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FINANCIAL INCLUSION AND CAPITAL MARKET DEEPENING IN NIGERIA: THE MODERATING ROLE OF INSTITUTIONAL QUALITY

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Abstract
This study examined the relationship between financial inclusion and capital market deepening in Nigeria, with particular emphasis on the moderating role of institutional quality. The study was motivated by the need to establish whether expanded access to and use of formal financial services translates into capital market development and whether institutional quality conditions this relationship. Quarterly time-series data covering 2010Q1–2025Q3 were obtained from the Central Bank of Nigeria Statistical Bulletin, World Development Indicators, Worldwide Governance Indicators and EFInA. Capital market deepening, financial inclusion and institutional quality were constructed as composite indices using principal component analysis. The study employed the autoregressive distributed lag (ARDL) framework and bounds testing approach, incorporating inflation, monetary policy rate, real GDP growth and a foreign exchange reform dummy as control variables. The bounds test produced an F-statistic of 2.1309, below the 5% lower-bound critical value of 2.22, indicating that a long-run cointegrating relationship was not established at the 5% significance level. The short-run estimates revealed that financial inclusion had a positive and statistically significant relationship with capital market deepening (coefficient = 0.4044; p = 0.0066). Institutional quality and its interaction with financial inclusion were statistically insignificant, providing no sufficient evidence of a moderating effect. Inflation was positively significant, whereas the monetary policy rate, real GDP growth and the foreign exchange reform dummy were insignificant at the 5% level. Diagnostic tests did not indicate significant serial correlation, heteroskedasticity, ARCH effects or functional-form misspecification. The study concludes that financial inclusion is positively associated with short-run capital market deepening in Nigeria, although neither a long-run relationship nor a significant moderating effect of institutional quality was established. It recommends strengthening investment-oriented financial inclusion, financial literacy, investor protection and institutional effectiveness to support broader participation in the capital market.

Keywords: *Financial Inclusion, Capital Market Deepening, Institutional Quality, Autoregressive Distributed Lag, Diagnostic Tests.*
JEL Classification: *G20, G28, O16, C22*

INTRODUCTION

Financial inclusion and capital market deepening have increasingly become central themes in contemporary financial development discourse, particularly within emerging and developing economies. Financial inclusion refers to the accessibility and usage of affordable financial services, such as savings, credit, insurance, and payment systems, by individuals and businesses, especially the underserved population. In

contrast, capital market deepening reflects the expansion, efficiency, and sophistication of financial markets, particularly equity and bond markets, which facilitate long-term investment and economic growth.

In recent years, policymakers and scholars have emphasised financial inclusion as a critical driver of economic development and financial system stability. By integrating previously excluded individuals into the formal financial system, financial inclusion enhances savings mobilisation, promotes investment, and improves resource allocation. Empirical evidence suggests that inclusive financial systems enable households and firms to participate more actively in economic activities, thereby contributing to broader financial sector development and economic growth (Gabriel, Labaran & Adewale, 2025). However, the transmission mechanism through which financial inclusion translates into capital market development remains complex and context-dependent.

A growing body of recent literature highlights that financial inclusion can foster capital market deepening by increasing the pool of investors and enhancing financial intermediation. For instance, studies using African panel data demonstrate that financial inclusion significantly contributes to the long-run development of capital markets by improving access to financial instruments and facilitating participation in investment opportunities. Similarly, recent empirical work shows that financial inclusion usage, rather than mere access, positively influences capital market development, as it channels savings into long-term financial assets (Otinga et al. 2025). This distinction underscores that the effectiveness of financial inclusion depends not only on access but also on the actual utilisation of financial services.

Despite these positive linkages, the role of institutional quality has emerged as a critical moderating factor in the financial inclusion–capital market nexus. Institutional quality encompasses governance structures, regulatory effectiveness, rule of law, control of corruption, and political stability. Strong institutions enhance investor confidence, protect property rights, and ensure the efficient functioning of financial markets. Recent studies indicate that institutional quality significantly promotes both financial inclusion and financial market development by creating an enabling environment for financial transactions and investment activities (Zeqiraj et al. 2022).

More importantly, emerging evidence suggests that institutional quality does not merely exert a direct effect but also moderates the relationship between financial inclusion and capital market deepening. For example, recent African evidence reveals that while both financial inclusion and institutional quality independently support capital market development in the long run, their interaction effect may vary depending on the strength of institutions. In some cases, weak institutional frameworks can dampen or even reverse the positive impact of financial inclusion on capital markets, leading to inefficiencies and limited financial participation (Otinga et al. 2025). This implies that expanding access to financial services without corresponding institutional improvements may not yield the desired outcomes in terms of market development.

Furthermore, contemporary studies introduce additional moderating channels such as financial technology (fintech), which strengthens the linkage between financial inclusion and capital market development by improving accessibility and efficiency of financial services. Fintech-driven inclusion has been shown to enhance participation in capital markets, particularly in countries with relatively strong institutional frameworks (Otinga et al. 2025). This reinforces the argument that institutional quality conditions the effectiveness of financial innovations and inclusion policies.

In developing economies such as Nigeria, where financial exclusion remains relatively high and capital markets are still evolving, the interplay between financial inclusion and institutional quality becomes even more critical. Weak regulatory frameworks, governance challenges, and limited investor protection mechanisms can constrain the ability of financial inclusion initiatives to translate into meaningful capital market deepening. Conversely, strengthening institutional quality can amplify the benefits of financial inclusion by improving transparency, reducing transaction costs, and fostering investor confidence.

In summary, while financial inclusion is widely recognised as a catalyst for capital market deepening, its effectiveness is contingent upon the quality of institutions. The moderating role of institutional quality highlights the need for a holistic policy approach that simultaneously promotes inclusive financial systems and strengthens institutional frameworks. This gap in understanding the conditional relationship between financial inclusion and capital market development provides the motivation for further empirical investigation, particularly in the context of emerging economies.

Statement of the Problem

The persistence of shallow capital markets in many emerging economies, despite notable progress in financial inclusion, raises a fundamental policy and empirical concern. In Nigeria, significant strides have been made to expand access to financial services through reforms led by the Central Bank of Nigeria, including the National Financial Inclusion Strategy, the proliferation of agent banking, and rapid growth in digital financial services. Notwithstanding these advances, key indicators of capital market deepening, such as market capitalisation, liquidity ratios, and breadth of participation, remain comparatively low and volatile. This disconnect suggests that increased financial access has not sufficiently translated into meaningful engagement

with capital market instruments.

A central weakness in the existing financial inclusion architecture is that it is largely skewed toward basic financial services, payments, savings, and short-term credit, rather than investment-oriented products that facilitate long-term capital formation. Recent evidence indicates that while access to financial services has improved, actual usage for wealth creation and participation in formal capital markets remains limited. Consequently, a substantial proportion of financially included individuals remain outside the investment ecosystem, thereby constraining the capacity of financial inclusion to drive capital market deepening.

More critically, the extant literature presents inconclusive and sometimes conflicting findings regarding the financial inclusion–capital market nexus. While some studies document a positive and statistically significant relationship, others report weak or non-linear effects, suggesting that the linkage may be conditional rather than universal. One major limitation of these studies is their predominant focus on direct effects, with insufficient attention to the structural and institutional context within which financial systems operate. This has resulted in an oversimplified understanding of the transmission mechanism from financial inclusion to capital market development.

Institutional quality represents a crucial but under examined conditioning factor in this relationship. Elements such as regulatory effectiveness, rule of law, control of corruption, and investor protection play a decisive role in shaping financial behaviour and market outcomes. In environments characterised by weak institutions, increased financial access may not translate into productive investment due to low trust in financial systems, high transaction risks, and inadequate enforcement of contracts. Conversely, strong institutional frameworks enhance market credibility, reduce information asymmetry, and incentivise long-term investment behaviour. However, empirical investigations explicitly modelling institutional quality as a moderating variable remain scarce, particularly in the Nigerian context.

Furthermore, methodological limitations in prior studies exacerbate the problem. Many analyses rely on single proxies or narrow indicators for financial inclusion and capital market development, thereby failing to capture their multidimensional nature. This raises concerns about measurement bias and the robustness of existing conclusions. Additionally, limited use of composite indices, such as Principal Component Analysis (PCA)-based measures, restricts the ability to fully understand the dynamics of financial development.

The implication of these gaps is significant. Policymakers may overestimate the effectiveness of financial inclusion policies in driving capital market outcomes without addressing the institutional deficiencies that constrain their impact. This could lead to a misallocation of resources and the persistence of underdeveloped capital markets despite expanded financial access.

Against this backdrop, the core problem this study addresses is the inadequate understanding of how institutional quality conditions the relationship between financial inclusion and capital market deepening. Specifically, there is a need to determine whether improvements in financial inclusion can effectively stimulate capital market development in the absence of strong institutional frameworks, or whether institutional quality acts as a necessary catalyst that amplifies or dampens this relationship. Addressing this problem is essential for developing a more integrated and evidence-based approach to financial sector reforms in Nigeria and similar emerging economies.

LITERATURE REVIEW

Conceptual Perspectives

Financial inclusion, capital market deepening, and institutional quality have emerged as interconnected concepts within contemporary financial development literature, particularly in developing economies where financial systems remain characterized by structural rigidities, low investment participation, and weak institutional frameworks. The growing digitalization of financial services, expansion of mobile money operations, and increasing emphasis on inclusive finance have further intensified scholarly interest in understanding how financial inclusion contributes to broader financial market development. However, empirical evidence increasingly suggests that the effectiveness of financial inclusion in stimulating capital market activities depends substantially on the quality of institutions operating within the economy. Consequently, this study conceptualizes financial inclusion, capital market deepening, and institutional quality as mutually reinforcing components within the financial development process.

Financial inclusion refers to the process through which individuals, households, and businesses gain affordable, accessible, and effective access to formal financial services and products. The concept extends beyond mere ownership of bank accounts to encompass active participation in formal financial systems through savings, payments, credit acquisition, insurance utilization, and digital financial transactions. Financial inclusion aims to reduce the proportion of economically active populations excluded from formal financial systems while enhancing financial intermediation and economic participation. In developing economies such as Nigeria, financial inclusion has increasingly become associated with technological innovations such as mobile banking, agent banking, fintech platforms, and mobile money services, all of which have substantially transformed

financial accessibility.

Conceptually, financial inclusion operates through three major dimensions: access, usage, and quality of financial services. Access refers to the availability and physical reach of financial service channels such as banks, automated teller machines, mobile money agents, and digital payment systems. Usage captures the extent to which financial services are actively utilized for savings, investments, credit, and transactions, while quality reflects the affordability, efficiency, reliability, and suitability of financial services to users' needs. These dimensions collectively determine the extent to which financial systems are capable of integrating economically active individuals into formal financial activities.

