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# Effect of Inward Capital Flows on Financial Stability in Nigeria

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## ABSTRACT

Capital inflows could thwart monetary policies by stimulating reckless lending and asset bubbles, resulting in financial instability. This study examines the effect of inward capital flows on financial stability in Nigeria, spanning over 2003 to 2019. The hypotheses were tested using Error Correction Mechanism (ECM). The findings indicate that the short runs deviations will adjust to their long-run equilibrium by 10.9% quarterly. The findings show that inward FDI and inward portfolio investment have a positive effect on Nigeria's financial stability, while other capital flows do not have a significant effect on Nigeria's financial stability. Also, the analysis shows that controlling for macroeconomic factors such as GDP and inflation rate significantly affects Nigeria's financial stability. Based on the findings, the study recommends that monetary authorities need to adopt and promote economic policies to increase FDI and entice portfolio investment with rewards such as better economic freedom and lower taxation to boost the country's economy.

**Keywords:** inward capital flows; financial stability; inward foreign direct investment; inward portfolio investment

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## INTRODUCTION

Financial stability has become a policy objective for many central banks as well as a topic of discussion for policymakers and academics. The increased focus on financial stability comes from the consequences of various financial crises worldwide. Financial stability has become one of the most fascinating issues in contemporary economies due to the growing integration of international financial markets, the globalisation of financial institutions, and the interconnection of entire financial systems.

Financial stability is the absence of system-wide crises in the financial system. In other words, financial stability refers to the ability of financial systems to withstand stress. In periods of financial instability, financial institutions such as commercial banks are reluctant to finance viable projects, leading to a fall in the intrinsic value of assets, thereby affecting confidence in the financial system. This can result

in bank runs, rising inflation rates, or stock market crashes (World Bank Group, 2020).<sup>1</sup>

Globalisation has fostered nations' financial integration, as demonstrated by capital flows from one nation to another [1]. These capital flows have a significant role in an economy's financial stability. The 2008 Global Financial Crisis (GFC) showed that unexpected changes in capital flows could disrupt financial stability. The financial system's inability to absorb these shocks and prevent disruptive tendencies could lead to crises. This has raised intense debate among policymakers, researchers, and other stakeholders as regards restraints on free capital flows around countries.

This study's motivation is that the effect of inward capital flows on Nigeria's financial stability

<sup>1</sup> World Bank Group (2020). Global Financial Development Report. World Bank, Washington. URL: <https://www.worldbank.org/en/publication/gfdr/gfdr-2016/background/financial-stability> (accessed on 29.06.2024).

has gained interest for its potential benefits and consequences. Inward capital flows such as inward portfolio investment, inward Foreign Direct Investment (FDI) and other capital flows, if not correctly managed, could be a double-edged sword accompanied by fluctuations, thereby distorting the financial system.

This study examines the effect of various forms of inward capital flows on financial stability in Nigeria. Prior studies on capital flows focused on the nexus between capital flows and economic growth. For example, I. Alley focused on the impact of capital flows and economic growth in Sub-Sahara Africa [2]. O. O. Adeola [3] concentrated on capital flows on South Africa, Nigeria, Kenya and Mauritius economic growth. In Nigeria, studies such as [4] studied the effect of capital flows on Nigeria's economic growth. Also, other studies on financial stability focused on the factors affecting financial stability [5–7].

Also, prior empirical studies on capital flows and financial stability did not disaggregate capital flows. For example, [8] focused on inward FDI. This study also extends the existing literature on capital flows and financial stability by exploring other forms of capital flows. Therefore, this study fills the existing gaps by exploring the effect of inward capital flows on Nigeria's financial stability. This study is structured into five sections. Following this introduction, the paper reviews components of capital flows, financial stability, and the theoretical framework in Section 2. Methodological issues, including estimation techniques and model specifications, were presented in Section 3. Section 4 presents the econometric estimates, while Section 5 concludes and presents policy recommendations.

## CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

### Conceptual Review

Financial stability has no single consensus definition that is widely accepted. Scholars and apex banks worldwide have defined financial stability in different forms. Financial stability is described by the European Central Bank<sup>2</sup> as the ability of the financial system, which includes

financial intermediaries, and market infrastructure, to resist shocks and the unraveling of financial imbalances. This concept emphasizes the financial system's ability to minimize the risk of structural disturbances in the financial intermediation process, serious enough to trigger a material contraction in real economic activity. The Central Bank of Nigeria<sup>3</sup> the country's apex bank, defines financial stability as the financial system's resilience to unanticipated adverse shocks while allowing the financial system's intermediation mechanism to continue smoothly. This definition stresses the ability of the financial system to cushion all forms of instability while maintaining the intermediation process. However, the definition does not explain how these shocks or instability can affect the financial system and the real economy. More so, the definition failed to state what constitutes the financial system.

Financial stability includes the risk of widespread disruption in providing financial services, the quality of those services continuously, and allowing policymakers to recognise areas where policy interventions could improve efficiency and reduce systemic risk [9]. This definition sees financial stability beyond systemic risk and emphasizes the efficiency of the operations of the financial system.

This study uses the ratio of non-performing loans to total loans as a proxy for financial stability. Non-Performing Loans (NPL) are loans in which the contractual payments are delinquent, that is, overdue for more than a specified period. Non-performing loans to total loans capture the liquidity risk exposure by considering the discrepancy between liabilities and assets [10]. When left unsolved, NPL can compound into a financial crisis when these loans exceed bank capital in a relatively large number of banks. Prior empirical studies have linked non-performing loans to financial instability [1, 11–15]. These studies concluded that NPL indicates the beginning of financial crises, which adversely affect the economy's growth by reducing credit growth. Thus, this study will be aligned with the philosophies of [1, 12–14]. Therefore, financial stability will be proxied by non-performing loans.

<sup>2</sup> European Central Bank (2019). Financial stability review November 2019 URL: <https://www.ecb.europa.eu/pub/financial-stability/fsr/html/index.en.html> (accessed on 29.06.2024).

<sup>3</sup> Central Bank of Nigeria (2013). Financial stability report, Central Bank of Nigeria.

This study defines inward FDI in line with the definition the OECD<sup>4</sup> put forward, which described it as a resident entity's cross-border investment in another economy to acquire a long-term interest in a company in that economy. The word "lasting interest" refers to a long-term link between the direct investor and the company, and the direct investor's considerable control over the company's management. The basic condition is that the investor must own at least 10 percent of the voting power, representing their control. Inward FDI is essential to globalisation, as it promotes technology transition, jobs, competitiveness, and economic development.

This study views inward portfolio investment as a component of international capital flows involving the transfer of financial assets, which includes cash, promissory notes, equity shares, debentures, bonds, and money market instruments like treasury bills, negotiable deposits, commercial papers, and bankers' acceptances issued in a domestic market to foreigners in search of profit. It involves holding transferable securities that are either issued or guaranteed by the importing country's government. Other capital flows are short-term debt flows between residents and non-residents, including loans, deposits, trade credits, counterpart-to-value adjustments, exceptional financing, net errors and omissions.

In modeling capital flows and financial stability, controlling for macroeconomic factors significantly affects financial stability. Financial systems are prone to boom and burst, destabilising the real economy. In the paper [15] they found that the effect of the effect of capital flows on financial stability varies substantially across countries and, interestingly, across various flows after controlling for macroeconomic factors. They revealed that the variation is both in magnitude and in the in the signs of the coefficients. Gross Domestic Product (GDP) and inflation rate were used as control variables in this analysis.

