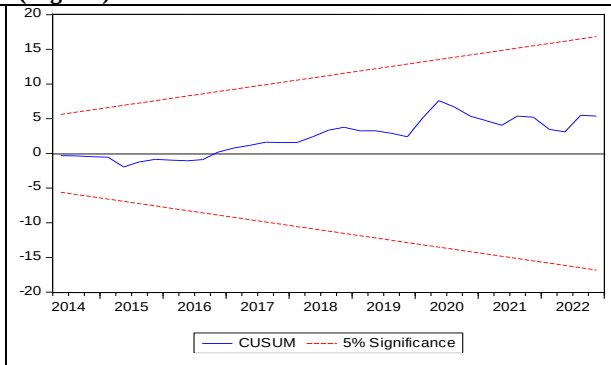
Long-run ARDL Regression Results using Control of Corruption (RL)



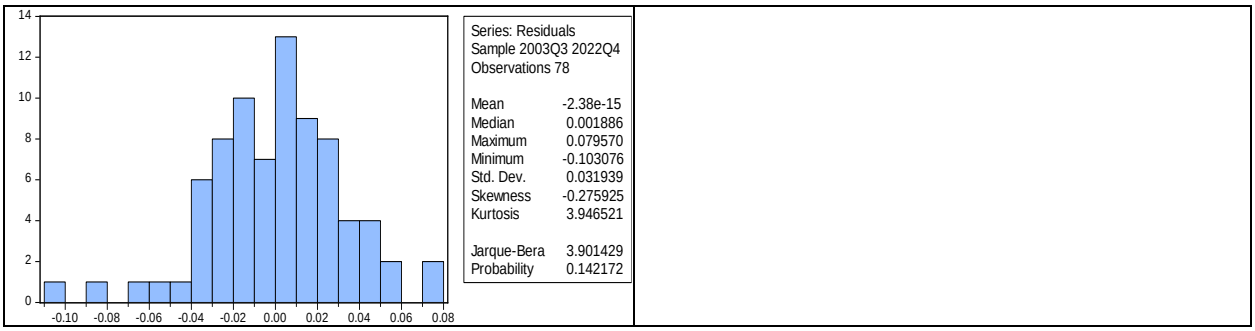


Long-run ARDL Regression Results using (Bounds Test) VA (Nigeria)





Long-run ARDL Regression Results using Control of Corruption (PS)



Source: Researcher's computations.

This included normality and CUSUM stability diagnostics. Their graphical/statistical output and Normality or stability statistics are well presented above.

Table 8: Model Fit and Full Coefficient Reporting

Model	Country	R^2	Adj. R^2	F-statistic	DW	HAC
CC	South Africa	0.9812	0.9761	190.5566	1.6883	Yes
CC	Nigeria	0.9842	0.9796	217.3707	2.1180	Yes
GE	South Africa	0.9866	0.9800	147.7572	2.0775	Yes
GE	Nigeria	0.9804	0.9757	209.9608	1.6312	No
PS	South Africa	0.9792	0.9723	141.3353	1.8299	No
PS	Nigeria	0.9823	0.9754	143.5655	2.2667	No
RQ	South Africa	0.9893	0.9831	159.2454	1.8864	No
RQ	Nigeria	0.9871	0.9828	232.7674	2.2080	Yes
RL	South Africa	0.9898	0.9844	185.9733	2.1739	No
RL	Nigeria	0.9740	0.9679	159.5792	1.4619	No
VA	South Africa	0.9897	0.9844	185.7487	2.1041	No
VA	Nigeria	0.9917	0.9890	366.5463	2.1589	No

Source: Researcher's computations.

This study reports the institutional coefficients, model-fit statistics and complete long-run control-variable coefficients.

Control variables and robustness

The macroeconomic controls generally behave in economically meaningful ways, although their effects vary across institutional specifications. Interest rates are frequently negative and significant, while financial development is predominantly positive and significant. Exchange-rate, inflation, GDP, and money-supply effects differ between countries and across specifications. These differences reinforce the value of controlling for macroeconomic conditions when estimating institutional effects. Table 4.7 compares the principal MCAP with ASI results.