The relevance of financial inclusion to capital market development lies in its ability to mobilise savings, widen the investor base, improve financial literacy, and enhance participation in investment activities. Financially included individuals are more likely to participate in formal investment channels, purchase financial assets, and engage with capital market institutions. Thus, financial inclusion contributes to the expansion of market liquidity and facilitates broader participation within financial markets.

Capital market deepening refers to the expansion, efficiency, sophistication, and liquidity of capital market activities within an economy. It reflects the extent to which capital markets effectively mobilise long-term financial resources and allocate them efficiently toward productive investments. Capital market deepening is commonly associated with increases in market capitalisation, value of stocks traded, turnover ratio, number of listed securities, and overall market liquidity. Beyond quantitative expansion, the concept also encompasses improvements in institutional efficiency, market transparency, financial innovation, and trading mechanisms.

In the context of developing economies, capital market deepening is considered essential for promoting economic growth because deep and efficient capital markets facilitate long-term investment financing, risk diversification, and efficient allocation of financial resources. Indicators such as value of stocks traded as a percentage of gross domestic product are frequently employed to capture the liquidity and activity level of the capital market. Increased trading activity reflects greater investor participation, improved market confidence, and enhanced efficiency in financial intermediation.

The relationship between financial inclusion and capital market deepening is theoretically grounded in the financial intermediation process. As access to financial services expands, more individuals become integrated into the formal financial system, thereby increasing savings mobilisation and investment participation. The emergence of digital finance and mobile money platforms further enhances transaction efficiency and lowers entry barriers into financial markets. Consequently, financial inclusion can stimulate capital market deepening through improved liquidity, broader investor participation, and increased demand for financial assets.

Nevertheless, the extent to which financial inclusion translates into capital market development depends significantly on institutional quality. Institutional quality refers to the effectiveness, credibility, and efficiency of governance structures, legal systems, regulatory frameworks, and public institutions within an economy. It encompasses factors such as government effectiveness, regulatory quality, rule of law, control of corruption, political stability, and bureaucratic efficiency. Strong institutional quality enhances economic confidence by ensuring policy consistency, protecting property rights, enforcing contracts, and promoting regulatory transparency.

Within financial markets, institutional quality plays a critical role in sustaining investor confidence and maintaining market integrity. Strong institutions reduce uncertainty, improve enforcement of financial regulations, and strengthen investor protection mechanisms, thereby encouraging financial participation and market expansion. Conversely, weak institutional structures may undermine the effectiveness of financial inclusion policies through corruption, policy inconsistency, regulatory inefficiency, and weak legal enforcement. In such environments, increases in financial access may not necessarily translate into sustainable capital market development.

The moderating role of institutional quality therefore becomes central to understanding the relationship between financial inclusion and capital market deepening. A moderating variable influences the strength or direction of the relationship between an independent variable and a dependent variable. In this study, institutional quality is conceptualised as a moderating factor that conditions the effectiveness of financial inclusion in promoting capital market deepening. This implies that the impact of financial inclusion on capital market performance may be stronger under conditions of high institutional quality and weaker where institutions are ineffective.

Conceptually, strong institutions provide the enabling environment through which financial inclusion can effectively stimulate investment participation, improve financial transparency, and enhance market efficiency. Effective institutions strengthen financial regulation, reduce transaction risks, and improve investor confidence, thereby allowing inclusive financial systems to contribute more significantly to capital market expansion. Conversely, where institutional quality is weak, financial inclusion initiatives may experience limited

effectiveness due to poor governance, corruption, weak regulatory enforcement, and policy instability.

Overall, the conceptual argument underpinning this study is that financial inclusion alone may be insufficient to deepen capital markets in the absence of strong institutional structures. Rather, institutional quality serves as a transmission mechanism that determines whether inclusive financial systems can effectively translate into sustainable capital market development. This conceptual positioning provides a stronger analytical foundation for examining the nexus among financial inclusion, institutional quality, and capital market deepening within the Nigerian economy.

Theoretical Perspectives

A rigorous examination of financial inclusion and capital market deepening, especially with institutional quality as a moderator, draws on a set of complementary theoretical frameworks. No single theory fully captures the multidimensional relationships involved; rather, the study is best anchored on an integrated theoretical base as outlined below.

Financial Intermediation Theory

Financial Intermediation Theory explains the role of financial institutions in facilitating the transfer of funds from surplus economic units, such as households and depositors, to deficit units, including businesses and investors requiring financing. The theory is grounded in the works of Gurley and Shaw (1960) and was further developed by Diamond (1984), who demonstrated how financial intermediaries reduce the costs associated with monitoring borrowers. It posits that financial institutions promote economic efficiency by mobilising savings, reducing transaction and information costs, screening borrowers, monitoring investments and managing financial risks. Through these functions, banks and other financial intermediaries facilitate credit creation, capital formation and productive investment. Their contribution to economic growth, however, depends on their ability to allocate financial resources efficiently, maintain financial stability and direct credit towards economically productive activities.

The theory is relevant to the present study because it provides the principal theoretical foundation for examining the relationship between financial inclusion and capital deepening in Nigeria. Deposit money banks mobilise deposits and channel funds to households, businesses and other economic agents, thereby supporting investment, entrepreneurship, employment and output expansion. However, the effectiveness of this process may be constrained by high lending rates, information asymmetry, non-performing loans, weak institutional frameworks and the misallocation of credit. Consequently, an increase in financial intermediation does not necessarily translate into higher economic growth unless mobilised funds are efficiently allocated and productively utilised. The theory therefore supports investigating the growth effects of financial intermediation in Nigeria and examining whether those effects vary with the level of financial deepening.

Financial Development Theory

Financial Development Theory explains how the evolution and improvement of financial institutions, markets and instruments contribute to economic development by facilitating savings mobilisation, capital formation and the efficient allocation of financial resources. The theory is associated with the contributions of Goldsmith (1969), McKinnon (1973) and Shaw (1973), who emphasised the relationship between financial system development and economic performance. It posits that a well-developed financial system reduces transaction and information costs, improves access to credit, facilitates risk diversification and channels funds towards productive investment opportunities. Financial development can therefore stimulate economic growth by increasing investment, enhancing productivity and supporting technological advancement. However, the benefits depend on the efficiency of financial institutions, the quality of regulation and the extent to which financial resources are allocated to productive activities rather than speculative or unproductive uses.

The theory is relevant to the present study because it provides a foundation for examining the contribution of financial intermediation to economic growth in Nigeria. An efficient financial system can promote growth by enabling deposit money banks to mobilise savings and extend credit to businesses and other productive sectors, thereby supporting capital accumulation and output expansion. Nevertheless, the relationship may vary with the depth and efficiency of financial development, as weak institutions, high lending costs, credit misallocation and macroeconomic instability can limit the productive impact of financial intermediation. Financial Development Theory therefore supports investigating whether financial intermediation significantly influences economic growth in Nigeria and whether its effects change at different levels of financial development.

Institutional Theory

Institutional Theory explains how formal institutions, including laws, regulations and regulatory agencies, and informal institutions, such as social norms and established practices, shape economic behaviour and organisational performance. The theory is associated with the foundational works of North (1990), who

conceptualised institutions as the rules of the game that structure human interaction and reduce uncertainty in economic transactions. Effective institutions promote economic development by protecting property rights, enforcing contracts, ensuring regulatory compliance and creating a predictable environment for investment. In the financial system, institutional quality influences the operations of financial intermediaries, the allocation of credit, investor confidence and the stability of financial markets. Conversely, weak regulatory enforcement, corruption, policy inconsistency and inadequate legal protection can increase transaction costs, discourage investment and undermine the efficiency of financial intermediation.

The theory is relevant to the present study because the contribution of financial intermediation to economic growth in Nigeria may depend on the quality of the country's institutional and regulatory environment. Effective institutions can strengthen banking supervision, improve contract enforcement, reduce lending risks and encourage financial institutions to channel mobilised savings towards productive investments. Conversely, institutional weaknesses may result in inefficient credit allocation, limited access to finance and reduced investment productivity, thereby constraining economic growth despite an expansion in financial resources. Institutional Theory therefore provides a basis for examining how institutional conditions influence the relationship between financial intermediation and economic growth, including whether the growth-enhancing effects of financial deepening differ across institutional environments.

Law and Finance Theory

Law and Finance Theory, developed prominently by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998), explains how a country's legal system and the protection it provides to investors influence financial development and economic performance. The theory argues that the effectiveness of financial markets and institutions depends partly on the legal protection of shareholders and creditors, the enforcement of contracts, and the quality of regulatory institutions. Strong legal protection reduces the risks of expropriation, strengthens investor confidence and encourages the mobilisation of savings and the provision of credit. Conversely, weak legal enforcement, inadequate creditor protection and institutional deficiencies can increase lending risks, discourage investment and constrain financial intermediation. The theory therefore emphasises that the development of financial systems depends not only on the availability of financial resources but also on the legal and institutional framework governing financial transactions.

The theory is relevant to the present study because the effectiveness of financial intermediation in promoting economic growth in Nigeria may depend on the strength of legal institutions, contract enforcement and financial regulation. Where lenders cannot adequately enforce loan agreements or recover defaulted credit, banks may adopt restrictive lending practices, increase lending costs or limit financing to productive enterprises. Conversely, effective legal enforcement and sound financial regulation can improve credit allocation, strengthen confidence in financial institutions and facilitate investment and economic growth. Law and Finance Theory consequently provides a basis for understanding how institutional and legal conditions may influence the relationship between financial intermediation and economic growth, including the possibility that the growth effects of financial deepening vary with the quality of the institutional environment.

Endogenous Growth Theory

Endogenous Growth Theory, developed principally by Romer (1986, 1990) and Lucas (1988), explains long-run economic growth as a consequence of factors generated within the economic system, particularly capital accumulation, technological innovation, human capital development and knowledge creation. Unlike traditional neoclassical growth theory, which treats technological progress as exogenous, endogenous growth theory emphasises that investment in knowledge, research and development, skills and productive capacity can generate sustained improvements in productivity. Financial intermediation contributes to this process by mobilising savings, allocating funds to productive investments, facilitating technological adoption and supporting entrepreneurship. By directing financial resources towards innovative enterprises and productive sectors, financial institutions can enhance capital accumulation, stimulate productivity and promote sustained economic growth.

