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# Portfolio Investment Inflows and Capital Market Liquidity in Nigeria

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## ABSTRACT

This study examined the effect of portfolio investment on capital market liquidity in Nigeria. Time series data were sourced from Central Bank of Nigeria Statistical bulletin. Stock market capitalization was modeled as the function of equity investment, bonds, securities and money market investment. Ordinary least square methods of cointegration, granger causality test, and unit root test and error correction model was used. The study found that 64 percent variation in stock market capitalization was traced to portfolio investment in Nigeria. Equity investment, bonds, securities have positive effect while money market have negative effect. From the findings, the study conclude that portfolio investment have significant effect on stock market capitalization in Nigeria. The study recommends that as part of its stabilization policy, the Nigeria's capital market regulatory authorities should give boost to the market, most importantly in the area of international competitive coupon rates and improved external reserve so that foreign portfolio investment inflow to Nigeria will experience boost by investors who seek higher investment.

**Keywords:** Portfolio Investment, Inflows, Capital Market, Liquidity, Nigeria

## INTRODUCTION

Capital market liquidity plays a fundamental role in the overall stability and growth of the financial system, influencing the performance of key sectors, particularly the banking industry. In essence, liquidity refers to the ease with which assets can be bought or sold in the market without affecting their price. A liquid capital market ensures that financial instruments are traded efficiently, allowing participants to enter and exit positions with minimal transaction costs and price distortions. For banks, capital market liquidity is crucial because it enables them to meet their short-term funding needs, manage risks effectively, and maintain their operational flexibility. This liquidity ensures that banks have continuous access to capital for lending, investment, and operational requirements, thus enhancing their financial health and resilience. However, the Nigerian capital market, like those in many developing economies, faces challenges in maintaining adequate liquidity. Factors such as market volatility, regulatory policies, and macroeconomic conditions can affect the availability of funds, with significant consequences for the banking sector. An illiquid market can lead to a tightening of credit conditions, limiting the banking sector's ability to support economic activities. Additionally, insufficient liquidity can result in higher borrowing costs, which discourage investment and slow down economic progress (Adidas, 2024).

Portfolio investment plays an important role in contributing to economic growth, especially in countries with well-developed financial markets (Alfaroa, Chandab, Ozcanc, & Sayekd, 2004). But, Hefeker (2005) argued that portfolio investments run the risk of sudden reversal if the economic environment or the perception of investors change, giving rise to financial and economic crises. Emerging markets such as Nigeria have consistently utilized foreign portfolio investment inflows to bridge the saving-investment gap. The use of this type of investment to fill the saving investment gap can be adduced to the fact that domestic portfolio investment is not enough to drive the economy to achieve the kind of growth it is set to

attain. Also, there is no balance between funds/capital requirements and savings capacity in the Nigerian economy (Eniekezimene, 2013).

The capital market is an important medium that provides companies with an invaluable avenue to raise funds for their businesses. The stock market allows companies to be publicly listed and traded, or to raise additional capital for expansion by floating stocks of ownership in an exchange market. A critical factor of a stock market is its liquidity which refers to the ease with which investments in financial securities are acquired and disposed (Somuncu & Karan, 2005; Marcin, Robert, & Kryzstof, 2013; Ngerebo-A & Torbira, 2014; Adjei, 2015; Gerlach & Yook, 2016; Kumar, Gupta, & Sharma, 2017). The market liquidity makes investment in stocks more attractive compared to other less liquid investments such as real estate. Usually, a stock market is considered one of the primary measurements of the growth and development of any country's economy.

Nigeria stock market has been identified as an institution that contributes to the socio-economic growth and development of emerging and developed economies (Donwa & Odi, 2010). This is made possible through some of the vital roles played such as channeling resources, promoting reforms to modernize the financial sectors, financial intermediation capacity to link deficit to the surplus sector of the economy and a veritable tool in the mobilization and allocation of savings among competitive uses which are critical to the growth and efficiency of the economy (Alile, 1984). It helps to channel capital or long-term resources to firms with relatively high and increasing productivity thus enhancing economic expansion and growth (Alile, 1997). Ekundayo (2002) argues that a nation requires a lot of local and foreign investments to attain sustainable economic growth and development. The market provides a means through which this is made possible. However, the paucity of long-term capital has posed the greatest predicament to economic development in most African countries including Nigeria.

The global financial crises of 2007 results in the capital market crash of 2008 across nations shows the direct effect of foreign portfolio on the capital market of the emerging financial markets like Nigeria. Prior to the Nigerian capital market reforms, the capital and the business environment were considered too harsh and underdeveloped to attract the inflow of portfolio investment. This led to structural, institutional and policy reforms in the Nigerian capital market and the investment climate with the objective of attracting the inflow of foreign investors. For instance, in 1993, the Nigerian stock price was deregulated to allow the market forces (Onoh, 2002). In 1986 the financial sector was deregulated and fixed exchange rate was replaced with floating exchange to avert exchange rate risk. In 2001, Nigerian capital market was internationalized with the introduction of Central Security Cleaning System (CSCS) and the second tier security market was introduced to meet investors of different categories. The extent to which these reforms have affected the inflow of foreign portfolio investors to Nigerian capital market remained a matter of fact and knowledge gap.

Economic theory suggested that while capital flows can provide financial stability benefits, including diversification from idiosyncratic risk, they also make financial conditions more correlated across jurisdictions and create channels for contagion. Indeed, the global financial crisis highlighted the fact that increased financial flows cannot always be assumed to result in a better distribution of risks, at the institution level or the country level and in fact amplify them (Obstfeld 2012). In responding to weaknesses exposed by the financial crisis, global policymakers face a potential trade-off between minimizing possible threats to financial stability and seeking to promote the benefits of an integrated financial system. There are difficulties calibrating the system-wide costs and benefits of different types of capital flows and the policies that seek to constrain or promote them. While some studies have found that international capital flows can boost productive capacity, expand opportunities for diversification and increase liquidity in financial markets, other studies have raised questions about the strength of these relationships. For example, there is only qualified evidence that greater 'financial openness' leads to improved risk sharing (Kose, Prasad & Terrones 2007; Obstfeld 2012).

