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## FINANCIAL DEVELOPMENT AND FOREIGN PORTFOLIO INVESTMENT IN NIGERIA

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### Abstract

*This study investigates the impact of financial development on foreign portfolio investment (FPI) in Nigeria using annual data from 1990 to 2024 sourced from the World Development Indicators. The analysis applies the Cross-sectional Autoregressive Distributed Lag (CS-ARDL) approach to capture both short-run and long-run dynamics. Financial development is represented by a composite index constructed through principal component analysis of stock market capitalization, market liquidity, and private sector credit, while control variables include GDP growth, exchange-rate volatility, inflation, and interest-rate differentials. Empirical results reveal that stock market capitalization, liquidity, and private sector credit exhibit positive but statistically insignificant long-run relationships with FPI. Conversely, short-run factors, particularly recent credit expansion and favourable interest-rate differentials, exert significant influence, suggesting that temporary improvements in domestic credit and interest-rate policies attract foreign portfolio inflows. The findings indicate that financial development has only a modest effect on FPI, highlighting the importance of macroeconomic stability and institutional quality. Policy recommendations include strengthening exchange-rate management to reduce currency risk, adopting credible inflation-targeting frameworks to curb volatility, and enhancing credit market efficiency. These measures create a stable investment environment that indirectly supports financial development and fosters sustained FPI inflows.*

**Keywords:** financial development; foreign portfolio investment (FPI); autoregressive distributed lag model (ARDL); Principal Component Analysis (PCA).

**JEL Classification Codes:** G11, G15, E44, O16

### INTRODUCTION

Nigeria is inherently tied to the direction of economic development that has been dependent on the inflow of foreign portfolio capital, as it is a major stimulus to capital accumulation and increase in the liquidity ratio in the market. Through the mobilization of international capital flows, the financial resources may be channeled to the equity markets, debt securities and other securities that are aimed at enhancing the modernization of infrastructures and expansion of corporations. This has created a need to adjust the Nigerian Stock Exchange and bond market

ecosystem to fit the complex needs of international investors that want to diversify and gain risk-adjusted returns in emerging-market portfolios. So the financial architecture will turn the inflow of foreign capital into productive investment tools, as a result, providing the means of technological transfer and spreading managerial knowledge (Adumah, Anyanwu & Nwokoye, 2024; Chukwudi and Akamobi, 2025). The long-running instability of flows in portfolio and the vulnerability of domestic markets to sudden capital flows is an enormous challenge towards the stability goals of financial system. These challenges have been tackled over time by administrations in place through the establishment of regulatory frameworks, building of institutional capacity, liberalization of foreign-exchange regimes and capital-market infrastructure advancements that have alleviated systemic risk and increased investor confidence (Egberi and Monye, 2020).

The level of sophistication and sustainability of financial-sector development is the core issue of attractiveness of Nigeria to the portfolio investors. The maturity of the financial sector has been seen in terms of the efficiency of the capital-distribution processes, openness of the market processes, the effectiveness of regulatory framework, as well as the liquidity of the securities markets. Professional financial institutions will minimize transaction costs and minimize information asymmetry and enhance price-discovery mechanisms that can allow foreign investors to determine risk-profiles and risk-reward relationship with greater accuracy (Akinmulegun, 2018; Oyerinde, 2019). On the other hand, immature financial markets, which are typified by poor disclosure criteria, poor corporate-governance structures, poor liquidity trading status, and limitations to currency convertibility are significant impediments to the entry of portfolio-investment. Therefore, the perceived quality of financial development can be regarded as a conclusive factor of capital mobility across international markets of international capital since the institutional investors would exploit portfolio investments in accordance with the quality of market infrastructure, predictability of the regulatory environment, and presentation of hedging instruments (Obi, Onoh & Osuala, 2021).

The mutual cause and effect relationship between foreign portfolio investment and financial development will be bidirectional, which may end in either the virtuous circle effect of reinforcement or the vicious circle effect of stagnation. The high development of the financial sector and the gradual establishment of regulatory balance create the environment that facilitates the ongoing inflow of the portfolio, the technological advanced trading platforms, increased capitalization of the market as well as improved corporate disclosure mechanisms (Adumah, Anyanwu & Nwokoye, 2024; Akinmulegun, 2018). This relationship delivers positive externality, such as better credit-rating evaluation, lower cost of sovereign borrowing, increased fiscal space to spend on development initiatives, and increased ability not only to bring in portfolio capitals but also foreign direct investment to find safe and sound operations, respectively. Shallow financial markets and unstable policy regimes, on the other hand, force risk-averse foreign investors to continue to concentrate their portfolios in less problematic emerging markets which in turn sustain underdevelopment equilibria that prevent the growth of financial innovations and global access to savings pools. Therefore, the opportunities of foreign penetration of the foreign portfolio-investment in Nigeria are dependent on overcoming institutional weaknesses concerning transparency of the markets, consistency in regulations and macroeconomic stability under an integrated policy framework that would support the sustainable inflow of the capital and efficient allocation of resources (Chukwudi and Akamobi, 2025).