The theory is relevant to the present study because it provides a foundation for explaining how financial intermediation can influence economic growth in Nigeria. Efficient mobilisation of deposits and allocation of credit to productive activities can support investment in infrastructure, technology, human capital and business expansion, thereby increasing output and productivity. However, the growth-enhancing effect of financial intermediation depends on the quality of credit allocation, institutional effectiveness and the macroeconomic environment. Where lending is constrained, financial resources are misallocated or borrowing costs are excessive, the contribution of finance to productive investment may be limited. Endogenous Growth Theory therefore supports the argument that financial intermediation can serve as an important driver of economic growth, while providing a basis for examining whether its contribution varies with the level and efficiency of financial development.

Information Asymmetry Theory

Information Asymmetry Theory, associated particularly with Akerlof (1970), explains how unequal access to information between transacting parties can influence economic decisions and market outcomes. In financial markets, borrowers generally possess more information about their financial conditions, investment opportunities and repayment capacity than lenders. This information imbalance creates adverse selection before lending and moral hazard after credit has been granted, potentially resulting in inefficient credit allocation, higher lending rates and credit rationing. Stiglitz and Weiss (1981) demonstrated that information asymmetry can cause banks to restrict lending even when borrowers are willing to pay higher interest rates, thereby constraining investment and economic activity. Financial intermediaries help mitigate these problems through credit assessment, borrower screening, monitoring and information production, although the effectiveness of these mechanisms depends on institutional capacity and the availability of reliable financial information.

The theory is relevant to the present study because information asymmetry can influence the effectiveness of financial intermediation and its contribution to economic growth in Nigeria. Where banks lack reliable information about borrowers or face difficulties enforcing loan contracts, they may limit credit to productive businesses, charge higher interest rates or concentrate lending among established borrowers. These constraints can reduce investment, capital formation and output growth, weakening the growth-enhancing effects of financial deepening. Conversely, improvements in credit information systems, digital banking infrastructure, regulatory supervision and corporate disclosure can reduce information gaps and improve credit allocation. Therefore, Information Asymmetry Theory provides a useful explanation for why the volume of financial intermediation may not automatically translate into economic growth and why its effectiveness may vary with institutional and financial conditions.

Financial deepening Hypothesis

The Financial Deepening Hypothesis, principally associated with McKinnon (1973) and Shaw (1973), explains how the expansion and improved efficiency of financial institutions and markets can promote economic growth. The hypothesis argues that financial liberalisation, appropriate interest rate policies and the reduction of financial repression encourage savings mobilisation, enhance financial intermediation and increase the availability of funds for productive investment. McKinnon's (1973) complementarity hypothesis emphasises the relationship between monetary accumulation and physical capital formation, while Shaw's (1973) debt intermediation hypothesis highlights the role of financial intermediaries in mobilising savings and channelling funds to productive sectors. Subsequent studies, including King and Levine (1993) and Levine, Loayza, and Beck (2000), provide empirical support for the argument that financial development can stimulate economic growth through capital accumulation, improved resource allocation and increased productivity.

The hypothesis is relevant to the present study because it provides a theoretical foundation for examining the relationship between financial intermediation and economic growth in Nigeria. It suggests that increased private-sector credit, deposit mobilisation and other indicators of financial deepening can stimulate economic activities by relaxing financing constraints and supporting capital formation. However, the growth-enhancing effects of financial deepening depend on the efficiency of credit allocation, institutional quality, macroeconomic stability and the productive use of borrowed funds. Excessive credit expansion or lending to unproductive activities may weaken these benefits. Consequently, the hypothesis supports investigating whether financial intermediation promotes economic growth in Nigeria and whether its effect varies across different levels of financial deepening.

Theoretical Synthesis

The study, Financial Inclusion and Capital Market Deepening in Nigeria: The Moderating Role of Institutional Quality is anchored in the complementary insights of the Financial Deepening Hypothesis, Information Asymmetry Theory, Endogenous Growth Theory, Law and Finance Theory, Institutional Theory, Financial Development Theory and Financial Intermediation Theory. The Financial Deepening Hypothesis, associated with McKinnon (1973) and Shaw (1973), provides the foundation for explaining how expanding access to financial services can mobilise savings, improve resource allocation and strengthen financial system development. Financial Intermediation Theory, particularly Gurley and Shaw (1960) and Diamond (1984), explains how financial institutions mobilise deposits and channel funds to productive investment, while Information Asymmetry Theory (Akerlof, 1970; Stiglitz & Weiss, 1981) highlights how information gaps, credit rationing and inadequate borrower assessment may constrain access to finance. Endogenous Growth Theory (Romer, 1986; Lucas, 1988) further explains how improved financial access can support capital accumulation, entrepreneurship and productivity. Applied to Nigeria, these perspectives suggest that financial inclusion can contribute to capital market deepening by broadening participation in formal financial services, encouraging savings mobilisation, improving access to investment opportunities and strengthening the pool of resources available for capital market activities. Nevertheless, the relationship is not automatic because financial inclusion

must translate into effective savings mobilisation, investment participation and productive financial activity to generate meaningful capital market development.

The moderating role of institutional quality is explained principally by Institutional Theory (North, 1990) and Law and Finance Theory (La Porta et al., 1997, 1998). These perspectives emphasise that the effectiveness of financial systems depends on the quality of governance, regulatory enforcement, and protection of investor rights, contract enforcement and institutional accountability. In Nigeria, effective institutions may strengthen the relationship between financial inclusion and capital market deepening by improving investor confidence, protecting financial consumers, reducing transaction risks and ensuring that expanded access to financial services translates into greater participation in capital market instruments. Conversely, weak regulatory enforcement, corruption, policy uncertainty and inadequate investor protection may undermine this relationship, even where access to financial services improves. Financial Development Theory provides the broader framework linking the expansion and efficiency of financial institutions and markets to financial system development. Taken together, these theories imply that institutional quality may condition the extent to which financial inclusion promotes capital market deepening. Accordingly, the study's moderating proposition is that the effect of financial inclusion on capital market deepening depends on the prevailing quality of institutions in Nigeria, an empirical relationship that can be tested through the interaction between financial inclusion and institutional quality.

Theoretical Framework

This study is anchored on the Mckinnon-Shaw (1973) financial deepening hypothesis and institutional theory (North, 1990). The Mckinnon-Shaw hypothesis posits that financial inclusion (access to formal financial services) mobilises savings and channels them into productive investments, thereby deepening the capital market. Institutional theory extends this by qrguing that the efficiency of financial intermediation is conditional on institutional quality as strong institutions reduce information asymmetry, enforce contracts, and protect investors, thus amplifying the effects of inclusion on capital deepening. Therefore, capital market deepening is modelled as a function of financial inclusion, with institutional quality as a conditioning variable

Empirical Perspectives

Ofosu-Mensah Ababio et al. (2023) examined the relationship between financial inclusion and financial system development using panel data from 35 emerging and frontier markets covering 2004–2022. Employing an improved GMM estimation technique, the study found that financial inclusion positively and significantly influenced financial depth and access across banking, debt, and stock markets, but negatively affected financial efficiency. The findings highlight the importance of expanding financial access while addressing efficiency constraints.

Wanjala and Gogo (2020) examined the effect of financial deepening on economic growth in the East African Community using a fixed-effects regression model. The findings revealed that broad money, credit to the private sector, and the volume of traded stocks had positive and statistically significant effects on economic growth, with coefficients of 0.4410, 0.4022, and 0.1367, respectively. The study recommended policies to improve credit accessibility, financial resource allocation, and stock market participation.

Attah-Botchwey et al. (2022) investigated the effect of financial deepening on stock market performance in four selected Sub-Saharan African countries using data from 2001 to 2019. Employing multiple regression and Seemingly Unrelated Regression (SUR), the study found that broad money supply had a positive and statistically significant effect on stock market performance across all four countries. The authors recommended policies to increase financial deepening and promote investment in productive sectors.

Alenoghena (2014) examined the relationship between capital market development, financial deepening, and economic growth in Nigeria using time-series data from 1981 to 2012. Employing the Augmented Dickey-Fuller test and an error correction model, the study found that stock market capitalisation, narrow money, credit to the private sector, and interest rates significantly influenced economic growth. However, financial development and the monetisation ratio were statistically insignificant. The study recommended improving financial market liquidity and stock market activities.

Aduda et al. (2014) examined the effect of capital market deepening on economic growth in Kenya using data from the Nairobi Securities Exchange and national GDP statistics covering 1992–2011. The study incorporated bond market turnover to assess capital market development and found that capital market deepening positively influenced economic growth, supporting the finance-growth nexus. The authors recommended policies to strengthen capital market development, particularly the bond market.

Victoria and Alege (2021) examined the relationship between financial deepening and stock market development in Nigeria using annual time-series data from 1981 to 2020. Employing time-series econometric techniques and the Augmented Dickey-Fuller unit root test, the study found that financial deepening positively influenced stock market development in the long run but had no significant short-run effect. The authors

recommended improving financial deepening to enhance private-sector credit availability and reduce borrowing costs for stock market investment.

Zeqiraj et al. (2022) investigated the effect of institutional quality on financial inclusion across 73 developing countries using dynamic panel data estimation techniques to address heterogeneity, cross-sectional dependence, and endogeneity. The findings revealed that institutional quality—including control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability, promotes access to and use of formal financial services. Economic growth, human development, domestic credit, financial development, and remittances also significantly contributed to financial inclusion. The study highlights the importance of strong institutions in promoting inclusive financial development.

Algaeed (2021) examined the effect of capital market development on per-capita GDP growth in Saudi Arabia over the period 1985–2018 using the ARDL approach, FMOLS, Johansen cointegration tests, and Granger causality analysis. The study employed share price index, market capitalisation, market liquidity, number of share transactions, and number of shares traded as capital market indicators. The findings revealed that market capitalisation and liquidity had negative coefficients, contrary to conventional expectations, while the share price index, number of shares traded, and share transactions exhibited the expected positive signs. The Granger causality results also indicated that the share price index, market capitalisation, and number of shares traded did not Granger-cause per-capita GDP growth. The study recommended that the Capital Market Authority develop a roadmap for accelerating capital market deepening to strengthen its contribution to economic growth.

Azimi (2022) examined the effect of financial inclusion on economic growth across global panels classified by income and geographical regions over the period 2002–2020. The study constructed a composite financial inclusion index based on financial service penetration, availability, and usage, and employed heterogeneous panel data models, panel cointegration tests, System-GMM estimation, and causality analysis. The findings established a long-run relationship between financial inclusion, economic growth, and the control variables across the full sample, income groups, and regional panels. System-GMM estimates further revealed that financial inclusion had a significantly positive effect on economic growth across all panels, while causality tests indicated bidirectional causality between financial inclusion and economic growth. These findings underscore the contribution of financial inclusion to economic growth and the potential for reinforcing interactions between financial access and economic performance.

