

Capital Inflows, Institutional Quality and Stock Market Turnover Ratio in Nigeria

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Abstract

Nigeria has experienced significant strides in financial market development over recent decades, however, challenges such as regulatory inefficiencies, infrastructure gaps and economic uncertainty persist, impacting market liquidity and investor confidence. This study examined the effect of capital inflows and institutional quality on stock market turnover ratio (SMTR) in Nigeria from 1994 to 2023. Error Correction Modelling and Dynamic Ordinary Least Square were the estimation techniques and inferences were made at 5% significant level. The findings revealed that diaspora remittances (LDSRE) and institutional quality (INQT) negatively and significantly impact SMTR, Foreign portfolio investment (LNFPI) shows an insignificant negative effect on SMTR. Conversely, foreign aid (LFNAD) and foreign direct investment (LFDI) have significant positive effect on SMTR. Based on the findings of this study, it is recommended that efforts should be made to implement institutional reforms and encourage the use of capital inflows for productive and market-related investments.

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Background to the Study

There is agreement on the relationship between financial market development and economic performance. According to various economists, the degree of financial market development is strongly related to the mobilisation of funds and their allocation to high-yield initiatives that promote economic growth and competitiveness (Hallas et al., 2021; Islam et al., 2020; Challe et al., 2019). Foreign financial institutions established branches in the domestic economy as a result of capital inflows, promoting healthy financial competition among domestic institutions and increasing pressure on domestic banking institutions to implement policy reforms capable of improving efficiency and competitiveness on a global scale (Muye & Muye, 2017).

consequently, foreign inflows have been an essential channel for raising the visibility of local financial institutions to international levels. The Structural Adjustment Program (SAP), implemented in 1986, integrated Nigeria's financial sector into the global financial framework. Prior to 1986, the Nigerian financial industry witnessed rapid expansion, with the number of banking institutions rising from 12 at independence to 40 in 1986. The majority of these financial institutions were government-owned (Ikhide, 1996). With the drop of oil prices in the early 1980s and the subsequent decline in oil revenue, the government was unable to support government-owned banks, resulting in weak capitalisation and liquidity issues that put the financial system in jeopardy. To solve the financial crisis, the government liberalised the banking industry by reducing its ownership share, while also encouraging private investment. In addition, as part of the liberalisation framework, the government deregulated interest rates and eliminated currency rate controls. This was important to guarantee financial system competitiveness and allow for optimal pricing of market instruments based on demand and supply.

Despite the aforementioned policy measures, the Nigerian financial industry has a high lending rate, which is associated with a limited volume of credit granted to the private sector by banks. Furthermore, the capital market's growth has been insufficient when compared to other stock markets throughout the world. For example, Dorothy (2024) stated that as of May 2023, the market capitalisation of the Nigerian stock exchange was USD\$66.7 billion, the New York Stock Exchange (NYSE) in the United States of America was valued at US\$24.3 trillion, the Shanghai Stock Exchange in China was valued at USD\$6.93 trillion, the Japan Exchange Group was valued at USD\$5.63 trillion, and the Johannesburg Stock Exchange in South Africa was valued at USD\$1.01 trillion.

Nigeria represents a compelling case study within the context of developing economies. As one of Africa's largest economies and most populous, Nigeria has experienced significant strides in financial market development over recent decades as the country's financial market has seen increased market capitalization and trading activities (Adegbe et al., 2023; Adekunle, 2018). However, challenges such as regulatory inefficiencies, infrastructure gaps, and economic uncertainty persist, impacting market liquidity and investor confidence, due to absence of wide array of financial instruments, narrow scope of the market, government dominance, sluggish expansion of the secondary market,

asymmetry and information gaps (Bello et al., 2020; Okoh et al., 2020; Adesina-Uthman, 2020). The banking industry faces several challenges, including technological advancements, huge inflow of foreign portfolio that are volatile and reversible and a high rate of fraud that impedes banks' financial performance. The lacklustre performance of Nigeria's financial system in the face of rising capital inflows has highlighted key research problems, some of which this study seeks to answer. This study is structured into five sections, this includes the introduction, literature review, methodology, results, and conclusion and recommendations.