Historically, Nigeria has not been able to maintain a stable foreign portfolio investment although it has been found to have the largest economy in Africa and a stock exchange that has a high potential of capitalization. Since the last 20 years, there have been bouts of expansion in the financial sector, but there is still the reluctance of the foreign investors who fear the currency volatility, uncertainty on regulations and political risk. The recurrently disappointing nature of the devaluation processes of the naira, the foreign-exchange restrictions, and numerous exchange-rate regimes give rise to the difficulties in hedging, that reduced returns on the portfolios, and increased the transaction costs. Regular flight of portfolio capital at times of declining oil prices, during political changes and during periods of global risk-off has laid down patterns of capital flight that ultimately counter the stability of the market and destroy the confidence of investors (Adumah, Anyanwu & Nwokoye, 2024; Ogundipe et al., 2019).

Empirical studies that have been conducted so far (Akinmulegun, 2018; Egberi and Monye, 2020) have tried to draw the nexus between development in the financial sector and portfolio capital flows, but most of the studies have used aggregate financial indicators without sufficiently disaggregating the vehicles of financial development in the conduct of investors. The situation in Nigeria requires the specific intellectual focus since the inefficiencies in the financial sector, and the volatility of portfolio flows are symbiotic forces that limit long-term capital formation. The relationship between the temporality of causality between financial- development indices and portfolio- investment behaviors has not been studied adequately in recent years, mostly based on assumptions of taking on unidirectional relationships without any strict econometric test.

In this respect, the paper seeks to fill this analytical gap by taking a systematic study of how development of financial sector interrelates with foreign portfolio investment to deepen capital markets in Nigeria. It uses a composite financial development index that was built via principal component analysis and therefore combines the aspect of multidimensional factors related to the sophistication of both financial and stock-market liquidity indicators of bond-market and institutional-quality (Adumah, Anyanwu and Nwokoye, 2024). The paper also makes use of advanced causality-testing models to determine the presence of any bidirectional relationship variables, i.e. whether portfolio inflows have been stimulated by financial development, or whether endogenous pressures in the financial sector to promote financial sector modernization by portfolio investment have been generated. These two analytical strategies is the methodological novelty that fulfills the significant gaps in the current literature on capital flows and financial development in Nigeria.

## LITERATURE REVIEW

### Conceptual Clarification

Financial development refers to the process by which a country's financial system becomes more efficient, diversified, and resilient in mobilising savings, allocating capital, and facilitating risk management. It encompasses improvements in financial institutions, markets, and instruments that enhance liquidity, transparency, and access to credit. Indicators commonly used to measure financial development include stock market capitalisation, market liquidity ratios, and domestic credit to the private sector, as these reflect the depth and functionality of financial markets (Levine, 1997; Beck et al., 2000).

Foreign portfolio investment (FPI), on the other hand, represents cross-border investments in financial assets such as equities, bonds, and money-market instruments, without the intention of acquiring managerial control. FPI is highly sensitive to macroeconomic stability, exchange-rate predictability, and institutional quality, as investors seek risk-adjusted returns in emerging markets (Obi et al., 2021). In the Nigerian context, FPI plays a critical role in supplementing domestic savings, improving market liquidity, and supporting capital formation. However, its volatility poses challenges for financial stability, particularly during periods of exchange-rate misalignment and policy uncertainty.

The conceptual linkage between financial development and FPI is grounded in theories such as the Financial Development Theory and Portfolio Balance Theory. These frameworks suggest that well-developed financial systems attract international capital flows by reducing information asymmetry, lowering transaction costs, and offering diversified investment opportunities. Conversely, shallow financial markets characterised by poor disclosure standards, weak governance, and limited liquidity deter foreign investors and perpetuate underdevelopment equilibria.

In this study, financial development is operationalised through a composite index constructed using Principal Component Analysis (PCA), which synthesises multiple indicators into a single measure to capture the multidimensional nature of financial sector sophistication. FPI is measured as a percentage of GDP to reflect its relative importance in the economy. This conceptual framework underpins the empirical analysis of how financial development influences FPI inflows in Nigeria, while accounting for macroeconomic factors such as exchange-rate volatility, inflation, GDP growth, and interest-rate differentials.

## **Theoretical Review**

### **Financial Development Theory**

As initially theorized by McKinnon (1973) and Shaw (1973), The Financial Development Theory can provide important insights towards the influence of the sophistication of the financial sector on the determination of capital mobility and investment distribution to emerging markets. Its main thesis is that financial repression as practiced by interest-rate controls, too-large reserve requirements, directed credit requirements and capital-account requirements retards economic growth by distorting the savings behaviour, misdirecting capital and making foreign participation in investment unwelcome. According to the theory, competitive market conditions due to financial liberalisation and institutional modernisation ensure an inflow of international capital because of increased returns, reduced transaction cost, and increased investor protection (Adumah, Anyanwu & Nwokoye, 2024).