Table 9: Robustness Analysis Using the All Share Index

Institutional dimension	MCAP principal result	ASI robustness evidence	Meaning of consistency
Control of corruption	Positive/significant SA; negative/insignificant NG in the long run	Robustness result reports a positive significant effect for ASI in both countries	Direction/significance is not identical in every specification; robustness means the institutional-

			market relationship remains evident under an alternative market measure.
Government effectiveness	Negative/significant in the long run in both	ASI results reported as generally consistent	Broad directional pattern remains comparable.
Political stability	Negative/significant NG; insignificant SA in the long run	ASI estimations reported as generally consistent	The alternative dependent variable does not overturn the broad institutional interpretation.
Regulatory quality	Positive/significant in both	Positive effect retained in relevant ASI specifications	Positive association with market outcome remains evident.
Rule of law	Positive SA; negative NG in the long run	ASI results reported as broadly consistent	Country-specific heterogeneity remains relevant.
Voice and accountability	Negative/significant in both	ASI results reported as broadly consistent	The main inference is not solely driven by MCAP.

Source: Researcher's computations.

The robustness exercise replaces market capitalisation with the All Share Index. In the results, the ASI estimations were described as qualitatively consistent with the MCAP estimations, including positive effects for regulatory quality in the relevant specifications and broadly similar directional patterns for several institutional and control variables.

In this study, "qualitatively consistent" means that the broad inference that institutional conditions are related to stock-market outcomes remains when the alternative market indicator is used; it does not mean that coefficient magnitudes, significance levels, or every control variable are identical across the two dependent variables. It supports the interpretation that the main institutional relationships are not solely an artefact of the selected market-capitalization measure, although the robustness results do not establish causal effects. However, this study provides additional support for the main inference that institutional conditions are empirically related to stock-market outcomes.

4.2 Discussion of Findings

The findings provide partial support for the conventional institutional-finance argument that better institutions support financial-market development. The strongest common result is regulatory quality. It is positive and statistically significant in both Nigeria and South Africa in the long run and short run. This result is consistent with the broader institutional-finance argument that credible, predictable and supportive regulation can reduce uncertainty, improve market confidence and facilitate participation. It is also broadly consistent with Abu, Olalekan and Adekunle (2019), who found regulatory quality significant for market capitalisation in selected sub-Saharan African markets, and with the wider evidence of Bayar (2016) and Gani and Ngassam (2008).

The positive South African long-run association for control of corruption and rule of law is also consistent with the investor-protection mechanism emphasized in the institutional literature. Control of corruption is positive and significant in South Africa but negative and insignificant in Nigeria in the long run. The South African result is consistent with the broader investor-protection mechanism emphasized by La Porta et al.

(1997) and with evidence from Ahmed et al. (2021) that corruption control can support stock-market development. The Nigerian result differs from Manasseh et al. (2017), who reported a positive long-run institutional relationship involving corruption control and accountability. The difference suggests that institutional effects may vary according to country context, specification, market measure, and time horizon.

Government effectiveness is negative and significant in both countries in the long run. This differs from Abu et al. (2019), Asongu (2012) and some of the broader governance literature that reports positive relationships. The negative coefficient should not be interpreted as evidence that effective government intrinsically reduces stock-market development. It is a conditional association within the specified dynamic model and may reflect the measurement of governance, policy responses, omitted institutional interactions, or changes in market conditions during the sample period. Furthermore, by contrast, the negative coefficients for government effectiveness and voice and accountability, and the negative Nigerian coefficient for rule of law, demonstrate that the relationship between governance and stock-market development is context-dependent. Such findings are not necessarily evidence against the institutional hypothesis; rather, they suggest that individual governance dimensions may capture different political, administrative and market processes.

Political stability is insignificant in South Africa but negative and significant in Nigeria in the long run. Roe and Siegel (2011) argue that political stability is important for the functioning of investor-protection institutions, while Yartey (2010) identifies political risk as a determinant of stock-market development in emerging economies. The Nigerian result therefore deserves attention, but the negative coefficient should be interpreted as an empirical association rather than a causal claim.

Rule of law is positive and significant in South Africa but negative and significant in Nigeria. The positive South African result accords with the investor-protection literature and with Ahmed et al. (2021), who found a positive long-run rule-of-law effect in selected South Asian countries. The Nigerian result differs from that literature and again demonstrates the importance of country-specific evidence.