Literature Review

Conceptual Review

Stock Market Turnover Ratio

The stock market turnover ratio serves as a reference index for market liquidity ratings and transaction cost ratios. This ratio is equal to the total value of stock exchange traded shares divided by market capitalisation. It is also defined as the market capitalisation divided by the value of the stock market's listed securities (Okafor, 2023). It also indicates the magnitude of the stock market in terms of the number of securities transactions. Turnover compares trade to the size of the stock market. Turnover ratios are used to compare market liquidity ratings and transaction costs. This ratio is equal to the total value of shares traded on the stock market divided by market capitalisation. Bonga and Sithole (2019), who studied stock market development focusing on capital market trends, revealed that an increase in market shares of the firm through the sale of shares increases the firm's capital base and encourages expansion. Turnover indicates the number of shares traded in the market at a given price. Variations in company share price may negatively or positively affect a firm's performance (Abina & Lemea, 2019).

According to Odey et al. (2023) this ratio measures how often shares change hands. Turnover ratio is the value of domestic shares traded divided by their market capitalization. The turnover ratio of a stock is therefore a measure of sellers versus buyers of a particular stock. The value is annualized by multiplying the monthly average by 12. The higher the stock turnover ratio, the more liquid the stock is and vice versa. Turnover Ratio (TOVR): This is a measure of stock market development measuring stock trading relative to the size of the stock market and is used as an index of comparison for market liquidity rating and level of transaction costs. The ratio is computed as:

$$\frac{\text{Total value of shares traded}}{\text{Stock market capitalization}}$$

Capital inflows such as foreign direct investment, portfolio investment, concessional loans, or grants are also seen as a lubricant factor for development process in emerging economies of the world. One of the major aims of any foreign investment is to contribute and transform the economic welfare of the recipient individual of the Nation (Obalade & Obisesan, 2015). Capital inflows have become an important source of additional resources to help spur development (Phimmavong, 2017). Capital inflows such as aid could be used

to fund social and economic projects (Martins, 2011), while remittances could directly increase the rate of capital stock available to a household for investment purposes, thereby relaxing credit constraints of the household. Djalab and Said (2023) opined that several studies have used various terms to explain capital inflow: external capital all these terms describe capital flows from abroad into the local economy for productive purposes. Capital inflow is the influx of external resources into the local of capital resources for the purposes of investment, trade and business production. According to Panagiotis (2015), attracting capital from overseas increases local capital, which is typically insufficient in emerging countries. Thus, the link between capital and growth can be gained by developing countries when they engage in encouraging and sourcing capital abroad. Sources of these capitals can be from foreign direct investment which in this study includes foreign portfolio investment, official development assistance, remittances and even external debt stock (Guenouni & Ameer, 2020).

Capital Inflows

The movement of money into a nation for the purpose of commerce, investment, or business activities is referred to as international capital inflows according to Chiamaka et al (2023). These include the movement of money within a company in the form of investment capital, capital expenditures for operations, and Research and Development (R&D). The influx of foreign capital resources into a local economy for use in commerce, business, and investment is known as international capital inflows. Capital inflows such as foreign direct investment, portfolio investment, concessional loans, or grants are also seen as a lubricant factor for development process in emerging economies of the world. One of the major aims of any foreign investment is to contribute and transform the economic welfare of the recipient individual of the Nation (Obalade & Obisesan, 2015). Capital inflows have become an important source of additional resources to help spur development (Phimmavong, 2017). Capital inflows such as aid could be used to fund social and economic projects (Martins, 2011), while remittances could directly increase the rate of capital stock available to a household for investment purposes, thereby relaxing credit constraints of the household.

Institutional Quality

This study conceptualizes institutional quality as those basic tenets that guide the operations of public and other private institutions in order to maximize wealth. These principles are enforced in accordance with the statute that established the organisation, which is usually consistent with globally standards. Yildirim (2015) defines institutions as habits that constrain our activities through norms and organisations established in social life, instruct us on how to behave, and lead social life. The trust factor, which constitutes the informal aspect of society's corporate structure, serves as the foundation for social order, individual life, and economic and political development, with the resulting effects of growing business scales, industrial structure flexibility, and increased social resilience to external shocks. Trust improves the efficacy of the economic and social systems, allowing for increased production (Yildirim & Gokalp, 2016). Institutional quality means a certain degree of transparency, hence building confidence among the investors to put in

their money within the stock market. Among other very important institutional quality drivers, accountability and democratic control influence the stock market (Manasseh et al., 2017). Political uncertainty also plays a significant role in influencing stock prices.