The structure reiterates that the beneficial linkage that exists between financial development and foreign portfolio investment arises through a number of transmission mechanisms that are inclusive of the augmented market liquidity, the intensified price-discovery procedures, the enhanced regulatory supervision and an intellectual ease international investors that reduces the risk premium required by foreign investors (Yildiz, 2021). On the other hand, repressed financial systems in which the markets of capital and corporate-governance are opaque and legal-enforcement is weak deter portfolio investment because either foreign investors may require very high risk-adjusted returns to invest there or the existence of repressed financial markets is simply not even considered as an investment option at all (Nxumalo and Makoni, 2021).

Financial development plays a key role in the situation in Nigeria because the flows of capital had been volatile in the past, and the issue of remaining investor confidence remains. The banking industry, financial institutions of capital-markets, and regulatory bodies have to develop to achieve greater efficiency of markets, maintain transparency levels, and enable capital proceedings to flow to productive domestic investment projects, especially to capitalize on the potential offered by the equity and debt markets, encourage securities-trading volume, and direct international savings into viable projects (Adumah, Anyanwu & Nwokoye, 2024).

### **Portfolio Balance Theory (Tobin-Markowitz Framework)**

Portfolio Balance Theory is developed using work of Tobin (1958) and Markowitz (1952), and its framework provides a deep insight into the explanations of the cross-border capital-allocation decisions as well as the variables that define the international portfolio diversification. The main argument here is that rational investors create optimum portfolios by balancing expected returns and exposure to risk in a systematic way to maximise utility by diversifying portfolios in terms of imperfectly correlated assets classes and across geographic markets. According to the theory, the foreign portfolio-investment flows are a reaction to the country's divergent riskreward conditions, and the capital flows towards markets that provide better Sharpe ratios independent of country-specific risks, such as political instability, currency fluctuations, regulatory uncertainty, etc. (Burkhardt and Ulrych, 2023).

The framework also explains that responsiveness of portfolio investment to financial development gains becomes real with the lower levels of home bias, more global capital operations mobility, and better integration of the markets with improved institutional quality in line with the institutional quality to international standards (Zaimovic, Arnautić Berilo and Beslija, 2024). Universal financial markets, in their turn, have the properties that enhance the portfolio-flow volatility, such as small market depth to stimulate price effects, insufficient hedging tools to concentration of currency risk, and ineffective corporate disclosure to continue the profitability of information disadvantages of foreign investors (Yildiz, 2021).

In the case of Nigeria, the issue of portfolio-balance is especially acutely relevant because this economy is prone to external shocks and the capital flows proved to be procyclical. The stock market, fixed income markets, and foreign exchange regime should come up with mechanisms to absorb and stabilize the portfolio flows, sufficient liquidity buffers, and risk management instruments particularly to attract the long-term institutional investors (like pension funds and sovereign-wealth funds), diversify the investor base beyond the short-run capital and transform the episodic surges in the portfolio into permanent financial deepening that can support domestic investment and economic transformation (Adumah, Anyanwu & Nwokoye, 2024).

### **Empirical Review**

The article An Empirical Study on Foreign Institutional Investors in Indian Capital Market is research done by Yasaswi, Kandi, and Sudha (2025), which is about the contribution and effects of the foreign institutional investors (FIIs) in India. Although the type of data and methodology is not mentioned in the abstract, the setting of the study is in India and perhaps secondary data in the form of market records are used to study the trends of FII and the impact it has had on the Indian capital market.

Mustapha, A., Giwa, O. K. & Moronfoye, A. (2025). Financial Development and Foreign Portfolio Investment in Nigeria. *Malete Journal of Accounting and Finance*, 6 (1), 249 – 265

The article by Ibraimi, Ziberi, Nawaz Ahmad, and Vveinhardt (2025) is an exploration of the topic Foreign Direct Investment Legislation and Economic Growth in Western Balkan Countries: A Panel Analysis based on secondary panel data of world bank 1995-2022. The techniques were pooled OLS and fixed and random effects as well as other econometric tests. The research, which was carried in the Western Balkans, portrays the positive impacts of FDI to the growth of an economy and advises the implementation of the rule of law in order to bring more investment. The data used in the research was solely secondary and questionnaires and interviews were not employed.

The article was written by Mohanty, Sethi and Dash (2024) and is entitled as What Determines Outward FDI in Developing Blocs? The article titled A New Empirical Comparative Macroeconomic Perspective of Post 1990s based on secondary data sources of BRICS and N -11 countries in 1990-2019. It encompassed OLS, 3-stage least square and GMM. The research has determined that there is a long-term positive correlation among outward FDI, GDP, financial development, and trade openness with different country-groups having different outcomes. Secondary data was used in carrying out the research.

In Foreign Investors Tendencies and Stock market performance in Pre- and Post-XBRL adoption Evidence in 2024: Foreign Investors: Tendencies and Stock market performance, Humeedat (2024) has used secondary data between 2018 and 2023, which consists of 167 listed firms in Amman Stock Exchange. It was done with the help of multiple-regression analysis. The research observed a high level of improvement in the stock-market performance after the adoption of XBRL but no significant improvement in the net foreign investment. The study took place in Jordan whereby secondary data was used in research.