Despite the increased inflow of portfolio investment to Nigeria, the stock market is still vulnerable to shocks on its economic activities. The 2016 near collapse of the Nigerian stock market just like the 2008 global financial meltdown raises much concern as to whether the inflow of foreign portfolio investments

to the economy has no effect on the performance of the Stock Market. Therefore, there is need for a thorough investigation and in-depth study towards addressing the problem. Furthermore, foreign portfolio investment has been adduced to have adverse effects on a host country. The potentially damaging aspects of foreign portfolio investments are found in its short term nature and also in its volatility (Knill & Lee, 2014; Yaha, Singh, & Rabanal, 2017). More importantly, Osinubi and Amaghionyeodiwe (2010) opine that Foreign Portfolio Equity Investment is basically just a change of ownership and may not be a positive investment transfer. Unlike foreign direct investment, foreign portfolio investors ask for faster returns on their investment and this may lead these investors to suddenly enter or leave an economy. Therefore, many countries are worried about the destructive effects of foreign portfolio outflow during a crisis. From the above, this study examined the relationship between portfolio investment and stock capital market liquidity in Nigeria.

## **LITERATURE REVIEW**

### **Portfolio Investment**

The phenomenon of portfolio investment in emerging market economies has always attracted the attention of writers from the theoretical and empirical perspective. The benefits of foreign portfolio investment include transfer of technology, higher productivity, higher incomes, more revenues for government through taxes, enhancement of balance of payment ability, employment generation, diversification of the industrial base and expansion, modernization and development of related industries. According to Feldstein (2000), first, international flows of capital reduce the risk faced by owners of capital by allowing them to diversify their lending and investment.

Second, the global integration of capital market can contribute to the spread of best practices in corporate governance, accounting rules and legal traditions. Proponents of portfolio investment picture it as adding new resources/capital to the host economy in a way that improves efficiency and stimulates economic growth. It is thus viewed as a panacea for economic development by providing the capital underdeveloped countries desperately need to fill their savings-investment gap. From the neoclassical theory, growth is achieved by increasing the quantity of factors of production optimally. In a simple world of two factors, labour and capital, it is often presumed that low-income countries have abundant labour but scarce capital. This situation arises owing to shortage of domestic savings in these countries (especially the developing countries), which places constraint on capital formation and hence growth. Even where domestic inputs in addition to labour, are readily available, increased production may be limited by scarcity of imported inputs upon which production processes in low-income countries are based. Based on this fact, international capital flows readily as popularized by O'Connor and Iscarriot (2010) become an important means of helping developing countries to overcome their problem of capital shortage.

Lebragacio (2010) suggested that capital moves from countries where it is abundant to countries where it is scarce. The resultant capital relocation will boost investment in the recipient country. Portfolio investment is a grouping of assets such as stocks, bonds, and cash equivalents. Portfolio investments are held directly by an investor or managed by financial professionals. In economics, foreign portfolio investment is the entry of funds into a country where foreigners deposit money in a country's bank or make purchases in the country's stock and bond markets, sometimes for speculation (Montiel & Reinhart 1999). Foreign portfolio investment can be define as a way in which investors diversify their portfolio with an international advantage (Appleyard & Alfred 2013). Portfolio equity refers to a situation where the owner holds less than 10% of a company's shares are classified as portfolio investment. These transactions are also referred to as "portfolio flows" and are recorded in the financial account of a country's balance of payments. Debt security refers to a debt instrument, such as a government bond, corporate bond, certificate of deposit municipal bond or preferred stock, that can be bought or sold between two parties and has basic terms defined, such as notional amount (amount borrowed), interest rate, and maturity and renewal date.

### **Concept of Liquidity**

The concept of liquidity has garnered widespread recognition as a pivotal characteristic of a meticulously structured financial market (Harris, 2013). Considering the prevailing inclination of market participants towards liquid markets, it becomes evident that market liquidity assumes a paramount role in mitigating the expenses associated with trading (Demsetz 2018), thereby yielding a heightened investment yield. From the perspective of the stock exchange, a market that exhibits high liquidity serves as a magnet for a greater number of investors, thereby enabling issuers to procure additional capital at a reduced expense (Butler, Grullon, & Weston, 2015). As a result, this leads to an increase in the revenue generated by the stock exchange. In a similar vein, regulatory bodies express concern about the market's liquidity, recognizing its critical role in fostering an optimal market structure (Chordia et al., 2021) and maintaining market equilibrium (O'Hara, 2014).

The capital market holds paramount significance within a well-functioning financial system, serving as a pivotal conduit for fostering economic expansion. Henceforth, the attainment of substantial expansion is contingent upon the quantum of capital and sundry determinants requisite for production, predominantly contingent upon liquidity and the level of market development. The augmentation of liquidity further exerts a resolute influence on the efficacy of the governance function within the stock market. Initially, heightened market activity catalyzes the acquisition of information, thereby augmenting the informational content inherent in share prices. Furthermore, it is imperative to acknowledge that the optimal utilisation of the stock market for corporate control endeavours necessitates the presence of market liquidity (Forde, 2013). Takeovers necessitate a capital market that is easily accessible, allowing bidders to quickly access a significant amount of capital. Enhanced liquidity has the potential to diminish the expense associated with equity capital by diminishing the anticipated yield that investors demand when allocating funds towards equity investments as a means of remunerating them for the inherent risks involved, commonly referred to as the risk premium. Within the realm of finance literature, a multitude of measures have been devised to approximate the liquidity of the stock market. The justification for utilising turnover ratio (TOR) and total value of securities traded ratio (TVR) can be attributed to two fundamental aspects: their inherent simplicity and ease of estimation, as well as their lack of reliance on extensive data or constrictive assumptions. Moreover, these determinants of liquidity are widely employed by practitioners and investment professionals and have garnered significant attention in scholarly literature and various facets of asset pricing (Apergis et al., 2015). The quantification of market liquidity can serve as a reflection of the market's role in facilitating corporate control.

### **Rational Expectations Theory**

Rational Expectations Theory states that the players in an economy will act in a way that conforms to what can logically be expected in the future. That is, a person will invest, spend, etc. according to what he or she rationally believes will happen in the future. Although this theory has become quite important to economics, its utility is doubtful. For example, an investor thinks a stock is going to go up, and by buying it, this act actually causes the stock to go up. This same transaction can be framed outside of rational expectations theory. An investor notices that a stock is undervalued, buys it, and watches as other investors notice the same thing, thus pushing the price up to its proper market value. This is the problem with Nigerian stock market trying to restore market confidence since after the global financial crunch. The general expectation of Nigerian investors is pessimistic and hence the market is dragging irrespective of the innovations introduced by the regulatory agency and the Nigerian stock exchange.

### **The Push Factor Theory**

This theory explains the cause of FPI to external factors other than what happens in the domestic country. Among the push factors, a prominent role has been attributed to slow economic growth rate and low interest rate of industrialised countries (Calvo and Reinhart, 1998). Additionally, the increasing appetite of investors towards international diversification may also push capital flows into emerging economies (Calvo et al., 1996). Empirically, scholars such as Calvo et al. (1993) and Fernandez-Arias (1994) attributed the increase in capital inflows of developing countries in the 1990's to the decline in the US interest rate. Another key push factor identified by these authors is the rise in the tax rate of multinational

corporations. While there are considerable numbers of literature which explain capital flows to emerging countries to be induced by a recession in industrialised countries, a contrast view has been provided once for developed countries.

