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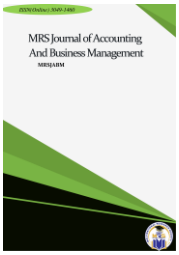

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Institutional Quality and Trade Openness as Drivers of Foreign Direct Investment in Emerging Economies: Evidence from Nigeria

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Abstract: The in host economies quality of institutions is critical in shaping FDI flows, influencing mutually volume and all the benefits from such inflows to the receiving economy. The study probed into the specific connections between FDI, trade openness and quality of institutions in Nigeria relying on autoregressive distributed lag in a quantile model framework (QARDL) as the base for analysis. On the pedestal of empirical analysis, FDI reinforced itself across all quantiles, indicating a consistent momentum effect, with significant impact at various mid-to-upper quantiles. Control of corruption in general positively reinforces FDI, although it turns dismal at certain higher quantiles, suggesting unstable and varying investors' reactions to levels of corruption. Political stability negatively affects FDI at lower quantiles but positively influences it from the mid to upper ranges. Regulatory quality mostly shows a negative effect on FDI except at certain higher quantiles. Trade openness support FDI inflow across all quantiles but with diminishing impact at higher quantiles. This study recommends that to attracting and sustaining FDI, Nigeria should implement more robust anti-corruption policies and enhance institutional governance. This includes increasing transparency, reinforcing the rule of law, and ensuring consistent regulatory practices. By minimizing corruption and creating a reliable business environment, Nigeria can improve investor confidence and encourage stable, long-term investments.

Keywords: *foreign direct investment, trade openness, institutional quality.**JEL Classification: C32, C52, E22, F21***

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Introduction

The fundamental responsibility of Foreign direct investment in driving the rate of economies of nations, and good Grasp of the influence of institutional quality on FDI inflow is a vital area of study. High institutional quality is crucial for host countries to be a magnet for FDI, as it addresses fundamental issues related to the connection between economic development and foreign investment (Adenuga, 2023). In a nut shell Institutional quality captures the effectiveness, efficiency, as well as the soundness of a country's governance structures in managing economic, social, and political activities (Masron & Nor, 2013). This includes aspects such as the fairness and consistency with which laws are enforced, the safeguarding of Ownership rights, effective contract enforcement, the efficiency and professionalism of public officials, the autonomy of the civil service from political influence and the government's ability to formulate and execute effective Strategies that promote the growth of the private sector, and its ability to curb corruption. Furthermore, stable political environment and the lack of violence are crucial for fostering a conducive environment for investment, as they provide confidence in the country's stability (Pr. Bounoua & Matallah, 2014).

The responsiveness of FDI to institutional quality underscores the importance of governance, legal integrity, and efficient regulatory systems in attracting foreign investments. Okoh (2024) noted that many sub-Saharan African countries struggle to attract FDI due to weak institutions, corruption, and political instability. In contrast, countries that have undertaken reforms to improve their governance and regulatory frameworks have seen an increase in FDI (Jude & Levieuge, 2015). Economic theories highlight that high institutional quality attracts FDI by reducing investment risks and uncertainties (North, 1990; Lucas, 1993). Good governance, rule of law, efficient bureaucracy, and property rights protection foster an environment that encourages foreign investment (Adenuga, 2023). Dunning's OLI (Ownership, Location, Internalization) paradigm stresses the significance of location-specific factors, with institutional quality being a key determinant (Dunning, 1998). Neoclassical growth model explains disparities in income per person across countries as a result of differences in Wealth accumulation, often resulting from differing savings rates (Solow, 1956). Many developing countries face challenges including low income per person and elevated unemployment levels, poverty, rapid rising population and limited savings levels leading to savings-investment shortfalls that hinder improvement of the economy, FDI serves to bridge these gaps (Sabir, Rafique, & Abbas, 2019). Endogenous growth theories further highlight the implication of FDI in promoting Economic progress via its role in transferring technology from developed to developing economies (Jude & Levieuge, 2015).