In the article, Principles Behind Investors Consideration of Investing in Emerging Markets, Godi (2024) did not specify the quantitative methodology because the data on the topic was gathered by using the online questionnaire with South African asset managers. There was analysis in form of descriptive statistics. This is based on the significant reasons why one would invest in the emerging markets which include better returns and diversification of risks which the findings showed to be some of the most important reasons in making investment choices. The research was carried out in South Africa through the primary data and questionnaires.

In a research examining factors that drive foreign direct investment (FDI) inflows by West Asia and Middle East to Malaysia in 2018-2023, Hussein, Kamarul Azman Khamis, Rusdi Omar, and Muhammad Afifi Abdul Razak (2024). The qualitative method used in their study was the primary data collected by means of the analysis of documents and semi-structured interviews. According to the results, economic, political and socio-cultural factors have a great impact on the FDI flows, the cultural and religious affinities had a strong effect. The assessment of the situation was limited to just the interviews and documentary sources in Malaysia.

Okeke (2023) analysed financial development in Nigeria through the effect of foreign direct investment between the year 1999 and the year 2021. The ex post facto research design was employed and the secondary data was found in the Central Bank of Nigeria. The hypotheses were tested using the regression analysis. The findings revealed positive relationships between credit to the private sector and market capitalisation and FDI but both of the relationships were not

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statistically significant. It was established that an enabling institutional environment is necessary to lure FDI with the research basing solely on secondary data in Nigeria.

Enow (2023) developed a comparative empirical study of the emerging and developed markets in the period between 2018 and 2023. Cramer- von Mises test, Watson test and modified value at risk approaches were used in the analysis of secondary data of ten countries (5 emerging, and 5 developed). The examination showed that there are no statistically significant differences in distribution of returns, but there are more losses expected in emerging markets. The research has highlighted diversification strategy as an effective measure to counter the effects of the mentioned risks.

In the study, Maude, Okpara, Panle, and Micah (2023) examined the effect of FDI on the performance of the financial institutions within Jos Metropolitan City, Plateau State, Nigeria. The mixed -methodology study involved the use of both primary data (collected by use of questionnaires that were given to the chief finance officers of ten financial institutions) and secondary data (collected using annual financial statements). Content analysis and descriptive statistics were used. The findings highlighted the impact of FDI on institutional performance as a strong one and consequently, it was concluded that the solid regulatory framework is necessary to solve the bottlenecks in the FDI processes.

The study conducted by Rahmon and Oyo (2022) is an empirical study of how foreign and domestic investment in portfolios affects economic growth in Nigeria over the inventories of 1986-2018. The secondary data was derived on the Central Bank of Nigeria, the National Bureau of Statistics and the World Development Indicators. Methods such as Dickey-Fuller and Phillips-Perron unit-root tests, co-integration and the ordinary least squares regression were incorporated as the methodology. The results found a positive output of inflows of foreign portfolio investment in economic growth but outflows had a huge negative repercussion. The paper found that the policy actions that should be implemented in order to draw the inflows and stabilise the market should be undertaken; the research was founded only on the secondary data.

Mateus and Hoang (2021) studied its foreign portfolio investment in Bosnia and Herzegovina, Serbia, Ukraine and Vietnam between 2007 and 2019. Through the application of secondary data, the paper measured the privatization and financial liberalisation impacts on the portfolio investment inflows as well as the effects of foreign institutional investor holdings on the performance of companies in terms of Tobin Q. The findings revealed that liberalisation policies brought ease in inflows and shareholder, being a foreign institution, is capable of impacting positively on firm performance. The research revealed that although portfolio investment opportunities have increased in the transition economies, there are still difficulties in terms of their effects on the state firms.

Rasool and Ullah (2020) examined the connection between financial literacy and behavioural biases of the individual investors in the Pakistan stock market. Data collection form involved the use of structured questionnaires that were filled out by the 300 participants in Lahore in order to gather primary data. The qualitative methods used were descriptive statistics, Cronbach alpha, exploratory factor analysis and regression analysis. The results showed a negative relationship between financial literacy and behavioural biases as well as lead to the conclusion that the greater the level of financial literacy the less bias investors display.

## METHODOLOGY

This study employs an econometric approach to examine the relationship between financial development and foreign portfolio investment (FPI) in Nigeria. The analysis is based on annual time-series data covering the period 1990 to 2024, which provides sufficient observations to capture structural changes, policy regime shifts, and long-term trends. The dependent variable is foreign portfolio investment inflows expressed as a percentage of GDP. Financial development is represented by a composite index constructed using Principal Component Analysis (PCA). This index combines three key indicators: stock market capitalization, market liquidity ratio, and domestic credit to the private sector. PCA is adopted to reduce multicollinearity among these indicators and to provide a single measure that reflects the multidimensional nature of financial development. Additional control variables include exchange-rate volatility, inflation rate, GDP growth, and interest-rate differentials, as these factors are widely recognized in the literature as determinants of portfolio flows.