Jeanneau and Micu (2002) indicated that robust economic activities in industrialised countries are significant in explaining portfolio inflows of developing countries. Another set of domestic factors in literature are the contagion effect. Contagion has gained much attention in literature since the Asian crises in 1997-1999. It generally explains circumstances between groups of countries. Masson (1999) identifies three transmission mechanisms of contagion. These are the monsoonal effect, the spillover effects and the shift or pure contagion.

### **The Pull factor Theory**

The pull factor theory attributes the flow of capital to be as a result of the domestic fundamentals of the recipient country. These domestic factors include creditworthiness of a country, improvement in fiscal and monetary policies and neighbourhood externalities (interest rate and the price earnings ratio of the host country) (Calvo, et al, 1996).

Haque, Mathieson and Sharma (1997) also identify an increase in domestic output and domestic money demand to be pull factors. Other domestic factors also include the performance of macroeconomic variables such as financial development, inflation, GDP growth rate, current account balance and gross domestic investment. Thus, to evaluate the level of sound economic policies and the sustainability of capital flows, investment environment, infrastructure as well as the quality of institutions are also included as key domestic factors. Many scholars (Chuhan et al, 1994 and Ul-Haque, Kamar, Mark, & Mathiesan, 1996) have identified pull factors to be the main significant factors that explain capital inflows of emerging economies in the 1990s. The authors argue that financial liberalisation among other factors such as privatisation of public enterprise and improvement in macroeconomic conditions have improved the credit worthiness of developing countries leading to international capital mobility.

### **Empirical Review**

Arabsalehi (2022) examined the impact of liquidity in the stock market on the financial results of ninety-seven carefully chosen companies that were listed on the Tehran Stock Exchange between 2003 and 2012. They found that stock liquidity considerably and favourably affected two measures of company performance: EVA and Tobin's Q. However, there was no evidence that liquidity had a significant effect on ROA.

Dalvi and Baghi (2014) examined the correlation between the liquidity and performance of Tehran Stock Exchange-listed shares. A combination of methods was employed to analyse data from 154 firms that were listed on the Tehran Stock Exchange from 1383 to 1388. The aim of the research was to ascertain the correlation between business performance and liquidity. There was a significant correlation between the liquidity and performance scales, according to the findings. For the period from 1979 to 2008,

Olowo et al. (2021) conducted a critical analysis of the capital market's impact on the Nigerian economy. All variables tracked by the outcomes suggested that the stock market did contribute to economic expansion. The main findings showed that there was a negative relationship involving turnover ratio and GDP as well as a negative link among market capitalization and GDP. Conversely, the all-share index exhibited a positive correlation with gross domestic product.

Adenuga (2020) investigated the hypothesis that the development of the stock market stimulates economic growth in Nigeria and attempted to establish or refute its validity by applying the vector error correction model (VECM) to quarterly data for Nigeria from 1990 to 2009 and frequently employed stock market development indicators. According to the findings, the market capitalization ratio model provides the most accurate representation of the total value of shares traded, while the turnover ratio model exhibited a slower performance. In their study, Yusuf (2019) examined the potential effects of financial liberalisation on the efficacy and liquidity of the stock market, which are key drivers of economic expansion. Analysing the data for a period of twenty years (1986-2005) using paired tests. Financial liberalisation has a substantial positive effect on the liquidity and efficacy of the Nigerian stock market,

according to the study. Regarding monetary policy, Guo (2008) examined the efficient market hypothesis (EMH) about the Chinese stock market.

Nwonodi (2018) examined the effect of foreign portfolio investment on the performance of Nigerian capital market. The specific objectives are to investigate the impact of Net Foreign Portfolio Investment, Foreign Portfolio Investment in Equity, Foreign Portfolio Investment in Bonds, Foreign Portfolio in Government Securities and Nigerian Exchange Rate per US Dollar on the performance of Nigerian Capital Market. The required data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and Stock Exchange Annual Report. The study has All Share Price Index and Market Capitalization as proxy for Capital market performance while Net Foreign Portfolio Investment (NFPI), Equity Investment (PIE), Bond Investment (PIB), Portfolio Investment in Government Securities (PIGS) and Exchange Rate as predictors variables. The Ordinary Least Square multiple regressions with econometric view were used as data analysis techniques. Cointegration test, Granger Causality Test, Augmented Dickey Fuller Test and Error Correction Model were used to examine the variables and its relationship to the dependent variables. Model one revealed that foreign portfolio investment in bonds and foreign portfolio investment in government securities have negative relationship with All Share Price Index while Net Foreign Portfolio investment, foreign portfolio investment in equities and exchange rate have positive relationship with All Share Price Index. Model two revealed that Net Foreign Portfolio Investment, Portfolio Investments in Bonds and Government securities has negative relationship with market capitalization while equity investment and exchange rate have positive relationship with market capitalization. The study concludes that foreign portfolio investment have significant relationship with Nigerian capital market performance. It therefore recommends that policies should be devised to enhance the operational efficiency of the Nigerian capital market, to attract foreign investors.

Osuka, Ezedike and Mbanasor (2022) examined foreign portfolio investment (FPI) and growth of Nigeria's Capital Market using time series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin for period of 1990 to 2020. Foreign Portfolio Investment into Nigeria and other control variables as external reserve, exchange rate and inflation rate collectively stood as the exogenous variables while Market Capitalization as proxy for capital market growth functioned as endogenous variable. The model of the study followed the Autoregressive Distributive Lag (ARDL) Bound test based on the mixed order of the data in  $I(0)$  and  $I(1)$  as indicated by the Augmented Dickey Fuller (ADF). The study found a long run positive relationship between foreign portfolio investment and Nigeria's Capital Market growth. On the long run effect of other explanatory variables, Exchange Rate made insignificant positive contribution; External Reserve had insignificant negative effect; while Inflation Rate was found as a significant negative contributor to the model. The study concludes that foreign portfolio investment shares long run positive relationship with Capital Market Growth in Nigeria. The study therefore recommends that, as part of its stabilization policy, the Nigeria's capital market regulatory authorities should give boost to the market, most importantly in the area of international competitive coupon rates and improved external reserve so that FPI inflow to Nigeria will experience boost by Foreign Investors who seek higher investment.