The strength and institutional efficiency in recipient countries extensively influences the flow of FDI, affecting both the volume and the benefits to the economy. UNCTAD data indicates that FDI inflows are disproportionately distributed, with Asia receiving the lion's share, while Africa lags behind. In 1997, developing Asia attracted 22% of global FDI, Latin America and the Caribbean accounted for 14%, while Africa received just 1% (Asiedu, 2006; Buchan et al., 2012). This disparity is largely attributed to Africa's poor institutional quality. In recent years, FDI inflows have declined significantly, from $1.87 trillion in 2016 to $1.43 trillion in 2020, further exacerbated by the COVID-19 pandemic (Adenuga, 2023). This decline presents significant challenges for policymakers in Africa, as factors such as well-developed infrastructure, stable political and macroeconomic conditions, natural resources, large domestic markets, ethical standards, and strong legal frameworks facilitate FDI inflows. Conversely, factors such as political instability, lack of accountability, and failure to uphold judicial rulings deter foreign investment (Asiedu, 2006; Cleeve, 2008).

Fragile institutional frameworks hinder FDI by raising the costs of investment, functioning as a form of taxation on foreign investments (Arifin, 2017). Investors are less likely to commit funds to countries plagued by corruption, favoritism, and bureaucratic inefficiencies are prevalent, since such conditions elevate operational expenses (Mengistu & Adhikary, 2011). According to Harms and Ursprung (2002), foreign investors tend to favor countries with democratic governance systems as opposed to autocratic regimes that are prone to policy reversals, which have a tendency of attracting less FDI. Despite the significance of governance quality, there is limited literature directly examining its relationship with FDI inflows. Few studies, such as those (Jude & Levieuge; 2015, Masron et al.; 2013, Jindřichovská et al.; 2020, Jude & Levieuge; 2015) proposed that institutional quality influences FDI via knowledge spillovers. Institutional quality, in addition to lower labor costs, has a vital function in attracting FDI in ASEAN nation states (Buchan et al; 2012, Masron et al; 2013). Shah et al. (2016) explored the link amid institutional quality and sector-specific FDI, concluding that neither a long-run nor short-term cause-and-effect linkage between governance quality and foreign direct investment in the primary and service industries. In contrast, Jindřichovská et al. (2020) considered the shock of FDI on institutional quality in the Czech Republic, discovering that FDI positively affects institutional improvements.

Trade openness and FDI are closely linked in a dynamic relationship. Trade openness, which involves reducing trade barriers such as tariffs and quotas, can create an environment conducive to FDI. By making it easier for multinational companies to access global markets, trade openness can attract foreign investment. Conversely, FDI can promote trade openness by introducing new technologies, improving productivity, and integrating local firms into global value chains, thereby stimulating trade. Increased trade openness correlates with higher FDI inflows in emerging markets, as it reduces investment risks and enhances market access (Nguyen et al. 2022). Akinlo (2021) observed that trade openness in sub-Saharan Africa, including Nigeria, has served an essential role in boosting FDI inflows by creating more stable and predictable economic conditions.

Institutional quality also is a major factor in shaping a country's level of trade openness. Strong institutions marked by efficient governance, compliance with the rule of law, and minimal corruption create a favorable environment for international trade. These institutions guarantee the upholding of contractual agreements and the safeguarding of property rights, and transparency in policymaking, all of which are essential for reducing transaction costs in trade. Recent studies, such as those by Méon and Sekkat (2020) and Anderson and Marcouiller (2019), show that nations with robust institutional structures are more likely to adopt liberal trade policies, which in turn enhances their economic openness.

This study provides a unique examination of the consequence of institutional strength and trade liberalization on FDI inflows in Nigeria, a key emerging economy in Africa. Using a Dynamic Quantile Autoregressive Distributed Lag (QARDL) model, the study analyzes the dynamic relationships among these variables while accounting for distributional variations across distinct quantiles throughout the study period. Unlike previous studies that focus solely on the direct link regarding the linkage between governance quality and foreign direct investment in either individual nation or cross-country contexts or settings, this research also investigates both short- and long run asymmetries and the nature of causality between the variables. Furthermore, previous studies have shown that the reaction of a dependent variable to changes in explanatory predictors may differ across quantiles or percentiles (Koenker & Bassett, 1987; Koenker, 2005). These facets of research are largely missing from the existing FDI literature in Nigeria. The rest of the study is organized as follows: Section 2 reviews the theoretical background on institutions and FDI, Section 3 describes the data and research methodology, and Section 4 presents and analyzes the empirical results and Section 5 offers the conclusions.

Theoretical Framework

North's Institutional Theory, formulated by economist Douglass North, emphasizes the role of institutions in influencing economic performance and development. According to according to this theory, institutions is understood as the rules, norms, and conventions governing societal interactions, are crucial in influencing economic actions and results (Masron et al., 2013; Acemoglu et al., 2005). North argues that institutions minimize uncertainty by providing a consistent framework for human interactions, which is vital for fostering economic growth (North, 1990).