To estimate the short-run and long-run relationships between the variables, the study applies the Autoregressive Distributed Lag (ARDL) bounds-testing methodology developed by Pesaran et al. (2001). This approach is particularly suitable for the data structure because it accommodates variables that are integrated of order zero,  $I(0)$ , and order one,  $I(1)$ , without requiring pre-testing for unit roots beyond confirming that none is integrated of order two. Unlike traditional cointegration techniques that rely heavily on unit root pre-tests, ARDL provides a more robust framework for small sample sizes and allows simultaneous estimation of short-run dynamics and long-run equilibrium relationships. These features make ARDL appropriate for the Nigerian context, where data limitations and mixed integration orders are common.

The choice of ARDL is further justified by its flexibility in handling different lag structures and its ability to incorporate multiple explanatory variables without compromising efficiency. Diagnostic tests for model adequacy and stability are conducted to ensure reliability of the estimates, and the bounds-testing procedure is used to confirm the existence of a long-run relationship among the variables.

This study models foreign portfolio investment (FPI) as a function of financial development. The model specification is expressed as follows:

$$FPI = f(\text{FINDEV}, \text{GDP}, \text{EXR}, \text{INF}, \text{INTDIFF}) \dots\dots\dots (1)$$

Econometrically, the model is written as:

$$\Delta FPI_t = \beta_0 + \beta_1 \Delta \text{FINDEV}_t + \beta_2 \Delta \text{GDP}_t + \beta_3 \Delta \text{EXR}_t + \beta_4 \Delta \text{INF}_t + \beta_5 \Delta \text{INTDIFF}_t + \varepsilon_t \dots\dots\dots (2)$$

FPI is the dependent variable, being a percentage of GDP, foreign portfolio investment (FPI) which is denoted by  $FPI_t$ . Financial development (FINDEV) is achieved by a composite indicator (FINDEV<sub>t</sub>) of stock market capitalisation ratio (STM<sub>t</sub>), market liquidity turnover (MKTLIQ<sub>t</sub>), and domestic credit to the private sector as a percentage of GDP (CPS<sub>t</sub>) which are obtained by World Bank in its World Development Indicators database. Additional explanatory variables include the real GDP growth rate (GDPG<sub>t</sub>), the exchange-rate volatility (EXR<sub>t</sub>), the inflation (INF<sub>t</sub>) as well as the interest-rate differential (INTDIFF<sub>t</sub>). These parameters of the model ( $\beta_0$  to  $\beta_5$ ) will be estimated where  $\varepsilon_t$  represents the stochastic error. The subscript  $t$  represents the 35 years of annual time-series of Nigeria starting in 1990 and ending in 2024.

## RESULTS AND DISCUSSIONS

### *Descriptive Statistics*

The table below (Table 1) shows the descriptive statistics of the variables used. The standard deviation of FPI, STM, MKTLIQ and CPS, EXR, GDP, INF and INTDIFF is 0.226431, 7.959526, 6.945086, 4.189763 263.6575, 3.850174, 8.429068 and 9.85554, respectively. The value of FPI is a minimum of -0.19206 and a maximum of 0.939157. STM has minimum and maximum values of 0 and 30.8007 respectively. In the case of MKTLIQ the lowest point is 0 with the highest point being 34.7853. CPS has a minimum and maximum mobility of 0 and 19.6256 respectively. EXR ranges from 8.038285 to 1478.965. GDP spans from -2.03512 to 15.32916. INF is within the range of 0 and 33.2421, and INTDIFF is in the range of -31.4526 18.18. Lastly, PD both has a minimum of 0 and a maximum of 76.23724. The high variability of the chosen variables is indicated by the significant disparity between minimum and maximum values, which is why it is reasonable to elaborate on research.

**Table 1.** Descriptive Statistics.

VARIABLES	(1) N	(2) mean	(3) Sd	(4) min	(5) max
FPI	35.000	0.255746	0.226431	-0.19206	0.939157
STM	35.000	9.261751	7.959526	0	30.8007
MKTLIQ	35.000	5.697387	6.945086	0	34.7853
CPS	35.000	9.760785	4.189763	0	19.6256
EXR	35.000	198.8671	263.6575	8.038285	1478.965
GDP	35.000	4.222343	3.850174	-2.03512	15.32916
INF	35.000	7.506093	8.429068	0	33.2421
INTDIFF	35.000	2.930383	9.85554	-31.4526	18.18

**Source:** Author’s Compilation (2025).

### **Multicollinearity Test Results**

The multicollinearity issue is a fundamental problem of regression analysis. A variance inflation factor and correlation table were applied for analysis in the research to check for multicollinearity. Table, 2, indicated that, in the correlation matrix, the variables do not have strong correlations with themselves; the value of all the pairwise coefficients is less than 0.80 (Grewal, Cote, & Baumgartner 2004).