Okonkwo (2016) studied foreign portfolio investment and the growth of the industrial sector in Nigeria for the period of 1986 to 2013 using secondary data sourced through Central Bank of Nigeria Statistical Bulletin (2013) and International Financial Statistics. Using the ordinary least square method, the study found significant positive relationship existing among foreign portfolio investment, gross fixed capital formation, market capitalization and industrial growth. Onyeisi, Odo and Anoke (2016) studied the impact of foreign portfolio investment inflows on stock market growth in Nigeria from 1986 to 2014. Data for the study was collected from the statistical Bulletin of Central Bank of Nigeria (CBN), annual reports and Statement of Account of various issues and online service from World Bank Indicators. The study used Augmented Dickey Fuller (ADF) Unit Root Test, vector error correction model and Granger Causality econometric tools. The findings of the trace statistics indicates one (1) co-integrating equation at 5% level of significance, the vector error correction model indicates long-run significant impact of foreign portfolio investment on stock market growth in Nigeria, and the Granger Causality shows there is

no causality between foreign portfolio investment and stock market growth in the Nigerian economy. It found a negative relationship between FPI and the Nigerian capital market. The study inferred that foreign portfolio investment (FPI) inflows might not contribute positively to the increase in stock market when there is no conducive business environment for foreign investments to thrive in Nigeria.

Ohaeri (2017) examined the nature and direction of causality existing among foreign portfolio investments, capital flight and capital market performance in Nigeria using ex-post-facto and descriptive research designs. Data were collected from National Bureau of statistics, International Monetary fund, World Bank direction of trade websites, Security Exchange Commission reports and Nigerian Stock Exchange reports between 1970 and 2014. Data generated are analyzed using Vector Error Correction models and co-integration test subject to the outcome of the preliminary tests for conformity with econometric assumptions. The study found a unidirectional causality between capital market performance in one hand and also between foreign portfolio investment and capital flight on the other hand at 5% and 10% levels of significance respectively.

Adebisi and Arikpo (2017) evaluated the financial market performance and foreign portfolio inflow to Nigeria covering 1984 to 2015 data was sourced from the CBN statistical bulletin within the period of study. Financial market performance was measured using capital market performance, capital market liquidity and total new issues. The exploratory design was combined with the ex-post facto research design; the data collection method was desk survey. Making use of Autoregressive Distributive Lag (ARDL) technique, findings from the analyses showed that financial market performance has no long run causal relationship with foreign portfolio investment in Nigeria. Also, capital market performance and capital market liquidity have no short run causal relationship with foreign portfolio investment in Nigeria. Equally, total new issue has a short run causal relationship with foreign portfolio investment in Nigeria.

Akinmulegun (2018) examined the effect of capital market development on foreign portfolio investment in Nigeria over the period 1985 to 2016. The study employed secondary data sourced from Central Bank of Nigeria Statistical Bulletin and publications of Nigeria Stock Exchange. The research adopted Vector Error Correction Mechanism (VECM) to analyze the short run and long run dynamism of the variables while also focusing on the direction of causality between capital market development and foreign portfolio investment in Nigeria, using granger causality test. The Granger causality test revealed that there is no causality between capital market development and foreign portfolio investment in Nigeria. Result from the vector error correction model indicated that Market Capitalization (MCAP) has negative significant effect on foreign portfolio investment in Nigeria while All Share Index (ASI) has positive relationship with foreign portfolio investment.

Araoye (2021) examined effect of capital market development on the foreign portfolio investment in Nigeria. The time series secondary data covering the period 1990 to 2019 used for the study were obtained from the Central Bank of Nigeria Statistical Bulletin, Nigeria Stock Exchange fact sheet, National Bureau of Statistics, Articles, Journals libraries and Internet. The study analyzed the data using unit root test to determine the stationarity or otherwise of the time series data with Augmented Dickey Fuller (ADF) unit root test. Vector Error Correction Model was employed in estimating the effect of the independent variables on the dependent variable. Granger causality test was also adopted to establish the direction of causality among the relevant variables. The findings revealed that market capitalization has positive but significant impact on foreign portfolio investment in Nigeria. The granger causality result indicates unidirectional causality movement from market capitalization (MCAP) and real gross domestic product (RGDP) to foreign portfolio investment. The study recommended that capital market regulators should apply all necessary tools to encourage listing of private companies on the floor of stock exchange market. Ekine, Ewubare and Ajie (2019) examined the impact of foreign portfolio investment and Foreign Direct Investment on the performance of the Nigerian Economy over a period of 1980-2017. The data used were purely secondary sourced from the central Bank of Nigeria statistical Bulletin and World Bank Development indicator. The ordinary least square (OLS) regression analysis was used. The findings revealed that the performance of the Nigerian Economy is directly related to inflow of foreign portfolio investment and foreign direct investment and it is also statistically significant at 5% level. This means that

a good performance of the economy depends on the inflow of these variables, or that the variables serve as an engine of economic growth. The study therefore recommends that policy makers should work on improvement of economic incentives capable of mobilizing external resources to the country to engender macroeconomic stability. A stable economy will attract foreign investment and this result to increased inflow of foreign capital.

Ohiaeri (2017) investigated the nature and direction of causality existing among foreign portfolio investments, capital flight and capital market performance in Nigeria using ex-post-facto and descriptive research designs. Data generated were analyzed using Vector Error Correction models and co-integration test subject to the outcome of the preliminary tests for conformity with econometric assumptions. Study findings disclosed a unidirectional causality between capital market performance in one hand and also between foreign portfolio investment and capital flight on the other hand at 5% and 10% levels of significance respectively. The study concluded that there was significant symbiotic connectivity among the examined variables in Nigeria and consequently, recommended an urgent review of capital importation policy, a robust regulatory framework and a re-investment incentive to discourage indiscriminate repatriation of investment proceeds outside Nigeria.

Okonkwo (2016) investigated the effect of foreign portfolio investment on industrial growth in Nigeria with the view to establish empirical relationship among foreign portfolio investment and industrial productivity in Nigeria. Secondary data were employed in the study and were sourced from the Central Bank of Nigeria statistical bulletin 2013 edition and the International financial statistics (IFS). The ordinary least square (OLS) estimation technique was appropriately employed in the study. The findings of the study revealed that there was statistically significant positive relationship existing among foreign portfolio investment, gross fixed capital formation, market capitalization and industrial growth proxied by industrial production index (IPI) in Nigeria. The study recommended among others that proactive steps must be taken to expand market capitalization which was the major driver of foreign portfolio investment in order to keep stimulating industrial productivity in the economy.