North (1990) suggests that effective institutions affect economic operations through a variety of means, comprising the reduction of exchange, industrial processing, and output costs. Additionally, high-quality institutions contribute to lowering the expenses associated with conducting business, thereby enhancing profitability (Acemoglu & Robinson, 2012). Conversely, in markets with inadequate institutions, significant time and resources are expended on monitoring. In environments where ownership rights are inadequately safeguarded and upholding contracts is difficult, the increase in risk premium hampers economic actions (Rodrik, 2000). Consequently, foreign investors are hesitant to commit to such dicey and unfavorable conditions. Conversely, a low-risk environment is attractive to source countries, and robust institutions also facilitate improved utilization of foreign direct investment (Masron et al., 2013).

North's Institutional Theory stresses the vital role of robust and effective and standard institutions in fostering economic growth and development. It underscores that understanding and improving the institutional framework is key to achieving long-

term economic success. Lucas (1993) proposes that in developing economies, institutional elements, rather than solely economic factors, significantly contribute to attracting inward FDI. On the other hand, Dunning (1998) broadens the idea of competitive benefit by integrating institutional elements in relation to economic factors. He contends that international investors tend to favor destinations offering favorable economic and institutional environments. Consequently, the decisions of foreign investors hinge regarding the return on investment, influenced by robust governance structures and other broad economic indicators.

Empirical Evidence

Scholars generally concur that inward FDI significantly contributes to the development of host countries. In a study by Pr. Bounoua and Matallah (2014), it was concluded that enhancing or advancing economic freedom, voice and accountability in Algeria could serve as an effective strategy for creating a favorable business climate and enhancing sustained foreign direct investment inflows over time. The study explored the impact of institutional quality on foreign direct investment (FDI) inflows to Algeria from 1995 to 2011. Economic institutional quality (EIQ) was measured using the Heritage Foundation's Economic Freedom Index, while political institutional quality was assessed through government effectiveness (GE) and voice and accountability (VA). While categorizing nations classified as low-, middle-, and high-income economies, Sabir (2019) validate that Institutional quality certainly influences foreign direct investment (FDI) in positive direction across various country classifications. However, the effects of specific indicators such as Corruption control, governance efficiency, political stability, regulatory standards, legal integrity, and civic participation are notably stronger in developed countries compared to developing ones. This suggests that institutional quality holds greater significance as a determinant of Foreign direct investment (FDI) is more prevalent in developed nations compared to developing ones. Conversely, factors such as GDP per capita and the proportion of agriculture value-added in GDP, and inflation tend to negatively affect FDI inflows in developed economies. In contrast, in developing nations, trade openness, the share of agricultural value relative to GDP, per capita GDP, and the quality of infrastructure all have positive and Notable statistical impacts on foreign direct investment (FDI) inflows. The study finally deduce that institutional quality holds greater significance as a factor influencing FDI in developed nations compared to developing ones. This finding supports empirical results that have shown that nations possessing robust institutions marked by efficient governance, adherence to the Legal compliance, protected ownership rights, and minimal corruption levels are generally more successful in attracting greater volumes of FDI.

Investors are more inclined to invest in environments where they feel confident about the stability of the judicial and regulatory structure, along with the security of their investments. Conversely, countries with weak institutions and unstable governance structures often struggle to attract FDI due to heightened risks and uncertainties (Jude &Levieuge, 2015; Masron et al., 2013; Jindřichovská et al., 2020; Shah et al., 2016; Buchana et al., 2012; Arifin, 2017). But Cao Hong (2019) in Vietnam observed that institutional quality accounts for variation in foreign direct investment inflow although the study was base on provinces of the country. Also, Okoh (2024) Found in a study of selected African countries that the quality of institutions in many African economies is crucial for boosting FDI inflows. The paper employed a fixed effects regression model selected in accordance with the outcomes of the Hausman test to examine the influence of institutional quality, inflows and long-term economic development in emerging African nations. The study concluded, based on panel fixed effects analysis, that both institutional quality as measured by the Corruption Perception Index (CPI), political stability and foreign direct investment (FDI) show a significant correlation with sustainable economic growth in these economies. Fathi, et. al (2008) analyzed 107 countries from 1981 to 2005, found that institutions are a strong predictor of FDI, with key factors being ownership rights and legal integrity, and expropriation risk. A novel finding was the sectoral effect of institutions on FDI. While institutional quality exerts minimal influence on FDI in the basic sector, it is crucial for FDI in manufacturing and services.