Otinga et al. (2025) examined the effect of financial inclusion (FI) and financial openness (FO) on capital market development (CMD) across 34 African countries from 2004 to 2021 using the panel ARDL-PMG approach. The findings revealed that FI and FO individually enhanced CMD in the long run, while their interaction further strengthened capital market development, particularly in economies with lower financial inclusion.

Gizaw et al. (2024) examined the relationship between financial development and economic growth in emerging economies using panel data and dynamic GMM. The findings revealed that domestic private credit and stock market capitalisation positively influenced economic growth, while inflation exerted a negative effect. The study concluded that deeper financial intermediation and capital markets promote economic growth.

Momoh et al. (2026) examined the effect of financial inclusion on capital market development in Nigeria using quarterly data from 2000Q1 to 2024Q4 and the FMOLS technique. The findings revealed that the number of microfinance banks, rural deposits, rural credit and interest rates had significant positive relationships with market capitalisation. The study recommended policies to mobilise rural savings, expand credit access and strengthen financial inclusion.

Chaurasiya and Singh (2026) examined the effects of financial inclusion (FI), institutional quality (IQ), and their interaction on stock market development in BRICS countries from 2012 to 2020, using random-effects regression with Driscoll–Kraay standard errors and 2SLS-IV estimation. The findings showed that institutional quality positively influenced stock market development, whereas financial inclusion had an insignificant effect. Their interaction also negatively affected stock market development, suggesting that the effects of financial inclusion depend on institutional conditions.

Empirical Synthesis

The reviewed studies provide substantial evidence that financial inclusion and financial deepening contribute to financial system and capital market development, although their effects vary across countries, indicators, and time horizons. Ofosu-Mensah Ababio et al. (2023) found that financial inclusion significantly improved financial depth and access across banking, debt, and stock markets in emerging and frontier economies, although it reduced financial efficiency. Similarly, Otinga et al. (2025) established that financial inclusion and financial openness enhanced capital market development in the long run, with their interaction producing additional benefits. In Nigeria, Momoh et al. (2026) found that microfinance bank development, rural deposits, and rural credit positively influenced market capitalisation, while Victoria and Alege (2021) reported a

positive long-run relationship between financial deepening and stock market development. These findings suggest that financial inclusion can deepen capital markets by mobilising savings, expanding credit access, and broadening participation in formal financial services.

Evidence from other studies reinforces the contribution of financial deepening and capital market development to economic performance. Wanjala and Gogo (2020), Attah-Botchwey et al. (2022), and Aduda et al. (2014) found that financial deepening and capital market development supported economic growth or stock market performance in East Africa and selected Sub-Saharan African countries. Similarly, Alenoghena (2014) and Gizaw et al. (2024) established that selected indicators of financial and capital market development influenced economic growth, although Algaeed (2021) reported mixed effects of capital market indicators on growth in Saudi Arabia. Azimi (2022) also found that financial inclusion positively influenced economic growth across different income and regional groups. Collectively, these studies establish the broader economic relevance of financial inclusion and financial deepening. However, because most focus on economic growth or the direct effects of financial inclusion and financial deepening, they provide limited evidence on the institutional conditions under which financial inclusion translates into capital market deepening.

The institutional dimension is particularly relevant to the present study. Zeqiraj et al. (2022) demonstrated that institutional quality promotes financial inclusion by improving the institutional conditions that support access to and use of formal financial services. More directly, Chaurasiya and Singh (2026) found that institutional quality positively influenced stock market development in BRICS countries, whereas financial inclusion had an insignificant effect and its interaction with institutional quality negatively affected stock market development. This contrasts with Otinga et al. (2025), whose findings indicated that the interaction between financial inclusion and financial openness enhanced capital market development. These differences suggest that the consequences of expanding financial access may depend on the institutional and financial environment, rather than being uniformly positive across countries.

Despite these contributions, an important empirical gap remains. While existing studies have investigated the direct effects of financial inclusion and financial deepening on capital market development, and some have examined institutional quality as a determinant of financial inclusion or a moderator of the financial inclusion–stock market development relationship, limited country-specific evidence establishes how institutional quality conditions the relationship between financial inclusion and capital market deepening in Nigeria. The present study addresses this gap by incorporating institutional quality and its interaction with financial inclusion into the analysis of capital market deepening. This approach moves beyond estimating the independent effects of financial inclusion and institutional quality to determine whether stronger institutions reinforce or constrain the extent to which financial inclusion translates into capital market deepening in Nigeria.

METHODOLOGY

This study adopts the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration proposed by Pesaran et al. (2001) to investigate the effect of exchange rate fluctuations on foreign investment, with institutional quality serving as the moderating variable. The ARDL technique has several advantages over conventional cointegration methods, such as Engle and Granger (1987), Johansen (1988), and Johansen and Juselius (1990). First, the ARDL approach is applicable irrespective of whether the underlying variables are integrated of order zero, I(0), or order one, I(1), thereby removing the necessity for prior unit root testing. This reduces the likelihood of erroneous integration order classification and improves the robustness of the estimation. Second, the bounds testing procedure is particularly appropriate for studies with relatively small sample sizes, in contrast to the Johansen approach, which generally requires large samples for reliable inference. Third, the ARDL framework allows each variable to have a distinct optimal lag structure, offering greater flexibility than traditional cointegration techniques. As noted by Öztürk and Acaravci (2010), while conventional cointegration methods estimate long-run relationships within a multivariate system, the ARDL approach relies on a single-equation framework. It combines ordinary least squares (OLS) estimation with an unrestricted error correction model (UECM) to assess the presence of a long-run equilibrium relationship among the variables. Cointegration is established by testing the joint significance of the lagged level variables within the bounds testing framework. Data for all variables employed in the study were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2025), the World Development Indicators (WDI, 2025), World Governance Indicator (2025) including EFInA (2025)

Model Specification

Following Beck et al. (2000) and Law et al. (2018) on conditional finance-growth models, the baseline long-run relationship is specified as:

Baseline Linear Model:

$$CMD_t = \alpha_0 + \beta_1 FIN_{-ct} + \beta_2 IQ_{-ct} + \beta_3 FINC * IQ_{-ct} + \beta_4 INFL_t + \beta_5 MPR_t + \beta_6 RGDPGR_t + \beta_7 DUforex_t + \varepsilon_t \quad (1)$$

where:

CMD= Capital Market Deepening Index (PCA of Market Capitalisation as a percentage of GDP, Total stock value traded as a percentage of GDP and Turnover ratio)

FINC_c = mean centering of Financial inclusion index (PCA composite of access, usage and penetration)

IQ_c = mean centering of Institutional Quality

FINC*IQ_c = mean centering of the interaction between financial inclusion and institutional quality

INFL= Inflation rate (%)

MPR = Monetary Policy rate (%)

RGDPGR= Real GDP growth rate

DUforex = Forex reform dummy

Due to possible severe multicollinearity that can induce by the interaction term, financial inclusion, institutional quality and their interaction is estimated in mean-centred form (Aiken & West, 1991).

RESULTS

Table 1: Descriptive Statistics of the Variables

	CMD	FINC_c	IQ_c	FINCIQ_c	INFL	MPR	RGDPGR	Duforex
Mean	-0.6963	-0.0572	-0.0002	-0.0061	15.6365	14.0635	3.4000	0.6032
Median	-0.9700	-1.0159	-0.0013	0.0023	13.6000	13.0000	3.2000	1.0000
Maximum	1.3500	3.6841	0.0478	0.0721	33.8000	27.5000	8.1000	1.0000
Minimum	-1.9200	-3.4159	-0.0393	-0.1631	8.0000	6.2500	-6.1000	0.0000
Std. Dev.	0.9634	2.3247	0.0264	0.0610	7.0232	5.1866	2.9423	0.4932
Skewness	0.7607	0.3270	0.3383	-1.0755	1.2080	1.3454	-0.6902	-0.4218
Kurtosis	2.4065	1.6980	2.2327	3.5456	3.6177	4.5999	3.6723	1.1779
Jarque-Bera	7.0013	5.5730	2.7475	12.9269	16.3250	25.7263	6.1888	10.5831
Probability	0.0302	0.0616	0.2532	0.0016	0.0003	0.0000	0.0453	0.0050
Sum	-43.8700	-3.6041	-0.0128	-0.3857	985.1000	886.0000	214.2000	38.0000
Sum Sq. Dev.	57.5475	335.0688	0.0432	0.2307	3058.1660	1667.8710	536.7400	15.0794
Observations	63	63	63	63	63	63	63	63

Source: Authors' Calculation (2026)

Table 1 presents the descriptive statistics of the variables used to examine the relationship between financial inclusion and capital market deepening in Nigeria, with institutional quality as a moderating variable. The analysis is based on 63 observations. Capital market deepening (CMD) has a mean of −0.6963 and a standard deviation of 0.9634, with values ranging from −1.9200 to 1.3500. The negative mean reflects the scale and transformation of the CMD variable and should not, by itself, be interpreted as evidence of declining capital market development. Financial inclusion (FINC_c), measured in mean-centred form, has a mean of −0.0572 and a standard deviation of 2.3247, with a minimum of −3.4159 and a maximum of 3.6841. Institutional quality (IQ_c) has a mean close to zero (−0.0002), consistent with mean centring, and a standard deviation of 0.0264. The interaction term (FINCIQ_c) has a mean of −0.0061 and a standard deviation of 0.0610, indicating variation in the combined effect of financial inclusion and institutional quality. Inflation (INFL) records a mean of 15.6365% and a standard deviation of 7.0232, while the monetary policy rate (MPR) averages 14.0635%, with a standard deviation of 5.1866. Real GDP growth (RGDPGR) has a mean of 3.4000% and a standard deviation of 2.9423, ranging from −6.1000% to 8.1000%, suggesting considerable variation in Nigeria's growth performance during the period. The foreign exchange policy dummy (DUFOREX) has a mean of 0.6032, indicating that approximately 60.32% of the observations are coded as one, subject to the study's dummy-variable definition.

The distributional characteristics provide additional insights into the variables. CMD, FINC_c, IQ_c, INFL and MPR are positively skewed, indicating longer right tails, whereas FINCIQ_c and RGDPGR are negatively skewed, suggesting longer left tails. DUFOREX also exhibits negative skewness, which is typical of a binary variable when the proportion of observations coded zero is relatively small. The kurtosis statistics indicate that FINCIQ_c, INFL, MPR and RGDPGR are more peaked or have heavier tails than a normal distribution, while CMD, FINC_c and IQ_c have kurtosis below three, indicating relatively flatter distributions. The Jarque–Bera test rejects normality at the 5% significance level for CMD ($p=0.0302$), FINCIQ_c ($p=0.0016$), INFL ($p=0.0003$), MPR ($p<0.001$), RGDPGR ($p=0.0453$) and DUFOREX ($p=0.0050$). Normality is not rejected for IQ_c ($p=0.2532$) or FINC_c ($p=0.0616$) at the 5% level. The rejection for DUFOREX should be interpreted cautiously because a binary variable is not expected to follow a

continuous normal distribution. Overall, the descriptive statistics reveal substantial variation in the macroeconomic variables and provide a preliminary understanding of their distributions. However, these results alone do not establish causal relationships or determine whether financial inclusion significantly deepens the Nigerian capital market; these questions require further econometric analysis.