Lionel, Alfa and Samuel (2020) examined the impact of capital flight on domestic investment in Nigeria between 1980 and 2017. Deploying the Auto Regressive Distributed Lag (ARDL) econometric methodology, the study finds that capital flight has negative and significant impact on domestic investment. In particular, the long run impact of capital flight on domestic investment (0.57) turns out to be more severe than its impact in the short run (0.27), implying that a continuous and persistent build-up of capital flight exerts a negative cumulative effect on domestic investment over time. The study further reveals that the quality of institutions in Nigeria is a disincentive to domestic investment. It therefore recommends the strengthening of institutions to rein in on the illegal outflow of capital from the Nigerian economy in order to guarantee the availability of investible funds. The real sector of the local economy must be grown to bolster the value of the naira. This will stem the tide of capital flight and attract investments into critical sectors.

Igwemma, Egbulonu and Assumpta, (2018) confirming the deleterious effect of capital flight on the Nigerian economy, further found that looted funds, medical expenses, and foreign education were the fundamental channels through which capital flight was initiated and sustained. Usman and Arene (2014) examined the effects of capital flight on agricultural sector growth in Nigeria. They found a negative and insignificant effect on the agricultural sector. They conclude that capital flight has no direct effect on the agricultural sector; perhaps its impact is subsumed within other macroeconomic variables. On the other hand, a more narrow implication of capital flight was conducted to determine its impact on tax revenue in Nigeria. Adetiloye (2012) used the vector error correction mechanism of the ordinary least squares (OLS) regression methodology to analyze data between 1970 and 2007, finds that capital flight has negative but insignificant impact on domestic investment in Nigeria. As noted above, this finding was without basis as the capital flight variable was conspicuously lacking in the model specification, and in the reported results. Salandy and Henry (2013) examined the impact of capital flight on growth and investment in Trinidad and Tobago found evidence of a negative and significant influence of capital flight on domestic investment.



Ajayi and Araoye (2019) examined the effect of trade openness on economic growth of Nigeria using data from 1970 to 2016. We used secondary data obtained from world development data base (2000), World Bank and International Financial Statistics, IFS- International Monetary Fund Data Base (2010) and Central Bank of Nigeria Statistical Bulletin 2014. Using the Augmented Dickey-Fuller (ADF) and Phillip-Peron (PP) unit root test, they discovered that all the series are non-stationary at levels. However taking the variables at first difference, results shows that all are I(1) at 5% for ADF and 1% for PP level of significance except the labour input which was not stationary at first difference in ADF. The findings from Co-integration test showed that an equilibrium relationship exists among the variables and using the Co- integration test in line with Engel and Granger (1987) which believed that there is a long-run relationship among economic variables if tested for unit root problem and since no problem is found which then conform with the claim of the study. Thus, the entire coefficient was correctly signed and stationary at 5% level. Trade openness and economic growth depicted a positive relationship but a negative relationship existed between economic growth and exchange rate but this was expected especially for a country that engaged in international trade. The study recommended that Government should formulate policies that will liberalize trade and should be administered with caution so as not to discourage local production and exploitation and exploration of resources that will improve revenue earning capacity of Nigeria which would hasten growth and development.

Chukwuemeka (2018) researched on the long-run influencing factors of foreign portfolio investment in Nigeria. They discovered the appropriate policies to attract foreign portfolio investment in the long-run. They used the quarterly time series data over the period of 1981-2010. Market capitalization, real exchange rate, real interest rate, real gross domestic product, and trade openness were considered variables. Net portfolio investment was considered as dependent variable. They applied finite distributed lag model of time series analysis. The study revealed that foreign portfolio investment flow into Nigeria had a positive long-run relationship with market capitalization and degree of openness. The study recommended that it was good to make Nigeria's trade policy as investment welcoming policy for attracting portfolio investment flows.

Ajayi, Adejayan and Obalade (2017) examined the impact of foreign private investment on the Nigerian capital market using time series data from 1986 to 2014. Johansen co-integration model was used to estimate the causal effect between both variables. Market capitalization, foreign direct and portfolio investments were proxies for the dependent and independent variables respectively. The result of the study revealed that that there is a long run relationship between Market capitalization and foreign Effect of Foreign Direct Investment on Capital Market Development in Nigeria portfolio investment however this relationship is negative meaning that and increase in foreign portfolio investment will cause a decrease in Market capitalisation. The study concluded that foreign direct investment has a positive and significant impact on capital market Development while foreign portfolio investment has positive but insignificant impact. They recommend that a robust re-investment incentive policy or roll- over window package need to be established to encourage retention of foreign portfolio investment proceeds within the system. This is required in order to minimize the rate of flight capital through illegal and indiscriminate repatriation of investment proceeds through foreign portfolio investment channel.

Arikpo and Ogar (2018) investigated the impact of stock market development on foreign capital inflow into Nigerian businesses. The dependent variable of the study is foreign direct investment, while the independent variables were market capitalization, number of listed corporations, all share index, turnover ratio and value of transactions in the Nigerian stock exchange. Consequently, historical time series data spanning 1972 to 2016 was collated and estimated using vector autoregressive model. The results indicate the existence of a significant linear relationship between foreign capital inflows and market capitalization, number of listed corporations, all share index, turnover ratio and value of transactions. The results averred that stock market development is a necessary stimulant to capital inflow to Nigerian corporations.

Azeez and Obalade (2019) examined the factors determining the development of the Nigerian stock market from 1981 to 2017. The study regressed market capitalization as the dependent variable and employed gross domestic product, banking sector development, stock market liquidity, foreign capital

inflow, the level of inflation and the level aggregate domestic savings in Nigeria. The autoregressive distributive lag model was employed to ascertain the long run equilibrium relationship and short run dynamics of the model. According to the results, the determinants of stock market development are the robustness of the banking sector, stock market liquidity and foreign direct investment inflows both in the long run and the short run. It also emerged that inflation and aggregate domestic savings were insignificant determinants of the stock market development in Nigeria.

Iriobe, Obamuyi and Abayomi (2018) investigated the impact of foreign portfolio investment inflows on the performance of the Nigeria capital market, using data spanning 2007 to 2017. The study thus relied on the ex post facto research design to examine the impact of the dependent variable of stock market development and the independent variable, foreign portfolio investment inflows in Nigeria using the autoregressive distributive lag model, the study that foreign portfolio direct investment inflows is a catalyst in the performance of the Nigerian capital market.

Anthony-Orji, Orji and Ogbuabor (2018) examined how the development of the Nigeria capital market stimulates the inflow of capital from overseas and how this foreign capital support economic growth in Nigeria. To achieve this, real gross domestic was used as the dependent variable, while market capitalization, all share index, aggregate savings, foreign capital inflow, degrees of trade openness and real exchange rate. Historical data spanning 1985 to 2016 was called and analysed using the ordinary least square technique and Johansen co-integration technique to ascertain the if a long run equilibrium relationship exist or not in the model. The co-integration results indicated the existence of long run equilibrium relationship in the model. The error correction results further indicate that foreign exchange rate, degree of trade openness, foreign capital inflow and all share index exert negative and statistically insignificant impact on economic growth at the 5% tolerance level. The results further averred that market capitalization stimulates economic growth positively and significantly.