Hayat (2019) argued that institutional quality affects the linkage between foreign investment and economic growth mainly via the buildup of capital. Although research such as that Mody and Murshid (2005) found that FDI produces a short-term displacement effect, while other studies show that better institutional quality encourages foreign investors to target sectors with fewer domestic firms, boosting capital accumulation and benefiting the domestic economy. Sound institutions increase demand in industries with foreign firms. Conversely, Poor institutional quality redirects exports away from manufactured goods toward non-manufactured products, thereby diminishing National economic performance (Kraay, Kaufmann,& Zoido, 1999).

In a recent study, Adenuga (2023) assessed institutional quality in Nigeria via factors like Public participation and accountability, administrative efficiency, adherence to legal frameworks, quality of regulations, integrity in public affairs, and political stability. Using GMM estimation to address endogeneity, The study revealed that anti-corruption measures, public accountability, efficient governance, legal system integrity, and sound regulatory practices were key factors that positively but insignificantly affect FDI inflows, while political stability negatively but insignificantly affects FDI inflows.

While previous research has established that institutional quality affects foreign direct investment (FDI) inflows, most studies have concentrated on average effects and have neglected the variation of these impacts across different levels of FDI. Traditional approaches such as fixed effects and GMM often fail to capture the complex and heterogeneous influences that institutional factors, along with trade openness, may have on countries with varying degrees of FDI inflows or across different sectors. The Quantile ARDL model presents a valuable tool for examining these asymmetric short and long-run special effects, but it remains underutilized in FDI research, particularly in Nigeria. This study aims to fill this gap by employing the Quantile ARDL approach to investigate how multiple institutional quality measures and trade openness uniquely influence FDI inflows across the entire distribution, offering more special insights to guide policy and investment decisions.

Methodological Issues

This study aims to examine whether the dynamic interaction between foreign direct investment and institutional quality varies asymmetrically across different levels of these variables over the study period. The research will utilize the Quantile Autoregressive Distributed Lag (QARDL) model as demonstrated by Cho et al. (2015). The QARDL model represents an improvement over the traditional ARDL framework put forward

by Pesaran and Shin (1999), which is limited in its ability to capture nonlinearity and asymmetries in macroeconomic relationships. By using the QARDL model, the study aims to address these shortcomings and provide a more detailed and robust assessment of the dynamic link between FDI and institutional quality factors. By accounting for distributional asymmetry, the QARDL model is expected to yield insights that are more reflective of the complexities inherent in the linkage connecting the strength of institutional frameworks and inflows of FDI. The research data drawn from the World Bank Development Indicators, spanning from Q1 1996 to Q4 2022, providing a sufficiently long time horizon for comprehensive econometric investigation. The model of this study is specified, following the theoretical view that strong institutional quality influences FDI in a positive manner by mobilizing the economy's investible resources. This view aligns with the framework proposed by Cao Hong (2019), with modifications to incorporate the effect of trade openness, recognizing its significant role in enhancing foreign direct investment. The model can be written as:

FDI= f(RQ, CC,PSV, TOP)…… ……3.1

Where RQ portrays regulatory quality, CC stands for corruption control and PSV represents Political stability and the lack of violence. The above three variables represents institutional quality while TOP stands for trade openness. Theoretically, all the indicators are expected to have a positive relationship with FDI, since they collectively contribute to a stable, transparent, and efficient environment that is conducive to foreign investment. The econometric representation of the equation 3.1 is expressed as:

$$FDI_t = \theta_0 + \theta_1 PSV_t + \theta_2 RQ_t + \theta_3 CC_t + \theta_4 RL_t + \varepsilon_t ... \quad (3.2)$$

Where θ_i (θ_i = 1 to 4) are the explanatory variables are associated with their respective coefficients, and ε captures the stochastic disturbance term and PSV, RQ, CC, TOP and FDI are as defined above. Therefore, we specify Eqn. 3.2 in autoregressive distributed-lag (ARDL) form. The basic ARDL approach is used as a starting point before moving on to the more advanced Quantile ARDL analysis. The standard form of the model is shown below:

$$\Delta FDI_t = \alpha_0 + \alpha_1 PSV_t + \alpha_2 RQ_t + \alpha_3 CC_t + \alpha_4 TOP_t + \sum_{i=1}^{n} \delta_1 \Delta FDI_{t-1} + \sum_{i=0}^{n} \delta_2 \Delta PSV_{t-1} + \sum_{i=0}^{n} \delta_3 \Delta RQ_{t-1} + \sum_{i=0}^{n} \delta_4 \Delta CC_{t-1} + \sum_{i=0}^{n} \delta_5 \Delta TOP_{t-1} + \varphi ECT + \mu_1 \quad (3.3)$$