Table 2: Correlation Matrix of the variables							
	FINC_c	**IQ_c**	**FINCIQ_c**	**INFL**	**MPR**	**RGDPGR**	**Duforex**
FINC_c	1.0000						
IQ_c	-0.1015	1.0000					
FINCIQ_c	-0.0397	-0.2438	1.0000				
INFL	0.7761	-0.1777	-0.2371	1.0000			
MPR	0.7181	-0.2708	0.0964	0.8219	1.0000		
RGDPGR	-0.3597	-0.0105	-0.3293	-0.1908	-0.1884	1.0000	
Duforex	0.7512	0.0585	0.0648	0.6092	0.5271	-0.6425	1.0000
Source: Authors' Calculation (2026)							

Table 2 presents the correlation matrix used to assess the potential presence of multicollinearity among the explanatory variables in the model examining financial inclusion and capital market deepening in Nigeria, with institutional quality as a moderating variable. The results indicate that the strongest positive correlation among the explanatory variables is between inflation (INFL) and the monetary policy rate (MPR), with a coefficient of 0.8219. This exceeds the commonly applied threshold of 0.80, suggesting a potential multicollinearity concern between the two macroeconomic variables. Financial inclusion (FINC_c) also exhibits relatively strong positive correlations with inflation (0.7761), the foreign exchange policy dummy (DUFOREX) (0.7512) and the monetary policy rate (0.7181). These coefficients indicate substantial associations that warrant further investigation, although they do not independently establish the presence of serious multicollinearity. The correlation between inflation and DUFOREX (0.6092) is moderate, while the correlation between MPR and DUFOREX (0.5271) is also below the conventional 0.80 threshold.

In contrast, institutional quality (IQ_c) and the interaction term (FINCIQ_c) exhibit relatively weak correlations with most of the other explanatory variables. Their correlation is −0.2438, while the correlation between FINC_c and FINCIQ_c is −0.0397. These low coefficients suggest that the interaction term does not exhibit a strong pairwise linear association with the constituent variables in the reported matrix. This pattern may partly reflect the use of mean-centred variables in constructing the interaction term. Nevertheless, the correlations among FINC_c, INFL, MPR and DUFOREX indicate that multicollinearity cannot be ruled out solely on the basis of this matrix. Accordingly, the variance inflation factor (VIF) should be examined to determine whether the observed associations translate into problematic inflation of the variances of the estimated coefficients. Overall, the correlation matrix provides evidence of potentially strong associations among selected explanatory variables, particularly INFL and MPR, but does not establish that the model suffers from severe multicollinearity. The final assessment should therefore be based on the VIF results alongside the correlation coefficients.

Table 3: Variance Inflation factors				
	Coefficient	**Uncentered**	**Centered**	
Variable	**Variance**	**VIF**	**VIF**	
FINC_c	0.000418	3.870027	3.867647	
IQ_c	1.063874	1.270405	1.270329	
FINCIQ_c	0.305225	1.965099	1.945191	
INFL	7.36E-05	37.54351	6.219056	
MPR	0.0001	39.08555	4.614176	
RGDPGR	0.000146	5.097182	2.162702	
Duforex	0.009708	10.19224	4.044538	
C	0.01622	28.23255	NA	
Source: Authors' Calculation (2026)				

Table 3 presents the variance inflation factor (VIF) results for further assessment of multicollinearity among the explanatory variables in the model examining financial inclusion and capital market deepening in Nigeria, with institutional quality as a moderating variable. The centred VIF values indicate that financial inclusion (FINC_c), institutional quality (IQ_c) and their interaction term (FINCIQ_c) have VIF values of 3.8676, 1.2703 and 1.9452, respectively. These values are below the commonly applied threshold of 5,

suggesting that these variables do not exhibit serious multicollinearity. Similarly, the VIF values for inflation (INFL), the monetary policy rate (MPR), real GDP growth (RGDPGR) and the foreign exchange policy dummy (DUFOREX) are 6.2191, 4.6142, 2.1627 and 4.0445, respectively. Although the centred VIF for inflation exceeds the conservative threshold of 5, it remains below the more permissive threshold of 10. This indicates a moderate multicollinearity concern involving inflation, consistent with its relatively high correlation with the monetary policy rate (0.8219) reported in Table 2. However, the VIF for MPR remains below 5, suggesting that the concern is more pronounced for inflation than for the other explanatory variables.

The uncentred VIF values for inflation (37.5435) and the monetary policy rate (39.0856) are considerably higher than their centred counterparts. Since uncentred VIFs can be inflated by the absence of centring on the mean and by the inclusion of the constant term, the centred VIFs are more appropriate for assessing multicollinearity among the explanatory variables in this specification. Overall, the results do not indicate pervasive or severe multicollinearity, although the centred VIF for inflation warrants attention. The relatively low VIF of 1.9452 for the interaction term also suggests that the mean-centred interaction specification has not introduced substantial multicollinearity. Therefore, the model may be retained, subject to appropriate diagnostic checks and careful interpretation of the coefficients. Inflation should not be removed solely because its VIF exceeds 5; any modification should be justified theoretically and, where appropriate, assessed through robustness analysis.

Table 4
Unit Root Test for Stationarity (Augmented Dickey-Fuller)

Variables	**Level**	**First Differences**	**Integration order**
	Intercept and Trend	**Intercept and Trend**	
CMD	-1.377041	-3.885862**	I (1)
INFL	-1.828451	-6.963902***	I (1)
IQ_c	-2.482911	-7.752967***	I (1)
MPR	-1.355513	-5.130244***	I (1)
RGDPGR	-2.268112	-7.751283***	I (1)
FINC_c	-3.232236*	-	I (0)
FINC*IQ_c	-2.878861	-7.614625***	I (1)
DUFOREX	-1.738475	-7.764295***	I (1)

Unit Root Test for Stationarity (Phillips- Perron)

Variables	**Level**	**First Differences**	**Integration order**
	Intercept and Trend	**Intercept and Trend**	
CMD	-0.944646	-3.885482**	I (1)
INFL	-1.973273	-6.963902***	I (1)
IQ_c	-2.514440	-7.752927***	I (1)
MPR	-0.949097	-5.120516***	I (1)
RGDPGR	-2.363338	-8.224229***	I (1)
FINC_c	-3.182628*	-	I (0)
FINC*IQ_c	-2.894757	-7.614625***	I (1)
DUFOREX	-1.775301	-7.764271***	I (1)

Note: ***, **, and * are 1%, 5% and 10% level of significance respectively
Source: Authors' Computation (2026)

Table 4 presents the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) unit root test results for examining the stationarity properties of the variables used in the study on financial inclusion and capital market deepening in Nigeria. The results from both tests are broadly consistent. At level, financial inclusion (FINC_c) is stationary at the 10% significance level, with ADF and PP statistics of −3.2322 and −3.1826, respectively. This suggests that FINC_c is integrated of order zero, I(0), meaning that it fluctuates around a stable statistical process under the specified deterministic components. In contrast, capital market deepening (CMD), institutional quality (IQ_c), inflation (INFL), the monetary policy rate (MPR), real GDP growth (RGDPGR), the interaction term (FINC × IQ_c) and the foreign exchange policy dummy (DUFOREX) are non-stationary at level based on the reported results. However, their first-differenced series are stationary at conventional significance levels, with most ADF and PP statistics significant at 1%, while CMD is significant at 5%. These findings indicate that the variables are predominantly integrated of order one, I(1), alongside FINC_c, which is I(0).

The combined evidence from the ADF and PP tests establishes a mixture of I(0) and I(1) variables, with no reported evidence of an I(2) variable. This integration pattern has important implications for the

econometric approach adopted in the study. Specifically, the mixture of I(0) and I(1) variables is compatible with the Autoregressive Distributed Lag (ARDL) bounds-testing approach, provided its other assumptions are satisfied.

Table 5: Bound Test for Cointegration (Dependent Variable: CMD)

T-Statistic	Value	K
F-statistic	2.130913	7

Level of Significance	Lower (Bound I (0)	Upper Bound I (1)
10%	1.95	3.06
5%	2.22	3.39
2.50%	2.48	3.7
1%	2.79	4.1

K is the number of exogenous variables in the model
Source: Authors' Compilation (2026)

In estimating the long-run relationship, a two-step method is used: an initial analysis of the nature of a long-run relationship between the variables in Equation (2), which is accompanied by an approximation of the short-run and long-run parameters. Therefore, the bounds test method was used to determine the existence of a long-term relationship between the variables of interest by conducting an F-test for the coefficients of the lagged-level variables of the model. Also, Pesaran and Shin (1995, 1998) suggested two critical values to evaluate the relationship (lower and upper bound) due to the limitations of the traditional Wald-test F-statistic. The computed F-test is then compared with the critical values for the hypothesis test. Therefore, if the calculated F-statistic is less than the lower bound value, the null is not rejected. On the contrary, the existence of a long-term relationship between the variables is suggested if the calculated F-statistics exceed the upper limit value. Finally, there is an inconclusive long run relation between the variables if the calculated F-statistics are between the lower bound and the upper bound. However, the EC word would be a useful way to establish co-integration in the inconclusive cases after Kremers et al. (1992) and Bannerjee et al. (1998). As can be seen from the Table 5, the measured F-statistic (2.130913) falls below the lower limit (2.22) and the upper limit (3.39) at a value point of 5%. In essence, there exists no long-run relationship between the variables. As such, it is only the short-run dynamics that are estimated.