Theoretical Review

The accelerator theory of investment originates from the works of Carver (1903), Aftalion (1909), Bickerdike (1914), and Clark (1917), who established the relationship between capital investment and output. They proposed that companies increase investment in response to excess demand rather than relying on price adjustments. This principle, predating Keynesian economics, suggests that rising demand or income leads to increased investment expenditure to meet production needs (Alan, 2018). The theory assumes that sustained demand for a company's product drives investment in capital goods, resulting in an "accelerator effect," where increased production capacity meets rising demand (Kumar, 2015). However, critics argue that the theory disregards price controls as a demand-regulating mechanism, instead advocating long-term business expansion over short-term price adjustments (Ganti, 2020). The accelerator theory remains relevant in corporate decision-making, emphasizing that stable economic growth and consumption encourage capital investment. However, businesses typically maximize existing capacity before committing to capital projects, ensuring that demand is sustainable before increasing investment.

Empirical Review

Several studies have examined the relationship between capital inflows, institutional quality, and stock market turnover ratio. Ahmad and Ghazi (2017) analyzed stock market indicators at Amman Stock Exchange and found that while trading volume had a statistically significant negative impact on turnover ratio, the number of stocks had a positive effect, with no impact observed from the number of contracts. Using panel Fully Modified Ordinary Least Squares (FMOLS) with data from 1994 to 2014, Tsaurai (2018) explored the role of financial development in economic growth, revealing that foreign aid, in combination with financial development, significantly influenced stock market turnover. Similarly, Kunofiwa and Daniel (2018) found that stock market and banking sector development positively affected FDI inflows when above a certain threshold, while lower levels of development had an insignificant impact. Their study also highlighted mixed effects of private and public bond markets on FDI inflows in emerging markets. In the Nigerian context, Akinyemi et al. (2020) investigated stock market development and FDI inflows from 1981 to 2019, using econometric techniques such as Granger causality and Johansen co-integration tests. Their findings indicated a unidirectional causality between stock market capitalization ratio, turnover ratio, and FDI inflows, while total value of stocks traded ratio exhibited bidirectional causality with FDI inflows. However, the error correction model suggested that stock market indicators had a statistically insignificant impact on FDI inflows.

Gblam and Ekokeme (2020) further examined stock market development and FDI inflows in Nigeria from 1985 to 2018, utilizing the Engle-Granger error correction model.

Their study found that market capitalization and value of deals positively influenced FDI inflows, though only market capitalization was statistically significant. In contrast, the all-share index had a negative but statistically insignificant effect. Expanding the discussion, Adnan et al. (2022) explored the impact of natural resource rents on stock market development, emphasizing the role of institutional quality in managing resource revenues. Their study, spanning 1991 to 2019, applied advanced econometric techniques and found a positive relationship between resource rents and stock market performance, with institutional quality playing a moderating role. Additionally, Dumitrescu-Hurlin Causality analysis revealed bidirectional causality between stock market development and economic growth. Lastly, Odey et al. (2023) examined the relationship between financial indicators and stock market performance in Nigeria, employing econometric techniques such as Autoregressive Distributed Lag (ARDL) modeling. Their findings indicated a long-run relationship among the variables, with market profitability, liquidity, and efficiency positively influencing stock market performance.

Methodology

Research Design

This study employed an ex-post facto research design, as it examines past events using time-series data. The justification for adopting this approach is that it allows researchers to analyse historical occurrences based on established time-series trends (Awoleye, 2022). The study tested the identified variables, focusing on the causal relationship between capital inflows, institutional quality and stock market turnover ratio in Nigeria. Relevant time-series data were sourced from secondary sources, including the Statistical Bulletin of the Central Bank of Nigeria, World Bank Development Indicators (WDI), and the International Monetary Fund's (IMF's) International Financial Statistics (IFS). The study covers a 30-year period, spanning from 1994 to 2023, and examined capital inflows, institutional quality, and stock market turnover ratio in Nigeria.

Model Specification

In order to examine the effect of capital inflows and institutional quality on stock market turnover ratio in Nigeria, the empirical work of Awoleye (2022) was adapted and modified to suit the objective of the study. The Model, which is based on capital inflows, institutional quality and stock market turnover ratio in Nigeria, is specified as follows:

$$SMTR_t = f(DSRE_t, FPI_t, FNAD_t, FDI_t, INQT_t) \dots \dots \dots (1)$$

With institutional factors used as a moderating variable in the model; to complete the specification of the econometric model, we consider the form of algebraic or linear relationship among the variables. The corresponding econometric model is specified in linear form:

$$SMTR_t = \beta_0 + \beta_1 DSRE_t + \beta_2 FPI_t + \beta_3 FNAD_t + \beta_4 FDI_t + \beta_5 INQT_t + \mu_t \dots \dots \dots (2)$$