The Coefficients α and δ in equation 3.3 measure the long run and shot run relationships respectively. Contrasting the linear ARDL model that only consider the average impacts, the improved methodology version (QARDL) considers the median which gives a comprehensive examination of both the immediate and prolonged relationships across the full range of context-dependent uneven distributions of both the dependent and independent variables. The QARDL model used in this study illustrates how Nigerian foreign direct investment responds to variations in institutional quality and trade openness across different points in the distribution. The quantile ARDL specification is as follows:

$$QFDI_t = \delta_0(\sigma) + \sum_{i=1}^{n1} \delta_1(\sigma)\Delta FDI_{t-1} + \sum_{i=0}^{n2} \delta_2(\sigma)\Delta PSV_{t-1} + \sum_{i=0}^{n3} \delta_3(\sigma)\Delta RQ_{t-1} + + \sum_{i=0}^{n4} \delta_4(\sigma)\Delta CC_{t-1} + \sum_{i=0}^{n5} \delta_5(\sigma)\Delta TOP_{t-1} + \phi ECT + \alpha_1(\sigma)PSV_{t-1} + \alpha_2(\sigma)RQ_{t-1} + \alpha_3(\sigma)CC_{t-1} + \alpha_4(\sigma)TOP_{t-1} + \mu_1 \quad (3.4)$$

Here, Δ stands for the lag operator, (σ) refers to the quantile index, δ_0 represents the drift coefficient, and n_1 to n_7 denote the lag lengths orders which will be obtained by Schwarz Info Criterion (SIC). $\delta_1 to\ \delta_5$ represent the short run coefficients, whereas, α_2 to α_4 are long-run coefficients and ϕ is the coefficient of error correction model. Other variables are as defined earlier. Equation 3.4 is the QARDL specification for model 3.1 showing the quantile interactions of institutional quality indices and trade openness (PSV, RQ, CC, TOP) and foreign direct investment. The estimations will rely on the following 10 quantiles: σ∈{10, 20, 30, 40, 50, 50,60,70, 80, 90}. To determine the characteristics of the long-term relation among the components of the series, the study relied on two way cointegration test which is a necessary condition for the quantile ARDL. In addition, the Wald test, which approaches a Chi-square distribution as the sample size increases, will be employed to examine the quantile-specific asymmetric effects linking governance standards and foreign direct investment. Wald test is used to evaluate the null hypothesis of parameter stability for both the short-term and long-term periods components of Equation 3.4.

The selection of model formulation employed in this study relies on the Quantile ARDL technique is based on its distinct advantages compared to quantile-based methods and both linear and nonlinear ARDL models. Firstly, QARDL effectively captures the size-based asymmetric effects of the regressors on the dependent variables (Cho et al., 2014). Secondly, unlike Johansen's cointegration method, requiring uniform integration order across all variables before performing a cointegration test, the QARDL model uses the ARDL bound testing approach. This approach is applicable even when the regressors consist of a permutation of I(0) and I(1) variables or exhibit co-integration making it useful when the stationarity of the data is uncertain.

Empirical Result

Descriptive Analysis

Conventionally, most empirical narration typically begins with certain investigation, which prepares the reader for a more rigorous estimation. As such, the summary data were compiled for this investigation using the pertinent series. This analysis shows, in addition to other elements, the descriptive statistics highlight the underlying patterns regarding the series and the pattern of their distributions. They predominantly shed light on the distributional

features of the data, as indicated according to the test outcomes presented in Table 1.

Table 1: Descriptive Statistics Results

Variables	Mean	Maximum	Std_Dev	Skewness	Kurtosis	J_B Stat.
FDI	1.245560	2.900249	0.853724	0.276885	1.924231	1.7079
CC	0.232143	0.333333	0.052495	-0.729771	4.108267	3.9183
PSV	0.569968	0.738636	0.075834	1.358414	3.877319	9.5093**
RQ	0.451515	0.590909	0.091044	-0.523067	2.586498	1.4763
TOP	0.359729	0.507676	0.078990	-0.397710	2.881720	0.7545

Computed by the authors based on the available data (**)Suggests the null hypothesis of normality is rejected at the 5% significance level. FDI designates foreign domestic investment; CC stands for control of corruption, PSV represents political stability and absence of violence. while RQ portrays regulatory quality, TOP stands for trade openness.