**Literature Gap**

Majority of the studies on the effect of portfolio investment and financial market development is done in foreign countries and with different economic policies and locations different from Nigeria with few studies that focused in Nigeria. The studies reviewed neglect the effect of portfolio investment as capital inflow and the effect on stock market return but focused more on portfolio investment, economic growth capital market development living a gap on how portfolio investment affects the entire financial sector development in Nigeria. This study focused on portfolio investment and capital market liquidity in Nigeria.

**METHODOLOGY**

The study adopted the quasi-experimental research design. The data for this study are time series data ranging from 1990 – 2023. The data consist of yearly data of two dependent variables that measures capital market performance and five independent variables.

**Model Specification**

$$SML = f(FEI, FSI, FBI, MMI) \tag{1}$$

To have the estimable version of above models 1 can be rewritten to have

$$CML = \beta_0 + \beta_1 FEI + \beta_2 FSI + \beta_3 FBI + \beta_4 MMI + \mu \tag{2}$$

Where

CML = Capital market liquidity

FEI = Foreign equity investment

FSI = Foreign security investment

FBI	=	Portfolio Investment in Bonds
MMI	=	Portfolio Investment in money market
$\beta_0$	=	Intercept
$\beta_1 - \beta_5$	=	Coefficient of the explanatory variable
$\mu$	=	Error term
$\phi_0 \alpha_0$	=	Constant
$\beta_1 - \beta_5$	=	Coefficients of independent variables
$\mu_i$	=	Error Term

### A-Priori Expectation

Base on theories such as capital flight and empirical results examined in this study, the variables are expected to have a Negative effect on the dependent variables. The mathematical implication is stated as follows:  $\beta_1, \beta_1, \beta_1, \beta_1 < 0$

### Data Analysis Techniques

#### Econometric Analysis

Appropriate levels of analysis will be conducted, in each case ranging from the global analysis (that reveals the overall utility of the models) to analysis of relative statistics that test the hypotheses. This study applies unit root test first so as to uncover the true nature of stationary-properties of all the variables under consideration. This is necessary in order not to run into the problem of spurious regression since unit root problems are common features encountered in most time series studies. However, the simple regression model will be employed as the estimation technique for this study. Johansen and Jusellius Co-integration Test would be applied to determine the long run equilibrium of the variables in the model, while the Granger Causality Test would also be applied in checking the underlying structure of the dynamics relationship between the variables.

Ordinary least squares (OLS) are a method for estimating the unknown parameters in a linear regression model. Hutcheson (2011) defined ordinary least square (OLS) regression as a generalized linear modeling technique that may be used to model a single response variable which has been recorded on at least an interval scale. This method minimizes the sum of squared vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation.

OLS technique may be applied to single or multiple explanatory variables and also categorical explanatory variables that have been appropriately coded. In single explanatory variables, the relationship between a continuous response variable (Y) and a continuous explanatory variable (X) may be represented using a line of best-fit, where Y is predicted, at least to some extent, by X. If this relationship is linear, it may be appropriately represented mathematically using the straight line equation 'Y = a +  $\beta$ x'. For the multiple explanatory variables additional variables are added to the equation. The form of the model is the same as in a single response variable (Y), but this time Y is predicted by multiple explanatory variables (X<sub>1</sub> to X<sub>5</sub>).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \tag{3}$$

The interpretation of the parameters (a and β) from the above model is basically the same as for the simple regression model, but the relationship cannot be graphed on a single scatter plot. A indicates the value of Y when all variables of the explanatory variables are zero. Each β parameter indicates the average change in Y that is associated with a unit change in X, whilst controlling for the other explanatory variables in the model. Model-fit can be accessed through comparing deviance measures of nested models. For example, the effect of variable X<sub>3</sub> on Y in the model can be calculated by comparing the nested models

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \tag{4}$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \tag{5}$$

The change in deviance between these models indicates the effect that X<sub>3</sub> has on the prediction of Y when the effects of X<sub>1</sub> and X<sub>2</sub> have been accounted for (it is, therefore, the unique effect that X<sub>3</sub> has on Y after taking into account X<sub>1</sub> and X<sub>2</sub>). The overall effect of all three explanatory variables on Y can be assessed by comparing the models

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \tag{6}$$

$$Y = a. \tag{7}$$

The significance of the change in the deviance scores can be accessed through the calculation of the F-statistic using the equation provided above (these are, however, provided as a matter of course by most software packages). As with the simple OLS regression, it is a simple matter to compute the R-square statistics.

### Unit Root Test

A unit root test is a statistical test for the proposition that in a autoregressive statistical model of a time series, the autoregressive parameter is one (Econtermsy(t), where t a whole number, modeled by:

$$y(t+1) = ay(t) + \text{other terms}$$

Where a is an unknown constant, a unit root test would be a test of the hypothesis that a=1, usually against the alternative that |a| is less than 1.

The Augmented Dickey Fuller (ADF) unit root test is used to test the stationarity property of a time series data in order to avoid the spurious regression problem. The ADF unit root test is specified as

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{i=1}^n \gamma_i \Delta Y_{t-i} + \varepsilon_t \tag{8}$$

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{i=1}^n \gamma_i \Delta Y_{t-i} + \varepsilon_t \tag{9}$$

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{i=1}^n \gamma_i \Delta Y_{t-i} + \varepsilon_t \tag{3.10}$$

**Note:** The null hypothesis is rejected on the ground that the absolute value of the calculated ADF test statistic is larger than the absolute value of the Mackinnon critical value.

### Cointegration Test

Cointegration is a statistical property of time series variables. In a situation where two or more series are individually integrated (in the time series sense) but some linear combination of them has a lower order of integration, then the series are said to be cointegrated. According to (C T Eviews 2010) cointegration refers to a scenario where linear combination of non-stationary variables is stationary. For these non-stationary time series variables, there is a possibility of estimation by differencing in cases where the differences are stationary. For estimation of the cointegrating relationship to be undertaken, it requires

that all the time series variables in the model be integrated of order one  $I(1)$ . The next step after recognizing the order of integration of the variables as  $I(1)$  or above is to test whether the variables in question can cointegrate or not.

The three main methods for testing for cointegration are: The Engle-Granger two-step method (null: no cointegration, so residual is a random walk), The Johansen procedure, Phillips-Ouliaris cointegration Test available with R (null: no cointegration).