Table 5: Long and short run Dynamics of estimated results for the selected ARDL (Selected Model: ARDL ((2, 1, 0, 1, 0, 0, 2, and 0)

Panel A: Long-Run Dynamics: CMD				
Variables	Coefficient	Std. Error	T-stat.	P-value
FINC_c	-4.062166	53.148548	-0.076430	0.9394
IQ_c	-109.062422	1376.57313	-0.079227	0.9372
FINCIQ_c	-141.478554	1731.03824	-0.081730	0.9352
INFL	1.635781	19.656456	0.083219	0.9340
MPR	-0.160077	2.628907	-0.060891	0.9517
RGDPGR	2.398721	30.223642	-0.079366	0.9371
DUforex	0.260956	9.581085	0.027237	0.9784
C	-18.695882	203.574241	-0.091838	0.9272
Panel B: Short-Run Dynamics				
D(CMD(-1))	0.268944	0.148287	1.813679	0.0761
D(FINC_c)	0.404396	0.142186	2.844143	0.0066
D(IQ_c)	-0.580192	0.556617	-1.042354	0.3026
D(FINCIQ_c)	-0.282858	0.321046	-0.881052	0.3828
D(INFL)	0.008702	0.003633	2.394965	0.0207
D(MPR)	-0.000852	0.004893	-0.174027	0.8626
D(RGDPGR)	0.005218	0.006883	0.758158	0.4521
D(RGDPGR(-1))	0.010251	0.006625	1.547244	0.1285
D(DUforex)	0.001388	0.045111	0.030774	0.9756
CointEq(-1)	-0.005320	0.064175	-0.082896	0.9343

Cointeq = CMD - (-4.0622*FINC_C -109.0624*IQ_C -141.4786
*FINCIQ_C + 1.6358*INFL -0.1601*MPR -2.3987*RGDPGR + 0.2610

*DUFOREX -18.6959)				
Panel C: Goodness-of-fit measures				
R -Squared	0.896666			
Adj. R-Squared	0.865744			
F- statistics	1080.934			
P-value (F-stat.)	0.0000			
Durbin-Watson Statistics	2.031374			
Panel D: Diagnostic Tests				
			Test	Probability
Breusch-Godfrey Serial Correlation LM Test:			0.190867	0.9090
Heteroskedasticity Test: Breusch-Pagan-Godfrey			9.988618	0.6949
Heteroskedasticity Test: ARCH			1.493544	0.2217
Ramsey RESET Specification Test			0.850897	0.3611
Jarque-Bera Statistics			1.718624	0.423453

Note: ***, **, and * are 1%, 5% and 10% level of significance respectively
Source: Authors' Computation (2026)

Table 5 presents the estimated coefficients of the short-run relationship along with the diagnostic tests of the model. The results reveal that financial inclusion has a positive and statistically significant short-run relationship with capital market deepening. The coefficient of D (FINC_c) is 0.404396, with a t-statistic of 2.844143 and a p-value of 0.0066. Since the p-value is below 0.01, the effect is statistically significant at the 1% level. This suggests that an increase in financial inclusion is associated with an increase in capital market deepening in the short run, holding the other variables constant. The finding suggests that expanding access to and use of formal financial services may support savings mobilisation and participation in capital market activities. However, the result establishes a statistical association rather than causality.

Institutional quality, measured by D(IQ_c), has a negative coefficient of −0.580192, with a t-statistic of −1.042354 and a p-value of 0.3026. The coefficient is not statistically significant at the 10%, 5%, or 1% level. Thus, the results do not provide sufficient evidence that short-run changes in institutional quality independently influence capital market deepening in the estimated model.

Similarly, the interaction term between financial inclusion and institutional quality, D(FINCIQ_c), has a negative coefficient of −0.282858, with a t-statistic of −0.881052 and a p-value of 0.3828. The coefficient is statistically insignificant at conventional levels. Therefore, the estimated model does not provide sufficient evidence that institutional quality significantly moderates the short-run relationship between financial inclusion and capital market deepening. Although the interaction coefficient is negative, its statistical insignificance means that the study cannot conclude that institutional quality weakens the effect of financial inclusion on CMD.

Inflation (D (INFL)) has a positive coefficient of 0.008702, with a t-statistic of 2.394965 and a p-value of 0.0207. The coefficient is statistically significant at the 5% level. This indicates a positive short-run association between changes in inflation and changes in capital market deepening, conditional on the other variables in the model. Although the positive sign may appear counterintuitive because inflation can erode purchasing power and increase economic uncertainty, the estimated relationship could reflect nominal valuation effects or other market conditions. The result should therefore be interpreted as an empirical association rather than evidence that inflation necessarily promotes capital market development.

The monetary policy rate (D (MPR)) has a negative coefficient of −0.000852, with a t-statistic of −0.174027 and a p-value of 0.8626. The coefficient is statistically insignificant at all conventional levels. Consequently, the results do not provide sufficient evidence that short-run changes in the monetary policy rate are associated with changes in CMD during the period under investigation.

Real GDP growth (D (RGDPGR)) has a positive coefficient of 0.005218, with a t-statistic of 0.758158 and a p-value of 0.4521. Its first lag, D(RGDPGR(−1)), also has a positive coefficient of 0.010251, with a t-statistic of 1.547244 and a p-value of 0.1285. Both coefficients are statistically insignificant at the 10% level. Hence, the estimates do not establish a statistically significant contemporaneous or one-period-lagged short-run relationship between real GDP growth and capital market deepening.

The foreign-exchange regime dummy (D(DUforex)) has a positive coefficient of 0.001388, with a t-statistic of 0.030774 and a p-value of 0.9756. This coefficient is statistically insignificant at conventional levels. Thus, the model does not provide evidence of a statistically significant short-run difference in CMD associated with the foreign-exchange regime represented by the dummy variable, after controlling for the other regressors.

The lagged dependent-variable term, D (CMD(−1)), has a positive coefficient of 0.268944, with a t-statistic of 1.813679 and a p-value of 0.0761. The coefficient is statistically significant at the 10% level but not at the 5% level. This provides weak evidence of positive short-run persistence in changes in capital market deepening: an increase in CMD in the preceding period is associated with an increase in its current change, although the evidence is not strong at the conventional 5% threshold.

Finally, the error-correction term, CointEq(−1), has a coefficient of −0.005320, with a t-statistic of −0.082896 and a p-value of 0.9343. Although the coefficient is negative, as would ordinarily be expected in a stable error-correction model, it is statistically insignificant. Given that the bounds test does not establish cointegration at the 5% level, the coefficient should not be interpreted as evidence of adjustment towards a long-run equilibrium. The results do not establish a statistically significant error-correction mechanism.

Overall, the short-run results indicate that financial inclusion and inflation have positive, statistically significant relationships with CMD at the 1% and 5% levels, respectively. The lagged change in CMD is positive and significant at the 10% level. Institutional quality, the interaction term, the monetary policy rate, current and lagged real GDP growth, and the foreign-exchange regime dummy are statistically insignificant at the 10% level. Therefore, the estimated short-run model does not establish a statistically significant moderating effect of institutional quality on the financial inclusion–CMD relationship.

Panel C: Goodness-of-fit measures

The reported coefficient of determination (R2)) is 0.896666, indicating that approximately 89.67% of the sample variation in the dependent variable, as represented in the estimated short-run equation, is explained by the regressors included in the model. The adjusted (R2) is 0.865744, indicating that approximately 86.57% of the variation is explained after adjusting for the number of regressors.

The reported F-statistic is 1080.934, with a p-value of 0.0000. Taken at face value, this indicates that the model is jointly statistically significant. The Durbin–Watson statistic is 2.031374, which is close to 2. This is broadly consistent with an absence of strong first-order residual autocorrelation.

Panel D: Diagnostic tests

The diagnostic tests assess whether the estimated short-run model exhibits residual serial correlation, heteroskedasticity, ARCH effects, functional-form misspecification, or non-normality. The reported probabilities are evaluated against the 5% significance level.

The Breusch–Godfrey serial-correlation LM test has a reported test statistic of 0.190867 and a p-value of 0.9090. Since the p-value exceeds 0.05, the null hypothesis of no serial correlation is not rejected. Thus, the test provides no evidence of residual serial correlation at the lag order specified in the test.

The Breusch–Pagan–Godfrey heteroskedasticity test reports a test statistic of 9.988618 and a p-value of 0.6949. Since the probability is greater than 0.05, the null hypothesis of homoskedasticity is not rejected. This indicates that the test does not detect statistically significant evidence of heteroskedasticity in the residuals.

The ARCH test reports a statistic of 1.493544 and a p-value of 0.2217. As the p-value exceeds 0.05, the null hypothesis of no ARCH effects is not rejected. Therefore, the test does not provide sufficient evidence of autoregressive conditional heteroskedasticity in the residuals.

The Ramsey RESET specification test has a reported statistic of 0.850897 and a p-value of 0.3611. Since the p-value is above 0.05, the null hypothesis is not rejected. The test does not detect statistically significant evidence of the functional-form misspecification it is designed to identify. However, this result does not guarantee that the model is free from all possible specification errors or omitted-variable problems.

The Jarque–Bera statistic is 1.718624, with a p-value of 0.423453. Since the probability exceeds 0.05, the null hypothesis that the residuals are normally distributed is not rejected. Thus, the residuals do not exhibit a statistically significant departure from normality according to this test.

Taken together, the diagnostic results are favourable: the tests do not identify statistically significant serial correlation, heteroskedasticity, ARCH effects, the tested functional-form misspecification, or non-normality at the 5% level. These results support the adequacy of the model with respect to the specific diagnostic problems and stability tests examined.

The short-run estimates indicate that financial inclusion and inflation have positive and statistically significant relationships with capital market deepening, while the lagged change in CMD is positive and significant at the 10% level. The estimated effects of institutional quality, the financial inclusion–institutional quality interaction, the monetary policy rate, current and lagged real GDP growth, and the foreign-exchange regime dummy are not statistically significant at conventional levels. Consequently, the results do not establish a significant moderating role for institutional quality in the short-run relationship between financial inclusion and CMD.

The diagnostic tests do not reveal significant problems with residual serial correlation, heteroskedasticity, ARCH effects, the tested functional form, stability (see appendix for CUSUM and CUSUM

square tests) or normality.

DISCUSSION OF FINDINGS

Financial Inclusion and Capital Market Deepening in Nigeria

The study's findings suggest that financial inclusion plays a positive role in short-run capital market deepening in Nigeria. This relationship highlights the potential importance of expanding access to and use of formal financial services in promoting the mobilisation of savings and broadening participation in financial markets. Financial inclusion can provide individuals and businesses with opportunities to save securely, undertake financial transactions and access investment-related services. However, its contribution to capital market development depends on whether access to financial services translates into actual participation in capital market instruments and the mobilisation of resources for long-term investment.

This finding is consistent with the Financial Deepening Hypothesis associated with McKinnon (1973) and Shaw (1973), which emphasises the contribution of an expanded and efficient financial system to savings mobilisation and resource allocation. It also aligns with Financial Intermediation Theory, particularly the argument that financial institutions facilitate the transfer of funds from surplus units to deficit units, thereby supporting investment and financial development. From this perspective, financial inclusion can contribute to capital market deepening by increasing the number of individuals and businesses participating in formal financial activities and potentially expanding the pool of resources available for investment.