Descriptive statistics derived from the raw data provide insights into the true behavioral characteristics of the variables. Results from the Jarque-Bera test suggests that the normal distribution assumption is rejected for all variables except PSV, implying that the majority of the series deviate from normality. This analysis supports the adoption of a quantile-based model, as evidenced by Ullah et al. (2022), Odionye et al. (2023b), and Odo et al. (2024).

Unit Root Test

To determine the integration order of the data set, their stationarity characteristics were evaluated using both traditional Stationarity tests (ADF and PP). The yielded results are summarized in Table 2. The best lag length for each variable was determined using information criteria.

Table 2: Unit Roots Test Result

	Augmented Dickey Fuller			Phillip-Perron		
Variable	Level	1st diff	I (d)	Level	1st diff	I(d)
FDI	-1.30	-7.35**	I(1)	-2.045	-8.36**	I(1)
CC	-6.10**	N/A	I(0)	-2.83-	-5.69**	I(1)
PSV	-3.52**	N/A	I(0)	-2.76	-8.18**	I(1)
TOP	-2.49	-5.82**	I(1)	-2.48	-5.85**	I(1)
RQ	-1.80	-7.05**	I(1)	-3.39	-7.58**	I(1)

Author's estimation ** signifies that the variable achieves stationarity at the 1% or 5% significance level. I(d) refers to the integration order of the respective series

Table 2 shows the findings from the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests. The PP test indicates that all variables become stationary following their first difference, implying an integration order of one [I(1)]. On the other hand, the ADF test presents some discrepancies, with control of corruption and political stability and absence of violence being stationary at level, indicating an integration order of zero [I(0)]. The other variables are consistent with the PP test findings, achieving stationarity after first differencing.

The results highlight discrepancies between the ADF and PP unit root tests regarding the integration orders of the variables. The ADF test suggests that some variables are stationary at level [I(0)], whereas others require first differencing to become stationary [I(1)]. In contrast, the PP test consistently classifies all variables as integrated of order one [I(1)]. Consequently, we move forward to examine whether a cointegration relationship exists among these variables.

Two Step Cointegration Test

The necessary condition for estimating the quantile ARDL model is that the error correction model must be stationary at level as shown in the subsequent table

Table 3: ECM test for the model

Variables	Level	1st Diff	Order of Integration	Prob. value
ECM 1	-6.802957	N/A	I(0)	0.0000

Author's computation

The researchers therefore proceed to estimate the quantile autoregressive distributed lag for the models as shown in table 4.5 below. Koenker and Bassett (1978) noted that quantile regression does not rely on strict distributional assumptions, making it a more robust method for estimating relationships between dependent and independent variables across various quantiles. This advantage has led to its widespread adoption in recent research (Huang, Zang, Cheng & He, 2017; Mazucheli, Levia, Alves & Menzes, 2021).

Table 4: Summary of Results of the Quantile Autoregressive distributed lag Model

Variables		
FDI(-1)	0.758218**	(0.224)
CC	17.76783	(1.912)
CC(-1)	-16.23452**	(2.742)
CC(-2)	8.878767	(1.468)
PSV	5.375636	(1.102)
PSV(-1)	-7.429531	(1.642)
PSV(-2)	6.869078	(1.565)
TOP	1.163440	(0.300)
TOP(-1)	6.346986	(1.487)
TOP(-2)	-5.302430	(1.298)
RQ	-2.373864	(0.546)
RQ(-1)	-2.170741	(0.693)

Pseudo R-squared	0.702031	Mean dependent var	1.315207
Adjusted R-squared	0.379232	S.D. dependent var	0.847627
S.E. of regression	0.544187	Objective	2.803507
Quantile dependent var	1.380374	Restr. objective	9.408727
Sparsity	1.250395	Quasi-LR statistic	42.26007
Prob(Quasi-LR stat)	0.000059		

Robustness Checks of the models		
Symmetric Test	3.012	(0.9979)
Ramsey RSET	0.023	(0.8805)
J-B Test	6.846	(0,0347) **
B-P-G Het Test	1.444	(0.3224)
B-G- Serial A/C	5.133	(0.002)
QSE Test	8.178	(0.9997)
CUSUM	Stable	
CUSUM Sq	Stable	