To test for the presence of long-run equilibrium relationship, the Johansen's and Juselius (1990) and Johansen (1991) multivariate cointegration technique is employed. The cointegration test is based on the following equation.

$$\dots\dots\dots (11)$$

Where  $n$  and  $n$  are  $4 \times 4$  matrices and  $k$  is the lag length. The tests used here involved cointegration with linear deterministic trend in the vector auto regression (VAR).

**Granger Causality Test**

In conducting an econometric study, the direction of causal relationship among variables is determined according to the information obtained from the theory. In this study, Granger Causality test was used in order to test the hypotheses regarding the presence and the direction of the causality between assets quality and profitability of deposit money banks. For the purpose of this, the direction of causality determines the direction of the relationship among variables and Granger Causality test has three different directions in respect of this and they include the following:

**One way causality**

In a single equation model,  $Y$  is the dependent variable and  $X$  independent variable. The Granger, (1969) approach to this, is to see how much of the current  $Y$  can be explained by past values of  $Y$  and then to see whether adding lagged values of  $X$  can improve the explanation. In this case,  $Y$  is said to Granger-caused by  $X$  if  $x$  helps in the prediction of  $Y$ , or equivalently if the coefficient on the lagged  $X$ 's are statistically significant. Here, there is a causality relationship from  $X$  towards  $Y$ . Independent variable is the cause and causes a one way effect on dependent variable, which shows the presence of one-way causality and the relationship is determined as  $Y$  on  $X$ .

**Two way causality**

In this case of two way causality, there can be reciprocal effect between variables. In this case,  $X$  Granger cause  $Y$  and  $Y$  Granger cause  $X$ . The Statement of "X Granger cause  $y$  and  $y$  Granger cause  $X$  does not imply that  $Y$  is the effect or the result of  $X$ . what it simply means is that Granger causality measures precedence and information content but does not by itself indicate causality in the more common use of the term.

**Lack of Causality**

This means that there is no relationship among variables, therefore no causality. In this case, in order to apply Granger causality test, the series that belong to variables should be stationary. Therefore, it is necessary to make test, the series that belong to variables should be stationary. Gujaranti (1995) submits that recent studies have shown that the conventional F-test for determining joint significance of regression-derived parameters, used as a test of causality, is not valid if the variables are non-stationary and the test statistics does not have a standard distribution. In this study, Granger causality test would be applied in order to determine the presence of the relationship among variables and its direction. The Granger's causality test (Granger, 1969) is carried out by using the following equations:

According to Tari (2005) the equation suggests that if the addition of the information about the variables  $x$  to the model contributes to the estimate of the variables  $y$ , the variable  $x$  is the cause of the variable  $y$ . Here equation 5 shows a causality relationship from  $x$  to  $y$  and the equation 3.15 from  $y$  to  $x$ . Analyzing the model presented above, Granger causality test is carried out as  $H_0: \beta = 0$  and  $H_1: \beta \neq 0$  when  $H_0$  hypotheses is accepted,  $X$  is not the cause of  $Y$ , But if  $H_1$  hypotheses is accepted, then  $X$  is the cause of  $Y$ . If both hypotheses are rejected, this means that there is a two-way causality between  $X$  and  $Y$ . The Granger testing works in a way that, if "F" table value,  $H_0$  hypotheses is accepted as "there is no causality

from X to Y. But if “F” value is higher than the table value, H0 hypotheses is rejected and it is causality from X to Y. All these calculations are applied in the same way in order to test whether there is causality from Y to X.

The main objective of this study is to investigate the causality between the independent and the dependent variables. Granger (1996) proposed the concept of causality and exogeneity: a variable Yt is said to cause Xt, if the predicted value of Xt is ameliorated when information related to Yt is incorporated in the analysis. The test is based on the following equation below

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 Y_{t-2} + \dots + \alpha_n Y_{t-n} + \beta_1 X_t + \beta_2 X_{t-1} + \beta_3 X_{t-2} + \dots + \beta_n X_{t-n} + \mu_{1t} \tag{3.12}$$

and

$$X_t = \alpha_0 + \alpha_1 X_{t-1} + \alpha_2 X_{t-2} + \dots + \alpha_n X_{t-n} + \beta_1 Y_t + \beta_2 Y_{t-1} + \beta_3 Y_{t-2} + \dots + \beta_n Y_{t-n} + \mu_{2t} \tag{3.13}$$

Where X<sub>t</sub> and Y<sub>t</sub> are the variables to be tested while μ<sub>1t</sub> and μ<sub>2t</sub> are white noise disturbance terms and n is maximum number of lags. The null hypothesis α<sub>1</sub> = β<sub>1</sub> = 0 for all 1's is tested against the alternative hypothesis α<sub>1</sub> ≠ 0 and β<sub>1</sub> ≠ 0, if the coefficient of α<sub>1</sub> are statistically significant, that of β<sub>1</sub> are not, then X causes Y, If the reversal is true than Y causes X. However, where both coefficient of α<sub>1</sub> and β<sub>1</sub> are significant then causality is bi-directional.

### ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: unit root test

Variable	ADF	MacKinnon 1%	MacKinnon 5%	MacKinnon 10%	Order of integration	Conclusion
ADF at Level						
CML	-1.566315	-3.920350	-3.065585	-2.673459	I(0)	Not stationary
SI	-1.177640	-3.920350	-3.065585	-2.673459	I(0)	Not stationary
MKI	-2.475541	-3.920350	-3.065585	-2.673459	I(0)	Not stationary
BI	-1.424592	-3.920350	-3.065585	-2.673459	I(0)	Not stationary
ADF at Difference						
CML	-3.987996	-4.200056	-3.175352	-2.728985	I(0)	Not stationary
SI	-2.728488	-4.121990	-3.144920	-2.713751	I(0)	Not stationary
MKI	-4.438558	-3.959148	-3.081002	-2.681330	I(1)	stationary
BI	-3.785367	-3.959148	-3.081002	-2.681330	I(0)	Not stationary

**Source: Computation by author using E-view 9.0**

From the table 1 the empirical result of the unit root test for stationary of time series property of variables is shown. The criterion is that the Augmented Dickey Fuller results must be strictly greater than the critical at certain level of significance to confirm the presence of stationarity pattern of variables. The unit root values for the variables of understudy reveal that the variables are not stationary at difference except foreign portfolio investment in the money market. This is because the ADF values of the variables are all greater than the critical value at 10% the Null Hypothesis of the presence of unit root in all the variables is rejected.