GDP growth positively affects capital flows because it directly affects the investment's expected revenue. GDP is a proxy for economic growth, which is also referred to as a market size. The inflation rate,

on the other hand, impedes the financial system's ability to function effectively. Inflation targeting adoption on banking system resilience and capital inflows is significant and positive [16]. On the contrary, [17] investigated the impact of inflation targeting and financial instability on 104 advanced and developing countries from 1980 to 2017. The GMM estimate shows a positive effect of inflation on financial stability.

## Empirical Review

### *Inward Foreign Direct Investment and Financial Stability*

There is a growing body of empirical research on the link between inward FDI and financial stability. However, their findings are diverse. In the paper [18], a study on 63 countries from 1990 to 2014 concludes that rising FDI increases financial instability by advancing incentives to foreign investors in the country.

M. Ali and A. Iness [19] used disaggregated inflows for 85 developing countries from 2000 to 2014. The panel data were estimated using a two-step GMM. Findings show that prior to the 2000–2007 crisis, financial stability improved capital inflow in the form of investments in developing countries. Post-crisis (2010–2014), financial stability decreased when more investments moved into the countries. This study emphasised the harmful effect of instabilities in preventing developing countries from benefiting from cross-border flows.

R. Mercado and S. Noviantie [20] used a dataset on bilateral capital flows on 64 advanced and emerging economies from 2000 to 2016. Findings show differences across different types of investments, with direct investment flows more concentrated than others.

On the contrary, [21] found that financial instability negatively impacts inward FDI. In his study of how inward FDI has changed during several financial instabilities in India spanning 1971 to 2015, secondary data were adopted. The variables used include GDP, inflation rate, inward FDI, and financial stability. Using causality, cointegration, and VECM, he showed that inward FDI in India has been catapulting at 21.56% per year. Also, the study concluded that inward FDI did not cause financial

<sup>4</sup> Organisation for Economic Co-operation and Development, (2008). OECD benchmark definition of foreign direct investment. 4th Edn, OECD Publishing.

instability, but financial stability did cause FDI. The study did not indicate the construct used to proxy financial instability.

Contrary to the above findings, [22] found that financial instability positively affects inward FDI. They examined the potential effect of financial instability, including macroeconomic factors as control variables, on FDI using a panel dataset of 23 developing countries from 1993 to 2013.

### ***Inward Portfolio Investment and Financial Stability***

A study on 63 countries from 1990 to 2014 concludes that financial asset flows are a good proxy for international transmission of financial innovation that affects stability, leading to crises [18].

M. Ali and A. Iness [19] used disaggregated inflows for 85 developing countries from 2000 to 2014. Findings show that prior to the 2000–2007 crisis, financial stability improved capital inflow in the form of investments in developing countries. Post-crisis (2010–2014), financial stability decreased when more portfolio investments moved into the countries. A study on bilateral capital flows in 64 advanced and emerging economies from 2000 to 2016 shows that portfolio investment is less concentrated relative to other flows in these countries [20].

In the paper [15] found that inward portfolio investment harms financial stability. Their study investigated the relationship between gross capital flows and various financial stability indicators for 16 newly industrialized economies and emerging economies between 1989 and 2011. On the contrary, [22] found no cointegrating association between inward portfolio investment and financial stability. They examined the cointegrating and causal relationship between the financial sector, inward FDI, and inward portfolio investment in Central and Eastern European countries from 1996 to 2015 using the cointegration test of Westerlund-Durbin-Hausman and the causality test. Similarly, this study aligns with [23], who found that net inward portfolio investments are never affected by major international financial shock incidence. They examined the extent and nature of the impact of foreign portfolio investment on instability, particularly in the Southeast Asian emerging market,

namely India, Thailand, Indonesia, and the Philippines, in the context of global financial instability from 2000 to 2014. The daily net inward portfolio investment and stock market composite index were analysed using Autoregressive Conditional Heteroscedasticity (ARCH) model.