Where: SMTR = Stock Market Turnover Ratio (SMTR), DSRE = Diaspora Remittances

(DSRE), FPI = Foreign Portfolio Investment (FPI), FNAD = Foreign Aids (FNAD), FDI = Foreign Direct Investments (FDI), INQT = Institutional Quality (INQT)

Since the variables are in different measurements, regressing this nature of the variables leads to the problem of heteroskedasticity, therefore, in order to avoid the issue of heteroskedasticity, the variables will be rescaled into ratio through logging those them, thus the model was re-specified in a log linear form

$$SMTR_t = \beta_0 + \beta_1 \ln DSRE_t + \beta_2 \ln FPI_t + \beta_3 \ln FNAD_t + \beta_4 \ln FDI_t + \beta_5 \ln INQT_t + \mu_t \text{-----}(3)$$

Where:

β_0 = constant or intercept, $\beta_1, \beta_2, \dots, \beta_5$ = regression coefficients, Ln = natural log, μ = Error Term or Residual, subscript t represented the time series.

Measurements of Variables

Table 1: Measurement and source of the Variables

Variables	Abbrev	Measurement	Sources/Adoption
Stock Market Turnover Ratio	SMTR	This measures the total value of shares traded during a period divided by the average market capitalization for the period	Value of shares traded divided by market capitalization
Diaspora Remittances	DSRE	Diaspora Remittances as a percentage of GDP	World Development Indicators (WDI); Xia et al (2022)
Foreign Portfolio Investment	FPI	Portfolio Investments as a percentage of GDP	WDI; Ibarra-Olivo (2021)
Foreign Aids	FNAD	Foreign Aids as a percentage of GDP	WDI; Henok & Kaulihowa (2021)
Foreign Direct Investments	FDI	FDIV as a percentage of GDP	WDI; Arshad et al. (2021)
Institutional Quality	INQT	Principal Component Analysis (PCA) of control of corruption, rule of law, regulatory quality, government effectiveness, political stability, as well as voice and accountability	World Governance Indicator (WGI)

Sources: Researcher's Compilations (2024)

Table 2: Factor Analysis of Institutional Quality Variables

Principal component analysis for institutional quality index. Component	PCA1	PCA2	PCA3	PCA4	PCA5	PCA6
Eigenvalue	4.623374	0.9947	0.198244	0.115153	0.061516	0.007013
Proportion of variance	0.7706	0.1658	0.033	0.0192	0.0103	0.0012
Cumulative Percentage	0.7706	0.9363	0.9694	0.9886	0.9988	1
Variable	Vector 1	Vector 2	Vector 3	Vector 4	Vector 5	Vector 6
PS	-0.038614	0.999194	0.000764	-0.006740	-0.007437	0.004331
GE	0.447462	0.018097	-0.180858	-0.617893	0.618089	-0.053983
VA	0.438210	0.023275	-0.519603	0.690167	0.228274	0.094884
RQ	0.428963	0.019333	0.831514	0.279701	0.213513	0.019508
RL	0.460226	0.016774	-0.066859	-0.078913	-0.495788	-0.728977
CC	0.458738	0.009315	-0.037639	-0.239523	-0.523839	0.675483

Source: Researcher's Compilation using data from World Governance Indicator (WGI)

With the Principal Component Analysis (PCA) result in Table 2, this study generated a composite index for institutional quality. Table 2 presents analyses on institutional quality variables using principal component analysis (PCA). In Table 2, PCA results show six components, with the first component (PCA1) explaining a significant 77.06% of the variance, indicating it captures the majority of the information from the institutional quality variables. The cumulative percentage increases with each component, reaching nearly 100% by the sixth component (PCA6). Variables (PS) stands for Political Stability and Absence of Violence/Terrorism, (GE) for Government Effectiveness, (VA) for Voice and Accountability, (RQ) for Regulatory Quality, (RL) for Rule of Law, and (CC) for Control of Corruption. PS, GE, VA, RQ, RL, and CC load differently across components, with PS strongly loading on the second component (Vector 2), and other variables like GE, VA, RQ, RL, and CC loading more heavily on PCA1, showing distinct patterns of influence across components. These findings suggest that PCA1 holds the highest explanatory power, likely reflecting the core dimensions of institutional quality.

Institutional Quality Score

$$= (-0.0386 \times PS) + (0.4475 \times GE) + (0.4382 \times VA) + (0.4290 \times RQ) + (0.4602 \times RL) + (0.4587 \times CC)$$

The resulting score is the institutional quality index for each observation. Higher values indicate stronger institutional quality, as they reflect higher contributions from the key variables weighted by their importance in PCA1. Institutional quality is the institutional quality index measured as the aggregate value of the orthodox institutional quality measures and the score coefficient of factor analysis component loadings. This procedure is similar to the work of Azam et al. (2021); Sobel (2008).