**Table 2: Presentation of Johansen's Unrestricted Co-Integration Rank**

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.752741	121.4243	95.75366	0.0003
At most 1 *	0.717304	79.50472	69.81889	0.0069
At most 2	0.473832	41.60322	47.85613	0.1701
At most 3	0.314809	22.33918	29.79707	0.2800
At most 4	0.274616	10.99745	15.49471	0.2117
At most 5	0.044507	1.365840	3.841466	0.2425

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.752741	41.91959	40.07757	0.0307
At most 1 *	0.717304	37.90150	33.87687	0.0156
At most 2	0.473832	19.26404	27.58434	0.3944
At most 3	0.314809	11.34174	21.13162	0.6132
At most 4	0.274616	9.631606	14.26460	0.2373
At most 5	0.044507	1.365840	3.841466	0.2425

**Source:** Author's Computations using E-VIEWS 9.0

Johansen co-integration test determines whether the long-term relationship occurs in variables or not. The test envisages that there can be just one relationship between variables in long term. In most cases, if two variables that are I(1) are linearly combined, the combination will also be I(1). More generally, if variables with differing orders of integration are combined, then the combination will have an order of integration equal to the largest.

Johansen-Juselius Cointegration tests are presented in the tables above where the result shows that the variables are cointegrated and significant at the 5% level. Thus, these results suggest that a long run and stable relationship between the variables exists. The maximum Eigen and the trace statistics in the above table show the presence of one co-integrating equation at 5% significant level, which is an indication that there is a long run relationship among the variables.

Table 3: Presentation of Parsimonious Error Correction Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CML	1.431977	1.875393	2.763561	0.0412
MKI	-0.018826	0.438034	-0.042978	0.9665
EI	0.110244	0.139683	2.789242	0.0466
BI	0.102618	0.612973	0.167410	0.8701
ECM(-1)	-4.923748	9.998799	-0.492434	0.6321
C	0.003303	0.059654	0.055368	0.9568
R-squared	0.754749	Mean dependent var		7.612353
Adjusted R-squared	0.643271	S.D. dependent var		5.706795
S.E. of regression	3.408487	Akaike info criterion		5.560978
Sum squared resid	127.7956	Schwarz criterion		5.855054
Log likelihood	-41.26832	Hannan-Quinn criter.		5.590210
F-statistic	6.770387	Durbin-Watson stat		2.694278
Prob(F-statistic)	0.004085			

**Source:** Author's Computations using E-VIEWS 9.0

The existence of cointegration among the variables allows us to implement the Error Correction Modeling technique, which describes the systematic disequilibrium adjustment process and the short-run transmission mechanism. The result of the ECM is presented in Table 4.5 above. We observe that the estimated lagged error-correction term (ECMt-1) emerges as an important channel of influence. The statistically significant error-correction term (apart from that of the exchange rate equation), confirms the existence of long run relationships between stock returns and all the macroeconomic variables. In other words, the series quickly adjusts to eliminate any deviations from the long-run equilibrium relationships that they may share with each other. It is evidence that the coefficient of ECM prove that the variables can adjust at the speed of 492 percent. The independent variables 64 percent variation in stock market capitalization, the model is statistically significant by the value of f-probability. The variables have positive effect on stock market capitalization foreign portfolio investment in money market.

### DISCUSSION OF FINDINGS

The study found that stock investment, equity investment and bond investment have positive effect on Nigeria stock market capitalization within the periods under study, the coefficient of the variables indicates that the variables added 1.4, 0.11 and 0.1 percent to increase in stock market capitalization. the positive effect of the variables confirm our expectations and in line with reforms in the capital market aimed at attracting foreign capitals in to the Nigeria capital market such as the deregulation of interest rate and the internationalization of the capital market. Empirically the findings confirm the findings of Nwonodi (2018) that foreign portfolio investment in bonds and foreign portfolio investment in government securities have negative relationship with All Share Price Index while Net Foreign Portfolio investment, foreign portfolio investment in equities and exchange rate have positive relationship with All Share Price Index. Model two revealed that Net Foreign Portfolio Investment, Portfolio Investments in Bonds and Government securities has negative relationship with market capitalization while equity investment and exchange rate have positive relationship with market capitalization, Osuka, Ezedike and Mbanasor (2022) that foreign portfolio investment shares long run positive relationship with Capital Market Growth in Nigeria, Okonkwo (2016) significant positive relationship existing among foreign portfolio investment, gross fixed capital formation, market capitalization and industrial growth. Onyeisi, Odo and Anoke (2016) that foreign portfolio investment (FPI) inflows might not contribute positively to the increase in stock market when there is no conducive business environment for foreign investments to thrive in Nigeria, the findings of Ohaeri (2017) found a unidirectional causality between capital market performance in one hand and also between foreign portfolio investment and capital flight on the other hand at 5% and 10% levels of significance respectively.



However, the negative effect of the variable contradicts our a-priori expectation and could be traced to monetary and macroeconomic factors. The findings negate the findings of Adebisi and Arikpo (2017) that financial market performance has no long run causal relationship with foreign portfolio investment in Nigeria, Akinmulegun (2018) that Market Capitalization (MCAP) has negative significant effect on foreign portfolio investment in Nigeria while All Share Index (ASI) has positive relationship with foreign portfolio investment and Araoye (2021) that the performance of the Nigerian Economy is directly related to inflow of foreign portfolio investment and foreign direct investment and it is also statistically significant at 5% level.

## CONCLUSION

This study examined the effect of foreign portfolio investment on capital market liquidity in Nigeria. The result of the findings showed that foreign portfolio investment has significant effect on capital market liquidity in Nigeria, there is significant relationship between stock investment and capital market liquidity in Nigeria, there is significant relationship between equity investment and capital market liquidity in Nigeria, there is no significant relationship between bond investment and capital market liquidity in Nigeria and there is no significant relationship between money market investment and capital market liquidity in Nigeria.

## RECOMMENDATIONS

- i. The study therefore recommends that, as part of its stabilization policy, the Nigeria's capital market regulatory authorities should give boost to the market, most importantly in the area of international competitive coupon rates and improved external reserve so that foreign portfolio investment inflow to Nigeria will experience boost by foreign Investors who seek higher investment.
- ii. That policy maker should work on improvement of economic incentives capable of mobilizing external resources to the country to engender macroeconomic stability. A stable economy will attract foreign investment and this result to increased inflow of foreign capital.
- iii. The study recommends the need for bureau-de change market and asymmetric portfolio in the capital market be monitored properly to ensure compliance to financial regulation because their activities are important to inflow of foreign capital to the country.
- iv. Authorities should look for ways of strengthening the workings of the capital market against fraudulence to ensure the free flow of foreign capital into the economy as this would boost domestic investment.

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