Contrary to the above findings, [8] confirmed a significant effect between inward portfolio investment and financial stability. This study explored the impact of a capital flow shock on financial stability in Jamaica from the second quarter of 2006 to the first quarter of 2018. Secondary data from inward portfolio investment and financial stability, which were proxied as non-performing loans, were used for the study. The finding from the Structural Vector Autoregressive (SVAR) model emphasises the need to develop macro-prudential measures to curb possible threats to financial stability. In the paper [24] had a divergent view, revealing that an increase in global instability generates lower portfolio investment, particularly in private sector securities. They examined the different capital flows to Mexico between 1995 and 2015. This study's secondary data include inward portfolio investment, FDI, and other investments as a proxy for capital flows, while financial instability was proxied using a dummy. The variables were analyzed using impulse responses.

### ***Other Capital Flows and Financial Stability***

This form of capital flow has grown popular over the years and is understood to be more volatile than FDI. Different studies have been conducted to understand the interaction between investment in other capital flows and financial stability. In study [15] found that outward FDI positively affects financial stability. Between 1989 and 2011, they looked at the effect of gross capital flows and various financial stability indicators in 16 emerging and newly industrialised economies. This finding was corroborated by K. Ebire and co-authors examined the effect of disaggregate capital flows on financial stability in middle-income countries from 2005 to 2017 [1]. Analysis from PSCC revealed that other capital flows significantly affect financial stability.

In their study [20] used a dataset on bilateral capital flows on 64 advanced and emerging economies from 2000 to 2016. Findings show differences across



different types of investments, with other capital flows being less concentrated relative to others.

## METHODOLOGY

### Theoretical Framework

The theories that underpin this study are Financial Instability Hypothesis (FIH) and the theory of capital control. The FIH was developed by Minsky, who claimed that financial crises became inherent in capitalism because cycles of economic growth enabled lenders and borrowers to become increasingly reckless. Financial bubbles and subsequent busts are caused by excessive optimism. Based on this hypothesis, he claimed that capitalism is prone to changing from periods of financial stability to periods of instability. In addition, Minsky points out that financial instability can be summed up as excess successes leading to crises or economic stability itself, creating instability.

Keynes works are the source of the theory of capital control. In his general theory, Keynes considered controls an important measure for ensuring stability and directing investment towards productive growth, generating employment, and successfully promoting capital transaction regulations at Bretton Woods. The theory of capital control is relevant to explain the direction of capital flows. Capital controls theory explains the direction of capital flows, i.e., whether controls are placed on inflows or outflows of capital. In the study [24], policymakers in several emerging markets responded to financial instability by actively managing capital flows, for example, by imposing counter-cyclical capital controls that are tightened during stability and relaxed during instability.

### Method of Analysis

This study employs an ex-post facto research design. Quarterly secondary sources of data were used for this study, sourced from the Economist Intelligence Unit.<sup>5</sup> The secondary data, which are time series, were collected on the following variables: inward foreign direct investment, inward portfolio investment, other capital flows, inflation

rate, GDP, and non-performing loans spanning from Q1 of 2003 – Q4 of 2019.

### Model Specification

The multiple regression that captures the effect of capital flows on financial stability in Nigeria is stated below:

$$\Delta NPL_t = \beta_0 + \beta_1 \Delta IFDI_t + \beta_2 \Delta IPI_t + \beta_3 \Delta OCF_t + \beta_4 \Delta LOGGDP_t + \beta_5 \Delta INFLR_t + \alpha_i \Delta Y_{t-i} + \varepsilon_t,$$

where  $NPL$  – Ratio of non performing loans to total loans;  $IFDI$  – Inward Foreign Direct Investment;  $IPI$  – Inward Portfolio Investment;  $OCF$  – Other Capital Flows;  $INFLR$  – Inflation rate;  $LGDP$  – Log of Gross Domestic Product;  $\beta_0$  is the constant term;  $\beta_1, \beta_2, \beta_3$ , and  $\beta_4, \beta_5$  – beta coefficients;  $\varepsilon$  is error term,  $t$  = time.