The variables of the study and their respective descriptions and sources are contained in Table 3.

Estimation Techniques

This section outlines the estimation techniques employed in analyzing the relationship between capital inflow, Institutional quality and financial market development in Nigeria. These techniques include determining the appropriate lag length, conducting unit root tests, performing a bounds test for cointegration, estimating the ARDL model, and conducting diagnostic tests to ensure the reliability and robustness of the results. These tests are discussed below:

Result

Table 3: Descriptive Statistics

	Mean	Maximum	Minimum	Std. Dev.
SMTR	0.053977	0.175219	0.000000	0.038310
FPI	574578.6	5135534.	-1284071	1172753.
FDI	2.72E+09	8.84E+09	-1.87E+08	2.55E+09
FNAD	1.84E+09	1.27E+10	4.236746	2.46E+09
DSRE	1.02E+10	2.43E+10	2424527.	9.88E+09
INQT	-1.60987	0.000000	-2.60767	0.999890

Source: Author's Computation (2024);

Where: Stock Market Turnover Ratio is SMTR,

Foreign Direct Investment is FDI,

Foreign Portfolio Investment is FPI,

Foreign Aids is FNAD,

Diaspora Remittances is DSRE,

Institutional Quality is INQT.

Table 3 presents the descriptive statistics for the variables used in the study over the study period. The Stock Market Turnover Ratio (SMTR) has a mean value of 0.053977, indicating the average efficiency of the stock market in trading activity relative to the market capitalization. The ratio ranges from 0.000000 to 0.175219, with a standard deviation of 0.038310, suggesting moderate variability. Foreign Portfolio Investment (FPI) shows a mean of 574,578.6 billion dollars with high volatility evidenced by a maximum of 5,135,534 and a minimum of -1,284,071, and a standard deviation of 1,172,753. Foreign Direct Investment (FDI) averages at approximately 2.72 billion, with values ranging from -187 million to 8.84 billion and a standard deviation of 2.55 billion, highlighting significant variations in capital inflows. Foreign Aids (FNAD) has a mean value of 1.84 billion, with a maximum of 12.7 billion and a minimum of 4.236746, indicating a standard deviation of 2.46 billion. Diaspora Remittances (DSRE) are substantial, with a mean of 10.2 billion, a maximum of 24.3 billion, and a minimum of 2,424,527, with a high standard deviation of 9.88 billion, demonstrating significant variability. Institutional Quality (INQT) has a negative mean of -1.60987, ranging from -2.60767 to 0.000000, with a standard deviation of

0.999890. This suggests generally low institutional quality during the study period, with some instances of improvement.

Table 4: Multicollinearity

	SMTR	DSRE	LFNAD	LFDI	LNFPPI	INSQ	VIF
SMTR	1						
DSRE	0.385	1					7.0425
LFNAD	0.227	0.822	1				2.5466
LFDI	0.465	0.775	0.739	1			5.3236
LNFPPI	0.343	0.807	0.811	0.728	1		5.0911
INSQ	-0.500	-0.717	-0.428	-0.441	-0.584	1	1.5723
Variance Inflation Factors Mean							4.31522

Source: Author's Computation (2024);
 Where: Stock Market Turnover Ratio is SMTR,
 Foreign Direct Investment is FDI,
 Foreign Portfolio Investment is FPI,
 Foreign Aids is FNAD,
 Diaspora Remittances is DSRE,
 Institutional Quality is INQT.

Table 4 examines the interrelationship between the variables used and the multicollinearity among the independent variables using the correlation matrix and Variance Inflation Factor (VIF). The correlation coefficients reveal the degree of association among the variables, while the VIF values assess the severity of multicollinearity. Multicollinearity becomes problematic when correlation coefficients exceed 0.85 or when VIF values exceed 10, as these indicate that variables may be redundant or overly collinear, which could bias the regression results (Gujarati & Porter, 2009; Wooldridge, 2015). The results from the correlation matrix show that no correlation among the independent variables exceeds 0.85, which suggests that multicollinearity is not excessively high in this dataset. For instance, the highest correlation was observed between Diaspora Remittances (DSRE) and Foreign Aids (LFNAD) (0.822), which is below the threshold. Similarly, other correlations, such as between M3GDPIN and DSRE (0.734), and between LFNAD and Foreign Portfolio Investment (LNFPPI) (0.811), remain below the critical limit, indicating acceptable levels of interdependence.