**Table 2.** Correlation Matrix of Panel Analysis Variables.

Variables	FPI	STM	MKTLIQ	CPS	GDP	EXR	INF	INTDIFF
FPI	1.0000							
STM	0.2145	1.0000						
MKTLIQ	0.1872	0.4689	1.0000					
CPS	0.2651	0.3527	0.5941	1.0000				
GDP	0.1544	0.2016	0.2893	0.3187	1.0000			
EXR	-0.1028	-0.0842	0.1125	0.1463	0.0847	1.0000		
INF	0.1237	0.1754	0.2148	0.1981	0.1675	0.6281	1.0000	
INTDIFF	0.0915	0.1448	0.2562	0.3094	0.2418	0.1945	0.2864	1.0000

**Source:** Author’s Compilation (2025).

As presented in Table 2, the correlation analysis provides important information on the relationship that exists between foreign portfolio investment (FPI), financial development

indicators, and macroeconomic variables in Nigeria. Unlike the previous research, which had reported negative correlations most of the times, the current research indicates that FPI has moderate positive correlations with some major financial development indicators. As an example, FPI is positively associated with stock market turnover (STM) of 0.2145, market liquidity (MKTLIQ) of 0.1872, and credit to the private sector (CPS) of 0.2651 indicating a gradual adjustment of the portfolio inflows to the domestic financial markets activity although the relationship is weak.

Even on the financial development indicators per se, there is clear indication of complementary growth in the outcomes. STM and MKTLIQ have a moderate positive relation of 0.4689 and the relation between MKTLIQ and CPS is stronger at 0.5941, which suggest that liquidity enhancement is strictly related to credit growth and general market performance. The correlation present between STM and CPS at 0.3527 also assists the opinion that the equity market operation and the credit operation by the privatesector are likely to grow at the same time in the Nigerian financial system.

The macroeconomic control variables also provide an example of the dynamics that reflect the economic situation of Nigeria in general. There are mostly positive associations between the exchange rate (EXR) and fundamental financial variables, including MKTLIQ (0.1125), CPS (0.1463), and GDP (0.0847), which shows the absence of short-term communication between fluctuations in the movements of the exchange rates and financial development. It is quite striking that the only positive relationship is between EXR and the rate of inflation (INF) at 0.6281, thus, indicating that the exchange rate changes are strongly related to inflation pressures, thus, as per the long existing macroeconomic predicaments, that exchange rate movements are directly translated into rise in domestic prices.

CPS (0.3094), MKTLIQ (0.2562) and GDP (0.2418) are found to have moderately positive correlations with interest -rate differentials (INTDIFF), which suggests that positive interest -rate conditions can respond to financial sector deepening and economic activity. This, however, does not mean that the relevance of interest-rate spreads as the central impetus to portfolio inflows into Nigeria, as the correlation between INTDIFF and FPI is relatively low (0.0915). GDP is mostly weakly positively related to most of the variables such as FPI (0.1544) and CPS (0.3187). The positive and low positive relationship between inflation and the GDP (0.1675) indicate that even though inflation periods in Nigeria can be certainly accompanied by moderate output changes, hence pushing to the conclusion of structural level supply side limitations, and not demand side driven inflation.

**Table 3.** Regression results of foreign portfolio investment (FPI) model.

<b>Cointegrating Form</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(STM)	0.015432	0.008712	1.772	0.0875
D(STM(-1))	0.012984	0.007980	1.627	0.1140
D(MKTLIQ)	-0.00763	0.009012	-0.972	0.3414
D(CPS)	-0.025419	0.017865	-1.423	0.1671

D(CPS(-1))	0.052368	0.019900	2.631	0.0185
D(EXR)	0.000214	0.000489	0.438	0.6640
D(GDP)	0.001274	0.011024	0.116	0.9080
D(INF)	0.007324	0.014922	0.491	0.6260
D(INTDIFF)	0.010512	0.005112	-2.056	0.0525
D(INTDIFF(-1))	-0.015782	0.005894	-2.678	0.0160
CointEq(-1)	-0.231854	0.221176	-1.049	0.3072

$$\text{Cointeq} = \text{FPI} - (0.0341*\text{STM} + 0.0213*\text{MKTLIQ} - 0.1754*\text{CPS} + 0.0006*\text{EXR} + 0.0036*\text{GDP} + 0.0242*\text{INF} + 0.0568*\text{INTDIFF} + 1.1104)$$

<b>Long Run Coefficients</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
STM	0.0341	0.0583	0.585	0.5620
MKTLIQ	0.0213	0.0387	0.550	0.5870
CPS	-0.1754	0.2164	-0.811	0.4260
EXR	0.000613	0.002201	0.279	0.7810
GDP	0.003632	0.0431	0.084	0.9330
INF	0.02423	0.0608	0.398	0.6930
INTDIFF	0.0568	0.0715	0.795	0.4320
C	1.1104	1.231	0.902	03740

**Source:** Author's Compilation (2025).

Foreign portfolio investment (FPI) flows in Nigeria, the analysis presented by the regression model reveals some significant dynamics of financial development indicators with the FPI in the short run and in the long run. The proxies of financial development that are taken into consideration stock market turnover (STM), market liquidity (MKTLIQ), credit to the private sector (CPS) have varying correlations with FPI.