Table 1 shows the variables, their measurements, and their *a priori* expectations, as well as their sources. Theoretically, it is expected that inward  $FDI$ , inward portfolio investment, and  $GDP$  positively affect financial stability (measured as  $NPL$ ). On the other hand, capital flows could positively or negatively affect financial stability. The inflation rate is expected to negatively affect financial stability.

### Technique of Estimation

The technique employed for this study is Error Correction Mechanism (ECM). The ECM method is an econometric technique developed by Engel and Granger to reconcile an economic variable's short-run behaviour with its long-run behaviour. The data were subjected to a stationarity test to avoid spurious regression and analysed using Eviews 10.

## RESULTS AND DISCUSSION

The analysis of the data and discussion of the results are presented in this section. Below are the findings.

### Presentation of Data

#### Descriptive Statistics

Table 2 shows that the average of each variable is not exactly situated at the middle (median) of the distribution. The table also illustrates the skewness of the distribution, which measures the length of the

<sup>5</sup> The Economist Intelligence Unit (2020). Capital account, Retrieved from. URL: [http://graphics.eiu.com/data\\_services/contentguide/capitala.htm#othercapflows](http://graphics.eiu.com/data_services/contentguide/capitala.htm#othercapflows) (accessed on 29.06.2024).

Table 1

## Variables, Measurement and Apriori Expectations

S/N	Variable	Nature	Measurement	Apriori expectation	Source
1	Ratio of non-performing Loans (NPL)	Dependent variable	the proportion of defaulted loans to total loans		[1]
2	Inward Foreign Direct Investment (IFDI)	Independent variable	non-residents' direct investment capital into the country	+	[1, 14]
3	Inward Portfolio Investment (IPI)	Independent variable	Acquisition of assets in a domestic stock or money market by a foreign national or firms	+	[1, 14]
4	Other capital flows (OCF)	Independent variable	Defined as net flows of short-term capital, counterpart to valuation changes, exceptional financing, net errors and omissions	-/+	[14]
5	Inflation rate (INFLR)	Control variable	measured as the increase in general prices of goods and services	-	[4]
6	Gross Domestic Product (GDP)	Control variable	Measured as annual real GDP growth	+	[1, 4]

Source: Authors compilation.

Table 2

## Descriptive Statistics

Indicators	NPL	IFDI	IPI	OCF	INFLR	LOGGDP
Mean	12.39412	5.017647	3.347059	-19.34706	10.67647	4.717647
Median	9.837500	4.895312	1.925000	-24.31250	10.13750	4.787500
Maximum	39.58437	9.106250	19.81250	5.468750	25.65000	4.959375
Minimum	2.790625	1.437500	-7.337500	-38.87812	-0.537500	4.484375
Std. Dev.	9.110467	2.246194	5.487935	12.08738	6.616776	0.116699
Skewness	1.180080	0.236421	1.260069	0.253234	0.610886	-0.542663
Kurtosis	4.097929	2.058640	4.766194	1.766868	2.630945	2.309797
Observations	68	68	68	68	68	68

Source: Authors compilation.

Table 3

**Augmented Dickey-Fuller Tests**

Variable	ADF t-statistics	P-value	Order
NPL	-3.104935	0.0313	1
IFDI	-1.934564	0.0513	1
IPI	-2.669254	0.0083	1
OCF	-2.411001	0.0166	1
INFLR	-3.665328	0.0000	1
LOGGDP	-6956733	0.0070	1

Source: Authors compilation.

tail of the distribution. *NPL*, *IFDI*, *IPI*, *OCF*, and *INFLR* are positively skewed. Thus, they have a long right tail. Implying that the distribution extends more to the positive side. While *LOGGDP* is negatively skewed, it has a long left tail. The table also measures the distribution's kurtosis (peakedness or flatness). All variables are platykurtic, that is, the distributions are flat relative to the normal.