Regarding the VIF values, none of the variables exceed the threshold of 10. The highest VIF is for DSRE (7.0425), followed by Foreign Direct Investment (LFDI) (5.3236) and Foreign Portfolio Investment (LNFPPI) (5.0911). These values are below the critical limit, indicating that multicollinearity is not a significant concern in the analysis. The mean VIF value of 4.31522 further supports this conclusion, as it remains within an acceptable range. From a theoretical perspective, the acceptable levels of multicollinearity in this study align with the guidelines provided by Greene (2018), who suggests that while moderate multicollinearity is often unavoidable in economic data, it does not necessarily compromise the validity of the regression results as long as VIF values remain below 10.

Table 5: Stationarity Test

	Augmented Dickey-Fuller test			Phillips-Perron Test			ADF	PPT
	Level	First Diff.	Critical	level	First Diff.	Critical		
SMTR	-2.2750	-8.3082	-2.9434	-2.2751	-8.7128	-2.9458	I(1)	I(1)
DSRE	-2.0919	-6.7981	-2.9434	-2.7686	-6.7981	-2.9458	I(1)	I(1)
LFNAD	-1.2291	-6.0820	-2.9434	-1.4068	-8.3088	-2.9458	I(1)	I(1)
LFDI	-1.7467	-9.0525	-2.9434	-2.6544	-9.0599	-2.9458	I(1)	I(1)
LNFPPI	-0.7349	-7.0659	-2.9434	-1.9291	-12.731	-2.9458	I(1)	I(1)
INSQ	-1.8620	-6.1605	-2.9434	-1.8620	-6.1607	-2.9458	I(1)	I(1)

Source: Author's Computation (2024);
Where: Stock Market Turnover Ratio is SMTR,
Foreign Direct Investment is FDI,
Foreign Portfolio Investment is FPI,
Foreign Aids is FNAD,
Diaspora Remittances is DSRE,
Institutional Quality is INQT.

Table 5 presents the results of unit root tests using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) methods to assess the stationarity of the variables. At their levels, the test statistics for all variables fail to exceed the critical values at a 5% significance level, indicating the presence of unit roots and non-stationarity. However, after first differencing, all variables become stationary as their test statistics surpass the critical values. This confirms that the variables are integrated of order one, I(1). These results highlight the appropriateness of difference-based models to mitigate the non-stationarity issues in the dataset.

Estimation test on capital inflows and institutional quality on stock market turnover ratio

Table 6: Johanssen Cointegration Test capital inflows and institutional quality on stock market turnover ratio

Hypothesized	Trace Statistics		Max-Eigen Statistics	
	No. of CE(s)	Statistic	Critical Value	Prob.**
None *	124.2440	95.75366	58.84201	40.07757
At most 1	65.40197	69.81889	26.19748	33.87687
At most 2	39.20450	47.85613	13.74988	27.58434
At most 3	25.45462	29.79707	12.32375	21.13162
At most 4	13.13087	15.49471	10.19958	14.26460
At most 5	2.931290	3.841465	2.931290	3.841465

Source: Author's Computation (2024);
Where: Stock Market Turnover Ratio is SMTR,
Foreign Direct Investment is FDI,

Foreign Portfolio Investment is FPI,
 Foreign Aids is FNAD,
 Diaspora Remittances is DSRE,
 Institutional Quality is INQT.

The Johansen cointegration test results in Table 6 reveal a long-term equilibrium relationship between capital inflows, institutional quality, and the stock market turnover ratio in Nigeria. The trace statistic and max-eigen statistic for the null hypothesis of "no cointegration" are 124.2440 and 58.84201, respectively, which exceed their critical values (95.75366 and 40.07757) at a 5% significance level, with corresponding probabilities indicating statistical significance. This confirms the presence of at least one cointegrating equation among the variables, suggesting that capital inflows and institutional quality jointly influence stock market turnover ratio in the long run. The presence of cointegration among the variables necessitates further analysis using an Error Correction Model (ECM) to evaluate the short-run dynamics and the speed of adjustment toward long-run equilibrium (Engle & Granger, 1987).

