



# Foreign Portfolio Investment And Industrial Growth In Nigeria (1986 - 2013)

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## ABSTRACT

This study 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. Foreign portfolio investment on doubt provides the much needed capital for local industries to access for modernization and expansion. However, has this being the case in Nigeria since 1986 when she started posting figures in her capital and financial accounts? 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 this study. The findings of this study revealed that there is 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 is the major driver of foreign portfolio investment in order to keep stimulating industrial productivity in the economy.

**Keywords:** foreign portfolio investment, industrial growth, gross fixed capital formation, market capitalization, capital and money markets.

## INTRODUCTION

Due to the paucity of the much needed capital for industrial production in the less developed economies, there is the need for foreign capital to complement domestic resources, in the wake of growing mismatch between domestic capital stock and capital requirements in these countries. This is concern drives the attention being given to the drive for foreign capital especially in developing economies. According to Fosu and Magnus (2006) and Omisakin et al. (2009) foreign capital inflow is an important vehicle for augmenting the supply of funds for domestic investment. Ngowi (2001) also argued that African countries and other developing countries need substantial inflow of foreign capital to fill the saving and foreign exchange gaps associated with a rapid rate of capital accumulation and growth needed to overcome the widespread poverty in these countries. Ghose (2004); Knill (2005); Vita and Kyaw (2008) were of the view that developing countries are much preferred to developed countries by foreign investors because of

the higher rate of return on investment in these countries. However, whether the foreign investors are willing to take advantage of this high rate of return in the face of high production cost and distorted investment incentives is another issue entirely.

Fosu and Magnus (2006) had argued that foreign capital investment can stimulate local investment by increasing domestic investment through links in the production chain. Ghose (2004) noted that foreign capital investment contributes to economic growth in developing countries through two channels; one of which is externalities in the form of positive productivity spillovers to domestic enterprises. Dauda (2007) were of the view that foreign capital investment increases the gross domestic product and generates a stream of real incomes in the host country, which consequently expands employment, raises wages and salaries, lower commodity prices, increase tax revenue accruable to the government. While Alfaro et al. (2004) concluded that foreign capital investment plays an important role in contributing to economic growth, especially in countries with well-developed financial markets.

However, some authors have contrary views on foreign capital inflow as could be seen in Busse and Hefeker (2005) who 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. Alfaro and Chanda (2003) also was of the view that the potentials of foreign capital investment could be severely impeded if there is absence of well-developed financial markets, which is widely the case in less developed countries including Nigeria. Adam (2002) argued that foreign investment that exhibits market seeking motivations might create distortions in the host economy through monopolies and high barriers of entry. While UNCTAD (2005) observed that foreign investment in Africa has advanced much further and faster than integration internally, especially in structural, institutional and policy trends, and in some cases at its expense.

Vibrant socio-economic and stable political environment are essential fundamentals in attracting foreign investment and making it beneficial in the host economy. Perhaps, this has informed the economic reforms of the fail Structural adjustment Programme (SAP) that was introduced in 1986 in Nigeria. It is on SAP that that Nigeria liberalized her economy and capital markets, as well as improved its capital market's facilities. Up to the mid-1980s, Nigeria did not record any figure on portfolio investment (inflow or outflow) in her balance of payments account. This was as a result of the non-internationalization of the country's money and capital markets as well as the non-disclosure of the information on the portfolio investments in the Nigeria's capital and money markets. Since the internationalization of the capital and money market and the return of democracy, cross-border listing and foreign portfolio investment in Nigeria have being growing steadily and while foreign interest in the country has been rekindled. Foreign investors and portfolio managers seeking cheap equities and high-yielding bonds have continued to be attracted to Nigerian capital market. According to Okereke (2010) portfolio investment inflow by foreign investors during 2009 stood at about N228.986 billion, a monumental increase from N153.457 billion recorded in 2008. This increased further to N350 billion in 2010 (Ikazoboh, 2011) and furthermore to N511.74 billion in 2011 (Onyema, 2012).

The Nigeria Enterprise Promotion Decree (NEPD) was promulgated to regulate foreign investment, with a maximum of 40 percent foreign participation. This has impeded growth in both foreign direct investment and foreign portfolio investment and therefore, slowed down growth in all sectors of the economy including the capital market and money market. The inflow of portfolio investment into Nigeria may also have been limited by the infancy of Nigerian capital and money market. Although the markets have undergone some reforms and innovations which have yielded considerable growth and development in recent years, there is still much to be done to make the markets as robust, vibrant and sophisticated as their counterpart in the industrialized economies.