*** Significance at the 5% level is indicated by**; values enclosed in parentheses '()' are t-statistics, whereas "()" denotes p-values. The B-P-G Het test is used to detect heteroskedasticity, A/C refers to autocorrelation, and QSE represents quantile slope coefficients. Source: Authors' analysis conducted with EViews 12***

The results from the quantile autoregressive distributed lag analysis indicate that foreign direct investment exhibits significant persistence, as its past values positively influence FDI inflows at present, Political calm and absence of unrest show mixed effects, with the contemporaneous value exerting a positive but statistically insignificant impact, while the first lag has a negative effect and the second lag turns positive, suggesting fluctuations in the influence of stability over time. Control of corruption positively affects FDI in the current period, but its first lag has a negative impact, implying that improvements in corruption control may initially deter investors before yielding positive effects in subsequent periods. Regulatory quality does not show a statistically significant relationship with FDI, suggesting that its influence may be overshadowed by other institutional factors. Trade openness, though positive in the current period, does not exhibit statistical significance, while its first lag indicates a stronger positive effect, implying that the benefits of increased openness to trade materialize over time. The overall model demonstrates a good fit, with a relatively high pseudo R-squared, indicating that the institutional variables and trade openness jointly elucidate a considerable portion of the variations in FDI inflows.

The above results support with the existing studies suggesting that FDI tends to follow a path-dependent trajectory, where previous investments create a reinforcing effect on future inflows. Studies such as Asiedu (2006) and Anyanwu (2012) have similarly observed that once multinational firms establish operations in a country, they are likely to reinvest and attract further investments due to existing market knowledge, established networks, and reduced uncertainty. Political firmness and the lack of violence show fluctuating effects on FDI, with the immediate effect being positive but statistically insignificant, while the lag one has a negative impact, and the lag two turns positive. This suggests that political stability does not yield immediate benefits for FDI but may have a delayed positive impact after initial instability-related concerns subside. This pattern is agrees with findings by Busse and Hefeker (2007), who argued that political instability initially deters investment due to the uncertainty it creates. However, in the long run, as stability is restored and institutional reforms take root, FDI inflows tend to increase. Similarly, Onyeiwu and Shrestha (2004) found that political risks discourage investors in the short term but, if effectively managed, can enhance investor confidence over time.

Control of corruption exerts a mixed impact on FDI inflows. The current period's positive effect suggests that stronger anti-corruption measures improve investor confidence, aligning with the conclusions of Wei (2000), who argued that corruption serves as an unofficial tax that deters FDI by increasing operational costs and creating uncertainties in contract enforcement. However, the first lag of control of corruption shows a negative effect, indicating that reforms aimed at curbing corruption may initially disrupt entrenched networks, leading to an adjustment period

before the positive effects materialize. This phenomenon was highlighted in the study by Méon and Sekkat (2005), who found that while corruption discourages FDI, sudden anti-corruption efforts can initially create an uncertain business climate, causing a temporary decline in investments before a long-term recovery. Regulatory quality fails to exhibit a statistically meaningful effect on FDI, implying that its role may be less pronounced compared to other institutional factors such as political stability and corruption control. These finding contrasts with studies like Globerman and Shapiro (2002), which emphasized that well-functioning regulatory framework, attract FDI by ensuring contract enforcement and reducing transaction costs. However, the insignificance observed in the present study suggests that regulatory quality alone may not be a primary determinant of FDI in the short term, particularly in economies where other institutional weaknesses prevail.

Trade openness, though showing a positive effect in the current period, lacks statistical significance, while its first lag demonstrates a stronger positive effect, suggesting that the benefits of increased openness to trade take time to manifest. This supports the argument made by Salisu, Balasubramanyam and Sapsford (1996), who emphasized that the impact of trade openness on FDI is not instantaneous but develops as firms adapt to new market conditions and trade policies. Likewise, Edwards (1998) observed that while liberalization of trade policies encourages FDI, the lagged response is due to the time required for firms to assess risks, adjust strategies, and capitalize on new opportunities. The above analysis demonstrates a fine fit, as specified by the pseudo R-squared value which is very, implying that institutional factors and trade openness collectively substantially affect significant portion of the variations in FDI inflows. This suggests that a permutation of political stability, corruption control, and openness to trade performs crucial function in shaping investors decisions, a view corroborated by studies such as Dunning (2002) and Asiedu (2013), which stress the magnitude of institutional quality and policy frameworks in drawing and sustaining inflows of FDI. Therefore, policy efforts aimed at strengthening institutions, ensuring political stability, and gradually liberalizing trade policies are essential for enhancing the pleasant appearance of an economy to domestic and foreign investors.