Table 7: Error Correction Modelling and Short Run Estimates on capital inflows and institutional quality on stock market turnover ratio

Dependent Variable: D(SMTR)				
Panel A: Short Run Estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob
ECT(-1)	-0.008634	0.003736	-2.310964	0.0287
D(SMTR(-1))	-0.307282	0.160437	-1.915279	0.0661
D(LDSRE(-1))	0.020807	0.008713	2.388034	0.0242
D(LNFPI(-1))	0.007978	0.002723	2.929661	0.0068
D(LFNAD(-1))	-0.035954	0.008492	-4.233930	0.0002
D(LFDI(-1))	-0.010850	0.007673	-1.414064	0.1688
D(INQT(-1))	0.002123	0.009374	0.226471	0.8225
C	-0.004525	0.004408	-1.026419	0.3138
Panel C: Diagnostic Tests		Statistics	Prob.	
R-squared		0.516330	-	
Adjusted R-squared		0.373021	-	
F-statistic		3.6029	0.0057	

Source: Author's Computation (2024);
 Where: Stock Market Turnover Ratio is SMTR,
 Foreign Direct Investment is FDI,
 Foreign Portfolio Investment is FPI,
 Foreign Aids is FNAD,
 Diaspora Remittances is DSRE,
 Institutional Quality is INQT.

Table 7 present the error correction model (ECM) to assesses the short-run dynamics between capital inflows, institutional quality, and the stock market turnover ratio (SMTR)

in Nigeria. The error correction term (ECT) is significant and negative, with a coefficient of -0.008634 (p-value = 0.0287), indicating that any short-term disequilibrium in the relationship among the variables is corrected at the rate of approximately 0.86% per period. This suggests that the model adjusts to the long-run equilibrium gradually when deviations occur.

In the short-run estimates, the diaspora remittances (D(LDSRE(-1))) positively influences SMTR, with a coefficient of 0.020807 and a p-value of 0.0242, suggesting that increases in diaspora remittances are associated with higher stock market activity of 0.02%. Similarly, foreign portfolio investment (D(LNFPI(-1))) is positively significant (coefficient = 0.007978, p-value = 0.0068), highlighting that 0.008% increase in SMTR is associated with a unit increase in foreign portfolio investment. Conversely, foreign aid (D(LFNAD(-1))) negatively and significantly impacts SMTR (coefficient = -0.035954, p-value = 0.0002), which depicts that a decrease of 0.0360% of SMTR reflect on a unit increase in foreign aids, possibly reflecting inefficiencies or distortions associated with foreign aid utilization. Foreign direct investment (D(LFDI(-1))) and institutional quality (D(INQT(-1))), are not statistically significant, indicating a weaker or negligible short-term effect on SMTR during the study period.

Table 8: Dynamic Ordinary Least Square

Panel B: Long Run Estimates				
Dependent Variable: SMTR				
Variable	Coefficient	Std. Error	t-Statistic	Prob
LDSRE	-0.019075	0.005209	-3.661998	0.0029
LNFPI	-0.012882	0.007014	-1.836570	0.0892
LFNAD	0.030128	0.011037	2.729804	0.0172
LFDI	0.045975	0.005901	7.790714	0.0000
INQT	-0.052010	0.007928	-6.560222	0.0000
C	-1.082085	0.190241	-5.687976	0.0001
Panel C: Diagnostic Tests		Statistics	Prob.	
R-squared		0.516330	-	
Adjusted R-squared		0.373021	-	
F-statistic		3.6029	0.0057	

Source: Author's Computation (2024);
 Where: Stock Market Turnover Ratio is SMTR,
 Foreign Direct Investment is FDI,
 Foreign Portfolio Investment is FPI,
 Foreign Aids is FNAD,
 Diaspora Remittances is DSRE,
 Institutional Quality is INQT.

Table 8 presented the long-run relationship between the capital inflows, institutional quality and stock market turnover ratio in Nigeria. The estimated analysis was assessed

using the Dynamic Ordinary Least Squares (DOLS) method. The result depicts that Diaspora remittances (LDSRE) have a significant negative effect on stock market turnover ratio (SMTR), with a coefficient of -0.019075 (p-value = 0.0029). This suggests that higher remittances do not contribute to increasing market turnover, potentially reflecting remittance allocation toward consumption or non-market investments. Similarly, institutional quality (INQT) negatively and significantly influences SMTR (coefficient = -0.052010, p-value = 0.0000), indicating that any increase in institutional quality result in a decrease of 0.0520 in SMTR. Foreign portfolio investment (LNFPI) has a negative but marginally significant relationship with SMTR (coefficient = -0.012882, p-value = 0.0892).