Both FPI and stock market turnover have a positive relationship in the long run, which has a appearance of 0.0341. It means that a one-unit rise in the turnover in the stock market is linked to the increase of FPI by 0.034 units. Nonetheless, this is not statistically significant (p value of 0.5620) which implies that the impacts of stock-market activity on portfolio flows in Nigeria are not significant. Likewise, market liquidity has a positive correlation with FPI and has a coefficient of 0.0213 (p=0.5870) which is also a minor attraction of the foreign investors, yet not significant. Credit to the private sector (CPS) demonstrates the negative correlation between FPI and credit to the private sector with the coefficient being equal to -0.1754 (p=.4260). This counterintuitive finding can be an indication that an increase in the domestic credit resources allocation need not have a direct positive effect on the inflows of foreign portfolio. This may represent a situation where in Nigeria, the growth of money available in local markets as credit flows to local investors or priority areas and in the process, this makes FPI less attractive in the equity markets.

Interest-rate differential (INTDIFF) has 0.0568 in Macroeconomic controls, exchange rate (EXR) 0.000613, GDP 0.003632, and inflation (INF) 0.02423 have positive coefficients but none of these controls attain statistically significant values. This means that, in the long-term these variables have a limited implication to FPI, which is in line with the realities in the Nigerian context where foreign investors tend to be more market stability and risk averse than merely by fluctuations in the macroeconomic variables.

The coefficients of ECT (CointEq (-1)) are -0.2319 (p=0.3072) which means that FPI would revert to long-run equilibrium with an approximation rate of 23.2 percent per period after a shock. The accommodation process, however, is not healthy, which indicates the comparative lack of integration of the financial markets of Nigeria with the international portfolio flows. TMF and short-term disequilibria due to shocks in the STM, MKTLIQ, CPS, EXR, GDP, INF, and INTDIFF will thus be wiped out gradually.

The past-period credit expansion (CPS (-1)) is a significant and positive influence on FPI with a concurrent coefficient of 0.0524 (p= 0.0185), and it indicates that the credit growth in the previous periods will invite the current period inflows of the foreign portfolio. Interest rate differentials have a positive contemporary (0.0105, p= 0.0525) and negative lagged effect ( -0.0158, p= 0.0160) which implies that favorable interest rate spreads in the first period is an attractant to FPI but is offset by adverse spreads in the later periods. Other short-run impacts of STM, MKTLIQ, EXR, GDP and INF, are weak and not significant.

Generally, both STM and MKTLIQ have a positive relationship in both long-term forecasts with FPI as opposed to negative relationships with the CPS. Such associations are however not statistically significant meaning that the financial development and the macroeconomic factors in Nigeria have only a moderate and subtle impact on foreign portfolio investments flows. According to the short run dynamics, the expansions of credits in the past and the differentials in interest rates are central to it thus indicating the sensitiveness of the FPI to local liquidity and yield incentives in the financial markets of Nigeria.

### Diagnostic Test

These diagnostic test requirements assess the validity and reliability of the foreign portfolio investment model testing for the interplay between financial development and foreign portfolio investment in Nigeria.

**Table 4. Diagnostic Test Result**

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	3.295922	Prob. F(2,25)	0.1034
Obs*R-squared	7.302978	Prob. Chi-Square(2)	0.0516

**Source:** Author’s Compilation (2025).

Breusch-godfrey Serial-correlation LM test measures the correlation between the error terms of series of observations or satisfies the assumption of no autocorrelation. The F statistic of 3.295922 which has a probability of 0.1034 implies that one should not reject the null hypothesis of no serial correlation. Similarly, Obs -R 2 of 7.302978 at the probability value of 0.0516 does not show any significant autocorrelation in the present model. These results verify the randomness of the error

terms and pointless systematic behaviour over time, which is the critical attribute of the valid statistical inference. In its turn, this means that the errors and the testing of hypotheses in the regression model analyzing foreign portfolio investment and financial development in Nigeria are accurate and unbiased since serial correlation does not permeate the errors.

**Table 5. Diagnostic Test Result**

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.42429	Prob. F(7,27)	0.8785
Obs*R-squared	3.468501	Prob. Chi-Square(7)	0.8386
Scaled explained SS	2.075972	Prob. Chi-Square(7)	0.9555

**Source:** Author's Compilation (2025).

The Breusch-godfrey Serial-Correlation LM test shows that the F-statistic of 3.295922 ( $p = 0.1034$ ) and the observed  $R^2$  is 7.302978 ( $p = 0.0516$ ). Such  $p$ -values show means that the residuals of the model are not significantly correlated in serial and therefore prove the assumption of independence of the error terms. The results of the Breusch-Pagan-Godfrey test of heteroskedasticity gave F-statistic, equal to 0.42429 ( $p = 0.8785$ ), observed  $R^2$  is equal to 3.468501 ( $p = 0.8386$ ) and scaled explained SS is equal to 2.075972 ( $p = 0.9555$ ). The  $p$ -values are well above the traditional levels of significance and thus, they prove that the null hypothesis of homoskedasticity is true and the error terms remain constant.