The finding also corresponds with the empirical evidence reported by Ofosu-Mensah Ababio et al. (2023), who identified financial inclusion as an important contributor to financial depth and access across banking, debt and stock markets in emerging and frontier economies. Similarly, Otinga et al. (2025) reported that financial inclusion contributes to capital market development across African countries, while Momoh et al. (2026) highlighted the importance of financial inclusion-related indicators in explaining capital market development in Nigeria. These studies collectively reinforce the argument that financial inclusion can support capital market development, although the nature and strength of the relationship may differ across countries, financial systems and empirical specifications.

The present study nevertheless draws attention to the distinction between access to basic financial services and participation in capital markets. Access to payment platforms, savings accounts and other conventional financial services does not necessarily mean that individuals invest in equities, bonds or other capital market instruments. Consequently, financial inclusion policies should extend beyond account ownership and transaction facilitation to include investment education, access to affordable investment products and the development of channels through which financially included individuals can participate in regulated capital market activities.

The interpretation is consistent with the study's theoretical position that financial inclusion can contribute to capital market deepening through savings mobilisation, financial intermediation and broader investment participation. However, the evidence should be understood in terms of short-run dynamics, since the analysis does not establish a long-run equilibrium relationship between the variables.

Institutional Quality and Its Moderating Role

The study does not establish a statistically significant moderating role for institutional quality in the relationship between financial inclusion and capital market deepening. This finding suggests that the expected conditioning effect of institutional quality is not empirically demonstrated within the estimated model. It does not, however, imply that institutions are unimportant to capital market development. Rather, it indicates that the hypothesised interaction between financial inclusion and institutional quality requires further investigation.

Institutional Theory, particularly North (1990), provides a useful framework for understanding the relevance of institutions to financial development. Institutions shape incentives, define the rules governing economic exchange and influence the predictability of economic activity. In financial markets, effective institutions can support confidence by strengthening regulatory enforcement, protecting investors, improving transparency and promoting accountability. These functions may create an environment in which individuals are more willing to use formal financial services and participate in investment activities.

Similarly, Law and Finance Theory, associated with La Porta et al. (1997, 1998), emphasises the importance of legal protection and institutional arrangements in the development of financial markets. Investor protection, contract enforcement and the effective regulation of financial intermediaries can influence the willingness of investors to commit resources to financial instruments. In the Nigerian context, these institutional considerations remain relevant to efforts aimed at increasing retail participation, improving market confidence and mobilising long-term investment funds.

The absence of a statistically established moderating effect in the present study differs from the broader institutional argument and some findings in the empirical literature. For instance, Zeqiraj et al. (2022) reported that institutional quality promotes financial inclusion across developing countries. Otinga et al. (2025) also

identified a complementary relationship between financial inclusion and financial openness in promoting capital market development across African economies. Conversely, Chaurasiya and Singh (2026) reported a negative interaction between financial inclusion and institutional quality in their analysis of stock market development in BRICS countries. These differences indicate that the role of institutions in the financial inclusion–capital market relationship may depend on country-specific conditions, the institutional indicators employed, the nature of financial inclusion and the measures used to represent capital market development.

The implication is that institutional quality should not automatically be assumed to strengthen the contribution of financial inclusion to capital market deepening in every context. The effectiveness of institutional arrangements may depend on their implementation, consistency and interaction with financial-sector structures. Further research using disaggregated measures of institutional quality could help determine whether particular dimensions, such as regulatory quality, rule of law, government effectiveness or control of corruption, are more relevant to the relationship than an aggregate institutional index.

Inflation, Monetary Policy, Economic Growth and Foreign Exchange Policy

The findings concerning the macroeconomic control variables suggest that their relationships with capital market deepening differ across variables. Inflation exhibits a positive short-run association with capital market deepening, whereas the monetary policy rate, real GDP growth and the foreign exchange policy dummy do not demonstrate statistically significant relationships within the estimated specification.

The positive association between inflation and capital market deepening requires cautious interpretation. It should not be taken to imply that inflation is desirable or that rising prices necessarily improve capital market performance. Inflation can influence nominal asset valuations, investment decisions, purchasing power and the real returns earned by investors. Its relationship with capital market indicators may therefore depend on whether the indicators adequately distinguish nominal market expansion from improvements in real financial activity. This consideration is particularly important in an economy exposed to changes in prices, exchange rates and monetary conditions.

The findings also suggest that the relationship between monetary policy and capital market deepening may not be captured adequately by the monetary policy rate alone. Changes in the policy rate can affect borrowing costs, liquidity, asset valuations and investment decisions, but their transmission to capital markets may depend on the structure of the financial system, investors' expectations and prevailing macroeconomic conditions. Accordingly, the absence of a statistically established relationship in the present model should not be interpreted as evidence that monetary policy is irrelevant to capital market development.

Similarly, the lack of a statistically established relationship between real GDP growth and capital market deepening indicates that improvements in aggregate economic activity do not necessarily translate immediately into greater capital market participation. The transmission may depend on income distribution, household savings, and business financing requirements, investor confidence and the availability of investment opportunities. Economic growth may create conditions favourable to capital market development, but the benefits are not automatic.

The foreign exchange policy dummy also does not show a statistically significant relationship in the estimated model. This result should be interpreted in light of the limitations of a binary indicator, which may not fully capture the intensity, timing or transmission channels of foreign exchange policy changes. Exchange rate conditions can affect corporate profitability, investor expectations, capital flows and the valuation of financial assets. Further analysis using more detailed measures of exchange rate movements and policy changes may therefore provide a more comprehensive understanding of these relationships.

Overall, the control-variable findings underscore the importance of interpreting macroeconomic relationships within the specific context of the model and sample period. They do not justify concluding that the relevant policy variables have no economic significance; rather, they indicate that their effects are not statistically established by the present specification.

Model Adequacy and the Implications for Long-Run Interpretation

The model diagnostics do not indicate major problems with serial correlation, heteroskedasticity, ARCH effects or functional-form misspecification at conventional significance levels. These results provide some support for the adequacy of the estimated specification for analysing the short-run relationships under investigation. Nevertheless, diagnostic results cannot establish that the model captures every relevant economic mechanism or that its estimated relationships are causal.

An important qualification concerns the absence of evidence of a long-run cointegrating relationship at the five per cent significance level. This limits the extent to which the estimated model can support claims about a stable long-run equilibrium relationship among financial inclusion, institutional quality, their interaction and capital market deepening. The findings should therefore be interpreted primarily in terms of short-run dynamics rather than as evidence of a persistent long-run relationship.

This distinction is important when comparing the study with previous research that reports long-run relationships between financial inclusion and capital market development. Differences in data frequency, country coverage, measurement approaches, model specification and sample periods may contribute to differences in empirical conclusions. The Nigerian evidence presented here therefore provides a context-specific contribution without implying that the relationship observed in the short run must persist over the long term.

Synthesis of the Discussion

Taken together, the findings suggest that financial inclusion is relevant to short-run capital market deepening in Nigeria, while the moderating role of institutional quality remains unestablished within the estimated model. The results are broadly consistent with the theoretical proposition that expanding access to financial services can support savings mobilisation and financial participation. However, the institutional perspectives considered in the study also indicate that access alone may not be sufficient to ensure effective capital market development.

The key implication is that financial inclusion and capital market development should be connected through policies that encourage investment participation, improve financial literacy and expand access to suitable capital market instruments. At the same time, institutional reforms should continue to strengthen investor protection, regulatory enforcement, transparency and confidence in the financial system. These reforms remain important policy objectives even though the present study does not establish a statistically significant moderating effect.

The study consequently contributes to the debate by distinguishing the positive short-run relationship between financial inclusion and capital market deepening from the unconfirmed moderation hypothesis and the unestablished long-run relationship. This more cautious interpretation recognises the potential contribution of financial inclusion while acknowledging that the translation of financial access into sustained capital market development remains dependent on broader financial, institutional and macroeconomic conditions.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the relationship between financial inclusion and capital market deepening in Nigeria, with particular emphasis on the moderating role of institutional quality. The study was motivated by the need to understand how access to and use of formal financial services can contribute to capital market development and whether the institutional environment influences this relationship.

The study concludes that financial inclusion represents an important component of efforts to deepen Nigeria's capital market. By broadening access to formal financial services, financial inclusion can facilitate savings mobilisation, improve participation in the financial system and create opportunities for individuals and businesses to engage in investment activities. However, the contribution of financial inclusion to capital market development depends not only on access to basic financial services but also on the extent to which such access translates into meaningful participation in capital market instruments and the mobilisation of funds for long-term investment. Financial inclusion should therefore be understood as a potential pathway to capital market deepening rather than an automatic guarantee of financial market development.

The study also highlights the importance of institutional quality in the broader financial development process. Effective regulation, investor protection, transparency, accountability and reliable contract enforcement can strengthen confidence in financial markets and create an enabling environment for investment. Nevertheless, the extent to which institutional quality conditions the relationship between financial inclusion and capital market deepening remains an issue requiring further investigation. The institutional perspectives underpinning the study provide a basis for expecting institutions to influence financial market outcomes, but the proposed moderating relationship should not be assumed without adequate empirical support.

Furthermore, capital market deepening takes place within a broader macroeconomic environment shaped by inflation, monetary policy, economic growth and foreign exchange conditions. These factors can influence investment decisions, market liquidity, asset valuations and the willingness of individuals and businesses to participate in financial markets. Consequently, policies aimed at promoting financial inclusion and capital market development should be implemented alongside measures that encourage macroeconomic stability and strengthen confidence in the financial system.

The study's findings should be interpreted within the scope of its short-run analytical framework. The absence of an established long-run equilibrium relationship limits the conclusions that can be drawn about the persistence of the relationship between financial inclusion and capital market deepening. Further research is therefore necessary to establish whether the observed short-run dynamics extend over the long term and to identify the institutional conditions under which financial inclusion can contribute more effectively to capital market development.

Overall, the study underscores the need for an integrated approach to financial development in Nigeria.

Expanding access to financial services should be accompanied by investment-oriented financial products, financial literacy, effective consumer protection, credible market regulation and institutional reforms. Such an approach can help bridge the gap between financial inclusion and active capital market participation while providing a stronger foundation for sustainable financial market development.

Recommendations

Based on the empirical findings, the study makes the following recommendations.

First, financial inclusion policies should move beyond basic account ownership towards investment-oriented financial participation. The positive and significant short-run coefficient of financial inclusion suggests that expanding access to formal financial services may support capital market deepening. The Central Bank of Nigeria (CBN), the Securities and Exchange Commission (SEC), the Nigerian Exchange Group (NGX), and financial service providers should therefore strengthen initiatives that connect financially included individuals and small businesses to suitable capital market products. These initiatives may include investor education, accessible investment platforms, simplified onboarding procedures and affordable investment products designed for different income groups. Particular attention should be given to ensuring that increased access translates into actual savings mobilisation and participation in securities markets.