Table 5: Result of Quantile Estimation process

Quantiles	FDI(-1)	CC	PSV	RQ	TOP
0.10	0.65 (NA)	-13.97**N/A	-2.952(N/A)	-4.611(NA)	0.80(NA)
0.20	0.65 (0.35)	-15.41**(-3.4)	-2.952(-0.353)	-4.61(-0.78)	0.81(0.11)
0.30	0.74**(2.24)	-16.82**(-2.9)	-2.556(-0.328)	-2.497(-0.46)	0.21(0.03)
0.40	0.701**(2.08)	-16.45** (-2.7)	-0.358(-0.045)	-1.371(-0.24)	-0.08(0.49)
0.50	0.708**(2.11)	-16.23**(-2.7)	0.655 (0.083)	-3.41(-0.62)	0.51(-0.01)
0.60	1.018**(2.73)	-15.90**(-3.4)	7.576 (0.860)	1.018(0.16)	2.18 (0.31)
0.70	0.772 (1.991)	-16.47**(-2.8)	1.384 (0.151)	2.08(0.32)	3.84(0.48)
0.80	0.961**(2.50)	-14.36**(-1.9)	7.218 (0.796)	0.87(0.14)	-2.69(0.75)
0.90	10.955 (NA)	-14.11 N/A	14.096(NA)	-6.19 (NA)	-0.52(NA)

***(*) represent significance at 1%(5%) point. Numbers in parenthesis are t-statistics*.**

Table 5 shows the autoregressive estimation on quantile framework of the non-symmetric effect of institutional quality variables on foreign direct investment inflow at different quantiles. Evidently, the result indicates FDI as a direct function of itself for all the quantiles and significant at 3rd, 4th, 5th, 6th and 8th quantiles are all significant, whereas some institutional quality variables shows insignificant mixed reactions at different quantiles. For control of corruption, there is inverse relationship at all quantiles. Political stability and absence of violence from 1st to 4th quantiles negatively impact FDI while 5th to 9th quantiles reinforces FDI inflow into Nigeria. Regulatory quality negatively influences FDI inflow at all quantiles except 6th, 7th and 8th quantiles. Lastly, Trade openness improve the inflow of FDI into the Country at all quartiles but has decreasing influence on FDI inflow at 4th, 8th and 9th quantiles.

This outcome of our study further authenticate the economic hypothesis that strong institutional quality and trade liberalization exerts accelerating influence on foreign direct investment inflow into Nigeria. Thus strong institutions strengthens the economic prosperity of the country and makes it more attractive to foreign investor who are risk averse and desperately determine to maximize profit in a business friendly environment.

Conclusion and Policy Suggestions

The paper investigated the link between foreign direct investment, trade openness and institutional quality in Nigeria adopting autoregressive distributed lag on quantile model framework. The research reveals a nuanced and asymmetric connection involving Foreign Direct Investment (FDI), openness to trade, and quality of institutions in Nigeria, assessed across different quantiles using autoregressive quantile estimation. FDI is shown to reinforce itself across all quantiles, indicating a consistent momentum effect, with significant impact at various mid-to-upper quantiles. corruption control generally has a negative influence on FDI, throughout the quantiles, suggesting investors' inverse reactions to corruption levels. Political stability negatively affects FDI at lower quantiles but positively influences it from the mid to upper ranges, indicating an evolving investor perception based on the stability context.

Regulatory quality mostly shows a negative effect on FDI except at certain higher quantiles, highlighting the potential deterrent of inconsistent regulatory practices. Trade openness support FDI inflow across all quantiles but with diminishing impact at higher quantiles. The findings support the notion that robust institutional quality can enhance economic prosperity and attract risk-averse foreign investors seeking stability and profitability. Strong governance structures are essential for creating a business-friendly environment that appeals to investors aiming to maximize returns.

This study recommends that to draw and sustain or uphold Foreign Direct Investment across all quantiles, Nigeria should implement more robust anti-corruption policies and enhance institutional governance. This includes increasing transparency, reinforcing the rule of law, and ensuring consistent regulatory

practices. By minimizing corruption and creating a reliable business environment, Nigeria can improve investor confidence and encourage stable, long-term investments.

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Compliances with Ethical Standards: ChatGTP was used to check and correct grammar in the study

Data Availability: The dataset for this study is accessible from the corresponding author upon a valid request.

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