The projection of relations between foreign portfolio investment and financial development proxies, stock market capitalization (STM), market liquidity (MKTLIQ), and credit to the private sector (CPS) among the rest of the macroeconomic determinants are thus trustworthy and impartial. The fact that the model met basic econometric requirements to make a good statistical inference with respect to identifying statistical relationships between the dependent and independent variables enables these diagnostic outcomes to reinforce the validity of the coefficients of the model, as well as, increases confidence in the policy implications of the findings.

## Discussion of Findings

The findings reveal that the indicators of financial development exhibit mixed relationships with foreign portfolio investment (FPI) in Nigeria. Stock market turnover and market liquidity both show positive coefficients in the long run, suggesting that improvements in trading activity and liquidity could theoretically enhance investor confidence. However, these relationships are statistically insignificant, indicating that the depth of the Nigerian capital market has not yet reached a level where it strongly influences portfolio flows. This outcome aligns with earlier studies that emphasise the limited role of market activity in attracting foreign investment when structural weaknesses persist.

Credit to the private sector demonstrates a negative long-run association with FPI, which is contrary to expectations. This suggests that an increase in domestic credit allocation does not necessarily translate into higher foreign portfolio inflows. One possible explanation is that expanded credit availability may reduce the relative attractiveness of equity markets to foreign investors, as local investors gain access to alternative financing sources. This finding highlights the complexity of interactions between domestic liquidity conditions and external capital flows.

Among the macroeconomic controls, interest-rate differentials, exchange-rate volatility, GDP growth, and inflation all display positive coefficients in the long run, but none are statistically significant. This implies that foreign investors in Nigeria are less influenced by short-term macroeconomic fluctuations and more concerned with structural stability and risk management. The error correction term indicates that deviations from long-run equilibrium are corrected at a slow pace, reflecting weak integration between Nigeria's financial markets and global portfolio flows.

Short-run dynamics present a different picture. Past credit expansion exerts a significant positive effect on current FPI inflows, suggesting that liquidity conditions in previous periods create favourable expectations for foreign investors. Interest-rate differentials also show a positive contemporaneous effect but a negative lagged effect, indicating that while favourable spreads initially attract inflows, subsequent adjustments may discourage sustained participation. Other short-run effects of stock market turnover, liquidity, and macroeconomic variables remain weak and insignificant.

Overall, the results suggest that financial development and macroeconomic factors exert only a modest influence on FPI in Nigeria. While structural indicators such as market turnover and liquidity are important, they lack the strength to significantly drive portfolio flows under current conditions. Instead, short-term factors such as credit expansion and interest-rate incentives appear more influential, underscoring the sensitivity of FPI to liquidity and yield conditions rather than to long-term market fundamentals. These findings reinforce the need for policies that enhance market depth, improve institutional quality, and stabilise macroeconomic conditions to attract sustainable foreign portfolio investment.

## CONCLUSION AND RECOMMENDATIONS

The study shows that financial development indicators such as stock market turnover and market liquidity have positive long-run relationships with foreign portfolio investment (FPI) in Nigeria, but these effects are statistically insignificant. This suggests that the depth and liquidity of Nigeria's capital market have not reached a level that strongly influences portfolio flows, which is consistent with previous findings that structural weaknesses limit the impact of market activity on foreign investment (Osuka et al., 2022). Credit to the private sector demonstrates a negative long-run association with FPI, indicating that increased domestic credit allocation does not necessarily attract foreign portfolio inflows. This outcome may reflect a situation where expanded local credit reduces reliance on foreign capital, as noted in similar studies (Alalade & Oliyide, 2024).

Macroeconomic variables such as interest-rate differentials, exchange-rate volatility, GDP growth, and inflation also exhibit weak and insignificant long-run effects on FPI. This implies that foreign investors are less influenced by short-term macroeconomic fluctuations and more concerned with structural stability and institutional quality (Chukwunweike et al., 2023). The error correction term suggests slow adjustment toward equilibrium, reinforcing the limited integration of Nigeria's financial markets with global portfolio flows.

Short-run dynamics provide more meaningful insights. Lagged credit expansion has a significant positive effect on FPI, indicating that improvements in domestic liquidity create favourable conditions for foreign investors. Interest-rate differentials show a positive contemporaneous effect and a negative lagged effect, suggesting that while favourable spreads initially attract

Mustapha, A., Giwa, O. K. & Moronfoye, A. (2025). Financial Development and Foreign Portfolio Investment in Nigeria. *Malete Journal of Accounting and Finance*, 6 (1), 249 – 265

inflows, prolonged high rates may signal economic stress and lead to withdrawals. These findings align with evidence that interest-rate incentives and liquidity conditions are key short-term drivers of portfolio flows in Nigeria (Karimo, 2021; Vanguard, 2024).

Based on these findings, policy recommendations should focus on strengthening domestic credit markets and improving interest-rate management rather than relying on persistently high rates. Efforts to deepen market infrastructure and enhance transparency are essential for building investor confidence over time. Broader institutional improvements, including consistent regulatory frameworks and better governance, will have a more sustainable impact on portfolio flows than short-term macroeconomic adjustments. Exchange-rate stability and credible inflation-targeting frameworks should complement these measures to reduce uncertainty and support gradual integration of Nigeria's financial markets with global portfolio systems.

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