Voice and accountability are negative and significant in both countries, contrasting with Abu et al. (2019) and Ahmed et al. (2021), who reported positive effects in their respective samples. These differences reinforce the value of treating governance as a set of distinct dimensions rather than assuming that all institutional indicators have identical effects.

Asongu (2012) found positive associations between government quality and African stock-market measures, while Ahmed et al. (2021) reported positive long-run effects for selected governance indicators in South Asia. The present study differs by showing that the six WGI dimensions do not uniformly move in the same direction in Nigeria and South Africa. The findings therefore support a disaggregated approach to institutional analysis.

The short-run estimates further demonstrate that institutional effects can change sign between the short and long run. Control of corruption is negative in South Africa but positive in Nigeria in the short run; government effectiveness is negative in South Africa but positive in Nigeria; political stability is negative in both; regulatory quality is positive in both; rule of law is positive in South Africa and negative in Nigeria; and voice and accountability are negative in both. These differences are consistent with the broader literature's observation that short-run adjustments can be heterogeneous even where long-run relationships are stable.

5. CONCLUSION AND POLICY IMPLICATIONS

5.1 Conclusion

This study examined the effects of six institutional-quality dimensions on stock-market development in Nigeria and South Africa using 84 quarterly observations from 2002Q1 to 2022Q4 and an ARDL/ECM framework. The Phillips–Perron tests classify the variables as I(1), while the bounds tests establish long-run relationships between market capitalisation and the explanatory variables across all six institutional specifications in both countries.

The principal finding is that institutional quality matters as it is associated with stock-market development, but the relationship or effects are heterogeneous across governance dimensions, countries and time horizons. Regulatory quality exhibits a positive and statistically significant relationship with market capitalisation in both countries in the long run and short run. Control of corruption is positive and significant in South Africa in the long run but negative and insignificant in Nigeria. Government effectiveness is negative and significant in both countries in the long run. Political stability is significant and negative in Nigeria but insignificant in South Africa in the long run. Rule of law is positive in South Africa and negative in Nigeria in the long run. Voice and accountability is negative and significant in both countries.

The study therefore does not support a simple proposition that every dimension of institutional quality has the same effect on stock-market development. Instead, the evidence points to dimension-specific and country-specific relationships. The results should be interpreted as conditional empirical associations because the study is observational and the quarterly governance observations are constructed from annual WGI data. The use of an alternative All Share Index measure provides additional evidence that the principal institutional-market relationship is not solely dependent on market capitalisation.

5.2 Recommendations

a) Capital-market regulators should strengthen the predictability, transparency and consistency of regulatory rules, given the positive association between regulatory quality and market development in both countries.
b) Governance reforms should be evaluated by individual institutional dimensions rather than a single aggregate governance score because the six WGI indicators show different empirical relationships with stock-market development.
c) Investor-protection, contract-enforcement and disclosure mechanisms should be strengthened as components of capital-market development.
d) Institutional reforms should be coordinated with monetary, exchange-rate, inflation, growth and financial-development policies.
e) Statistical agencies and researchers should improve the availability of higher-frequency governance measures and disclose any frequency-conversion method and resulting dataset for replication.
f) Future research should examine structural breaks, alternative institutional measures and additional market-development indicators such as liquidity, turnover and value traded.

LIMITATIONS OF THE STUDY

The study has some limitations. First, the WGI are perception-based composite measures or annual indicators, while the empirical models use quarterly observations. They should not be interpreted as precise measures of individual institutions. The sample is restricted to two countries and the period ending in 2022Q4. The quarterly institutional series were therefore generated through linear interpolation and should be regarded as constructed estimates rather than independently observed quarterly governance measures. This may smooth short-term institutional shocks.

Second, estimating governance dimensions separately helps address multicollinearity but prevents the coefficients from being interpreted as mutually conditional effects of all six dimensions in a single model.

Third, M2 is used for Nigeria and M3 for South Africa because of differences in the available national monetary aggregates, which limits direct cross-country comparability.

Fourth, the observational design does not establish causal relationships between institutional quality and stock-market development.

Future studies could employ higher-frequency institutional indicators, harmonized monetary aggregates, structural-break techniques and alternative measures of stock-market development. Also, future studies could extend the analysis to other African markets, employ alternative institutional measures, examine structural breaks, or investigate transmission channels linking governance reforms to market liquidity, turnover and investor participation.

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