On the other hand, foreign aid (LFNAD) exhibits significant positive effect on SMTR (coefficient = 0.030128, p-value = 0.0172) suggests that a unit increase in LFNAD brings about 0.0301 increase in SMTR. Foreign direct investment (LFDI) exhibits significant positive effect on SMTR (coefficient = 0.045975, p-value = 0.0000) which depicts that an increase in LFDI strongly increase SMTR by 0.0460 %. The adjusted R-squared value of 0.3730, indicating that the model explains approximately 37.30% of the variation in SMTR. The F-statistic (3.6029, p-value = 0.0057) confirms the overall significance of the model, indicating that the independent variables collectively have a statistically significant impact on SMTR in the long run. Hence, therefore, the null hypothesis is rejected, and the study concludes that there is significant effect of capital inflows and institutional quality on stock market turnover ratio in Nigeria

Table 9: Diagnostics Test

Serial Correlation LM Test	0.1646	0.8491
Heteroskedasticity Test:	0.5472	0.8607
Normality Test	2.2506	0.3245

The diagnostic tests in Table 9 evaluate the validity and reliability of the regression model. The Serial Correlation LM Test yields a p-value of 0.8491, indicating no evidence of serial correlation in the model. This implies that the residuals are independent over time, satisfying a key assumption of regression analysis and ensuring that the model predictions are not biased by autocorrelation. The Heteroskedasticity Test produces a p-value of 0.8607, signifying the absence of heteroskedasticity. This confirms that the variance of the error terms is constant across observations, a necessary condition for unbiased and efficient parameter estimates. Additionally, the Normality Test provides a p-value of 0.3245, indicating that the residuals are normally distributed. This is critical for the validity of hypothesis testing, ensuring that the statistical inferences made from the model are reliable.

Conclusion and Recommendations

This study examined the relationship between capital inflows, institutional quality, and stock market turnover ratio in Nigeria from 1994 to 2023. Both Error Correction Modelling

and Dynamic Ordinary Least Square were the estimation techniques and the inferences were made at 5% significant level. The findings reveal that diaspora remittances (LDSRE) and institutional quality (INQT) negatively and significantly impact stock market turnover ratio (SMTR), depicting that remittances are often directed toward non-market investments, while institutional improvements may not immediately enhance market turnover. Foreign portfolio investment (LNFPI) shows an insignificant negative effect on SMTR. Conversely, foreign aid (LFNAD) and foreign direct investment (LFDI) have significant positive effects on SMTR. The study's findings on the stock market turnover ratio (SMTR) reveal both similarities and contrasts with prior empirical studies. With diaspora remittances (LDSRE), the significant negative effect on SMTR aligns with Akinyemi et al. (2020), who found that turnover ratios and other stock market indicators negatively influenced foreign direct investment (FDI) inflows. This suggests that remittances, like turnover ratios, may be directed toward consumption or non-market investments, limiting their impact on stock market activity. Similarly, this finding reflects broader concerns about the inefficient allocation of diaspora funds in enhancing financial market activities.

The positive effect of foreign aid (LFNAD) on SMTR corresponds with the findings of Tsaurai (2018), who highlighted the complementary relationship between foreign aid and financial market development. Both studies emphasize that well-managed foreign aid can contribute positively to stock market activities and economic growth. These results reinforce the notion that capital inflows in the form of aid, when effectively utilized, can boost market liquidity and turnover. The study also reveals a significant positive relationship between foreign direct investment (FDI) and SMTR, a result that resonates with the findings of Kunofiwa and Daniel (2018) as well as Gbalam and Ekokeme (2020). Both studies emphasize the critical role of stock market and banking sector development in attracting and benefiting from FDI. This alignment underscores the transformative impact of FDI in fostering investor confidence, enhancing market capitalization, and stimulating long-term stock market growth.

However, the findings diverge significantly in some areas. The negative effect of institutional quality (INQT) on SMTR contrasts sharply with Adnan et al. (2022), who found that institutional quality positively moderates the impact of resource rents on stock market development. While Adnan et al. (2022) emphasized the enabling role of institutional quality in enhancing market performance, the current study suggests that improvements in institutional quality may not immediately translate into higher market turnover. This discrepancy reflects differences in the scope of institutional reforms, or the time lag required for their effects to materialize. Additionally, the findings reflect mixed effects that are partially consistent with Ahmad and Ghazi (2017), whose study revealed a negative impact of trading volume on turnover but a positive impact of the number of stocks on turnover. While the specific indicators differ, both studies underscore the nuanced and varied relationships between market dynamics and turnover ratios.

Based on the findings of this study, it is recommended that efforts should be made to encourage the use of diaspora remittances for productive and market-related investments. Financial literacy programs, tax incentives, and investment schemes could redirect remittances from consumption or non-market uses toward enhancing the stock market turnover ratio (SMTR) and stock market capitalization ratio (SMCR).

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