Second, financial literacy and investor education should be strengthened. Financial inclusion may have limited implications for capital market development when individuals lack the knowledge required to evaluate investment products, understand risk and make informed financial decisions. The CBN, SEC, NGX, deposit money banks and financial technology providers should collaborate to provide sustained financial and investment education. Such programmes should explain the differences between savings and investments, the risks associated with capital market instruments, the importance of portfolio diversification and the need to verify the registration and legitimacy of investment providers. These interventions should be accessible to rural communities, young adults, informal-sector operators and other underserved groups.

Third, institutional reforms should remain a priority, notwithstanding the statistically insignificant moderation result. Although the study does not establish that institutional quality significantly moderates the short-run relationship between financial inclusion and capital market deepening, this finding does not imply that institutional quality is unimportant. Regulatory agencies and relevant public institutions should continue to strengthen transparency, accountability, contract enforcement, investor protection and the consistent application of financial market regulations. Effective mechanisms for resolving investor complaints, preventing market abuse and sanctioning fraudulent investment schemes are also necessary. These measures are justified by the broader institutional requirements of a well-functioning capital market, rather than by a claim that the study has demonstrated a statistically significant moderating effect.

Fourth, regulators and financial service providers should improve consumer protection in digital financial services. As digital channels facilitate access to financial services, policies should ensure that expanded access is accompanied by safeguards against fraud, data breaches, misleading investment promotions and unauthorised transactions. Financial institutions and fintech providers should strengthen cybersecurity, disclose fees and product risks clearly, and establish accessible complaint-resolution mechanisms. Such safeguards may help build confidence in formal financial services and create more favourable conditions for participation in regulated investment opportunities.

Fifth, inflation management should remain central to macroeconomic policy. The positive short-run coefficient of inflation in the estimated model should not be interpreted as a reason to tolerate higher inflation. Rather, the result warrants further investigation into the possible influence of nominal asset valuations, market conditions and other factors on the measured relationship between inflation and capital market deepening. The CBN and fiscal authorities should continue to pursue policies that promote price stability and macroeconomic predictability. Greater stability can assist households and businesses in making financial plans and help investors assess the real value and risks of their investments.

Sixth, capital market development policies should be coordinated with broader financial-sector reforms. The insignificant coefficients for the monetary policy rate, real GDP growth and the foreign exchange policy dummy indicate that their effects are not statistically established in the current short-run specification. Policymakers should therefore avoid drawing firm conclusions about the absence of their economic relevance. Instead, the CBN, SEC, fiscal authorities and other relevant agencies should coordinate financial inclusion, capital market development and macroeconomic policies, while monitoring how changes in economic conditions affect investment participation, market liquidity and the availability of long-term finance.

Contribution to Knowledge and Policy Implications

The study contributes to the financial development literature by examining financial inclusion and capital market deepening jointly with institutional quality in the Nigerian context. Rather than assuming that institutional quality necessarily strengthens the relationship, the study tests this proposition through an

interaction term. The statistically insignificant interaction coefficient indicates that the hypothesised moderating effect is not established by the current short-run estimates.

From a policy perspective, the central implication is that expanding financial access should be accompanied by measures that encourage meaningful investment participation, while institutional reforms should be pursued as an important component of sound financial-market governance. The findings support a cautious, evidence-based approach: financial inclusion is positively associated with short-run capital market deepening, but the study does not establish a long-run equilibrium relationship or a statistically significant moderating role for institutional quality. These distinctions are important for ensuring that policy recommendations remain consistent with the empirical evidence.

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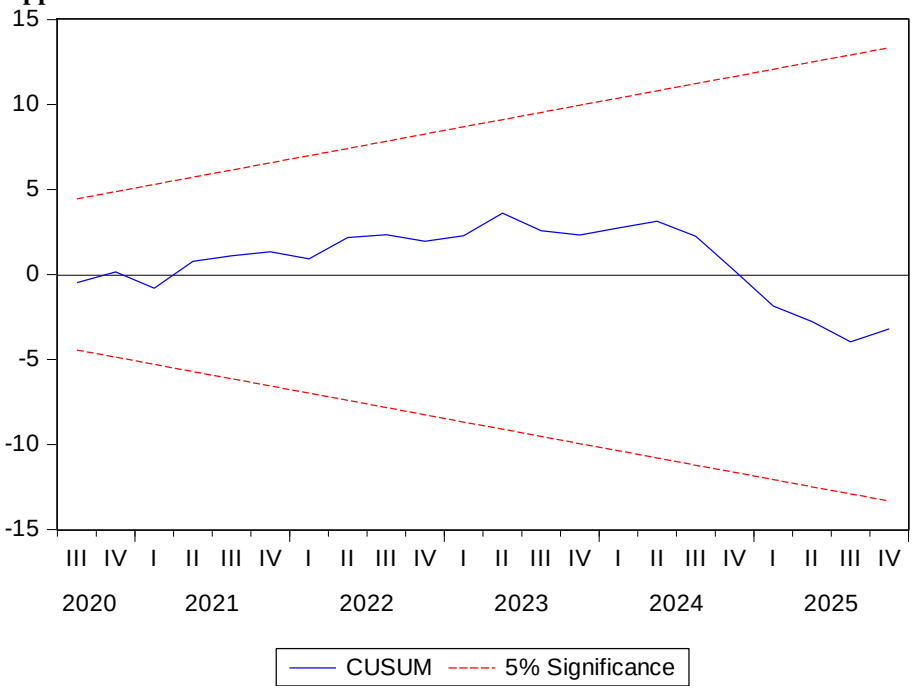
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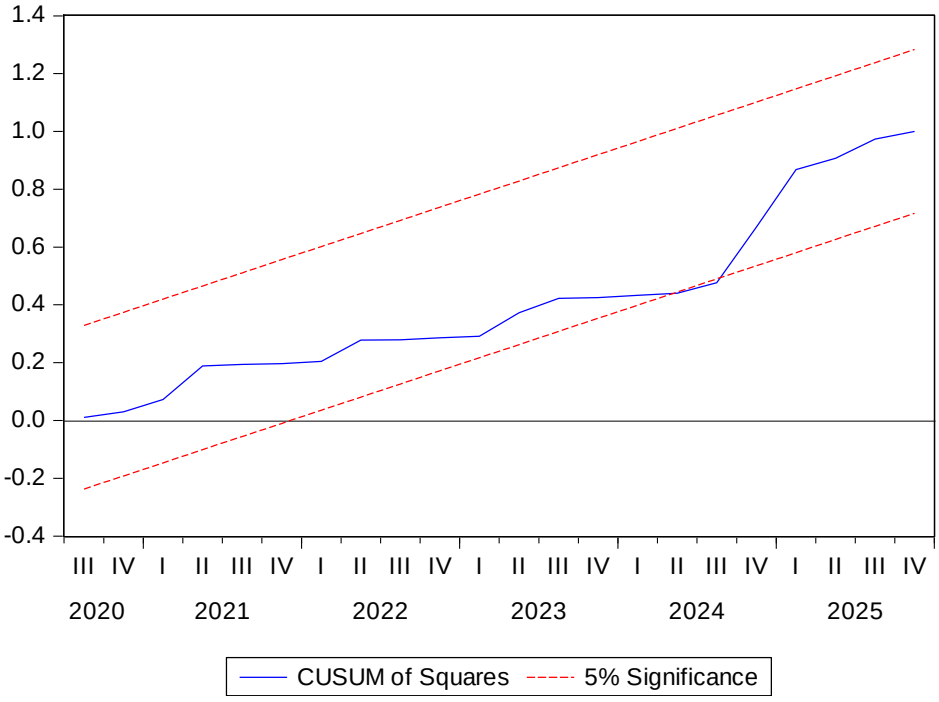
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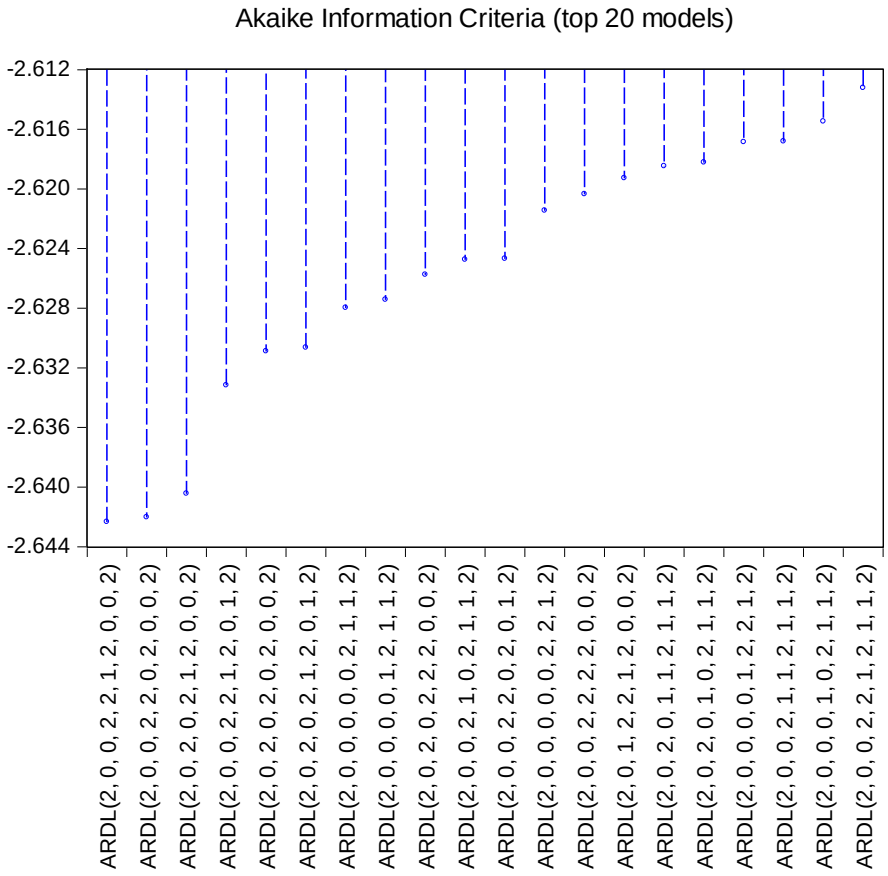
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Appendices


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2020
2021
2022
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CUSUM
5% Significance


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-0.2
-0.4
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2020
2021
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CUSUM of Squares
5% Significance


Akaike Information Criteria (top 20 models)
-2.612
-2.616
-2.620
-2.624
-2.628
-2.632
-2.636
-2.640
-2.644
ARDL(2, 0, 0, 2, 2, 1, 2, 0, 0, 2)
ARDL(2, 0, 0, 2, 2, 0, 2, 0, 0, 2)
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