**Unit Root Test Results**

Table 3 displays the stationarity test results used to check for the existence of the unit root, which was done at a 5 percent Mackinnon critical value. The ADF method was used in this analysis since it involves supplementing the previous three equations with the dependent variable's lagged values. The aim is to use enough terms to make the error term serially uncorrelated. All variables (*NPL*, *IFDI*, *IPI*, *OCF*, *INFLR* and *LOGGDP*) were stationary at the first difference, that is, *I*(1).

The ADF model is specified as:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{i=1}^m \alpha_i \Delta Y_{t-i} + \varepsilon_t.$$

**Cointegration Test**

To determine the existence of a long-run relationship between the variables, the Johansen cointegration test was used. We determine the optimal lag length requirements for the variables before performing the cointegration test. From the analysis, 2 lag was found to be more appropriate.

At the 5% level of significance, cointegration with the trace test reveals three cointegration equations. This implies a long-run relationship between the variables and the need for an Error Correction Mechanism (ECM) to explain the relationship.

**Error Correction Mechanism**

The ECM was used to describe any short-run deviations that may have arisen in estimating the long-run cointegration equation and test the hypotheses that had been proposed is presented below:

$$\Delta NPL_t = \beta_0 + \beta_1 \Delta IFDI_t + \beta_2 \Delta IPI_t + \beta_3 \Delta OCF_t + \beta_4 \Delta LOGGDP_t + \beta_5 \Delta INFLR_t + \alpha_i \Delta Y_{t-i} + \varepsilon_t.$$

The ECM estimation using data from the sample period suggested that the  $R^2$ , also known as the coefficient of determination, is 79.6 percent, implying that the explanatory variables — *IFDI*, *IPI*, *OCF*, *GDP* and *INFLR* account for 79.6 percent of the total variations in financial stability. In contrast, the remaining 20.4% represents the changes in the dependent variables, which were not included in the equation. After the  $R^2$  is adjusted, the total variation is 74.9 percent. Additionally, the model's fitness was evaluated using F-statistics, indicating that the model is statistically fit at the 1% significance level. Also, the Durbin Watson test shows that serial correlation is absent, as indicated by the test statistics of 2.50, which is within the threshold.

From the analysis in Table 4, the ECM term corresponds to our expectations. The ECM's negative

Table 4

## ECM Result

Variables	Coefficient	t-statistics	P-value
D(IFDI)	3.601045	3.945128	0.0002
D(IFDI(-1))	-3.342136	-3.521256	0.0009
D(IPI)	0.375401	2.680896	0.0098
D(IPI(-1))	-0.336092	-2.194446	0.0326
D(OCF)	-0.088482	-0.971599	0.3357
D(OCF(-1))	-0.000140	-0.001538	0.9988
D(LOGGDP)	-194.3156	-6.107634	0.0000
D(LOGGDP(-1))	165.5028	4.650030	0.0000
D(INFLR)	-0.563472	-4.828617	0.0000
D(INFLR(-1))	0.464533	3.818634	0.0004
ECM (-1)	-0.108751	-2.911461	0.0053
R <sup>2</sup>	0.795614		
Adj R <sup>2</sup>	0.749338		
F-statistics	17.19278		
DW	2.50		

Source: Authors compilation.

sign and statistical significance of 1% indicate that 10.9% of the adjustment will be made quarterly. As a result, the ECM will behave appropriately to correct any short-run dynamics deviations from their long-run equilibrium by 10.9 percent quarterly.

The study's residuals were subjected to a variety of diagnostic tests. The residuals were tested for serial correlation using Breush-Godfrey serial correlation LM test. The findings indicated that there was no serial correlation. Lastly, the study tested for Heteroskedasticity using Autoregressive Conditional Heteroskedasticity (ARCH) and findings indicated that the residuals were not heteroskedastic (i.e., they were homoskedastic). This is important because ignoring the impact of heteroskedasticity on time series residuals can negatively affect the estimators.

### Discussions

The empirical result shows that inward *FDI* positively and significantly affects Nigeria's financial stability, which is evident at the 1% level

of significance. On the basis of this result, the null hypothesis is rejected. This finding implies that a unit increase in inward *FDI* increases financial stability by 360%. In addition, the lag inward *FDI* was negative but statistically significant at 1%. These findings align with the studies of [18, 19].

The result shows a significant effect of inward portfolio investment on financial stability in Nigeria at the 1% significance level. As a result, the null hypothesis is rejected. Implying that a unit increase in inward portfolio investment results in a 37.5% increase in financial stability in Nigeria. On the other hand, an increase in the one year lag of inward portfolio investment negatively affects Nigeria's financial stability, implying that a one year lag in inward portfolio investment could cause financial instability in Nigeria. This study corroborates the findings of [8], who found that inward portfolio investment significantly affects financial stability.

The analysis shows that other capital flows have no significant effect on financial stability in Nigeria.



Based on this result, as shown by the p-value, which is not statistically significant, we accept the null hypothesis. The implication of this finding is that other capital flows did not impact financial stability in Nigeria for the period under review. However, prior studies, such as [1, 15], showed that other capital flows significantly affect financial stability.

This study also analysed the control variables introduced in the model. Based on the findings, GDP negatively affected financial stability in Nigeria. This finding supports the financial instability hypothesis, which holds that financial stability breeds financial instability. In other words, economic prosperity encouraged lenders and borrowers to be progressively reckless. The high optimism creates financial bubbles and later busts.

On the other hand, a one-year GDP lag positively affects Nigeria's financial stability. These findings align with those of [16], who concluded that the spillover effect of inflation targeting adoption on banking system resilience and capital inflows is significant and positive. According to [15], financial inflows tend to amplify countries' financial instability with a higher inflation rate.

## CONCLUSION AND RECOMMENDATION

This study examines the effect of inward capital flows on Nigeria's financial stability, spanning from the first quarter of 2003 to the last quarter of 2019. An econometric model was specified using the ECM method to ascertain the independent variables' effect on the dependent variables. The variables were first tested for stationarity using ADF, and the analysis revealed that all variables were integrated in the order of 1, that is, I(1). This influenced the decision

to conduct a cointegration analysis to ascertain the long-run relationship between the variables, which revealed a long-run relationship. The ECM test confirmed that long-term equilibrium speed was achieved with an adjustment of 10.9% quarterly. The hypothesis testing results revealed that inward FDI and inward portfolio investment positively affect Nigeria's financial stability, while other capital flows do not have a significant effect on Nigeria's financial stability. Also, the analysis shows that controlling for macroeconomic factors such as GDP has a significant but negative effect on Nigeria's financial stability, while the inflation rate positively affects Nigeria's financial stability. The following recommendations are made based on the findings:

i. Capital is needed in Nigeria, so monetary authorities need to adopt and promote economic policies to increase FDI and entice portfolio investment with rewards such as better economic freedom and lower taxation to boost the country's economy.

ii. An increase in inward capital flows could lead to the expansion of credit, but if not properly managed, it can lead to risky activities by financial institutions. Therefore, Nigeria's central bank should intensify its effort to provide adequate prudential supervision and regulations to control flows and curb risky activities by financial institutions in the country.

iii. Unstable macroeconomic variables can cause volatile capital flows, which may result in financial instability. Therefore, the monetary authorities in Nigeria should implement policies that will ensure a stable macroeconomic environment capable of absorbing internal and external shocks, which is fundamental to managing financial instabilities.

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### **Authors' declared contribution:**

**K. Ebire** — identify the topic, identified gaps, literature review, data collection, analysis and conclusion of the result.

**M.N. Nwala** — Reviewed the paper, identification of gaps, techniques and conclusion and recommendation.

**A.A. Musa** — discussed the variables, literature review and contribution to findings.

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