Conducive business environment and strong legal system have been identified as a major attraction of foreign investment. Irrespective of how vibrant a capital market may be, an unconducive business environment and weak legal system could impede foreign investment. Nigeria business environment is characterized by inconsistent power supply, insecurity, very poor infrastructure, as well as weak and slow judicial process. The Nigerian business environment is highly uncertain with inconsistencies in government policies and non-transparency of government operations. These unfortunate situations could discourage foreign investors from investing in the Nigerian capital and money markets. Hence the major objective of the study is to empirically investigate the impact of foreign portfolio investment on industrial production in Nigeria.

## **LITERATURE REVIEW**

Foreign portfolio investment is a cross-border investment in securities with the intention of profit-making rather than management or legal control. IMF (1993) defined foreign portfolio investment as equity and debt issuances including country funds, depository receipts and direct purchases by foreign investors of less than 10% control. Capital impacts positively on the economy by providing financial resources for investment in key areas like infrastructure, agriculture, solid minerals, manufacturing, banking and other financial services and other real sector areas. The projects could be promoted by government or private sector institutions. The concept here is that foreign portfolio investment can provide the needed resource to the government and private investment in Nigeria for infrastructural and industrial productivity.

### **Theoretical framework**

**Portfolio Theory of International Capital Flows:** developed by Michael B. Devereux and Makoto Saito in 2006, presented a tractable model of international capital flows in which the existence of nominal bonds and the portfolio composition of net foreign assets is an essential element in facilitating capital flows between countries. National monetary policies make domestic and foreign currency denominated bonds differ in the degree to which they can hedge country specific consumption risk. This leads countries to have distinct composition of currency-denominated bonds in their national portfolios. By adjusting their gross positions in each currency's bonds, countries can achieve an optimally hedged change in their net foreign assets (or their current account), thus facilitating international capital flows. Moreover, the risk characteristics of optimal portfolios ensures that current account movements are sustainable - net debtor countries pay lower rates of return on their gross liabilities than they receive on their gross assets. This ensures that the distribution of wealth across countries is stationary.

### **Neoclassical theory of foreign portfolio inflows**

Neoclassical theory of foreign portfolio inflows which predicts that capital should flow from capital-rich countries to capital-scarce countries, and the Lucas Paradox or why private capital doesn't seem to flow from rich to poor countries. It believes in basic economics argument that capital flows from low return avenues to high returns. However, what we find is opposite as capital flows from emerging markets (where returns are high) to developed markets (where returns are low).

### **Models in Endogenous Growth**

In the mid-1980s, a group of growth theorists became increasingly dissatisfied with common accounts of exogenous factors determining long-run growth. They favored a model that replaced the exogenous growth variable (unexplained technical progress) with a model in which the key determinants of growth were explicit in the model. Paul Roemer (1986), Lucas (1988), and Rebel (1991) omitted technological change. Instead, growth in these models was due to indefinite investment in human capital which had spillover effect on economy and reduces the diminishing return to capital accumulation.

The AK model, which is the simplest endogenous model, gives a constant-saving-rate of endogenous growth. It assumes a constant, exogenous saving rate and fixed level of the technology. It shows elimination of diminishing returns leading to endogenous growth. However, the endogenous growth theory is further supported with models in which agents optimally determined the consumption and saving, optimizing the resources allocation to research and development leading to technological progress. Grossman and Hellmann (1991), incorporated imperfect markets and R&D to the growth model.

### **Empirical Literature**

Elekwa, Aniebo and Ogu (2016) investigating the effects of foreign portfolio investment on employment growth in Nigeria employed the ordinary least square (OLS) technique to estimate a single equation model, employed data for the period 1980 to 2014, it was found that in the long term, portfolio investment impacts on employment growth was positively significant.

Baghebo, Apere (2014) studying the impact of foreign portfolio investment (FPI) on economic growth as well as the long run determinants of FPI in Nigeria, employed the ordinary least square (OLS) technique to estimate a single equation model, employed data for the period 1986 to 2011. They concluded that foreign portfolio investment; market capitalization and trade openness has a positive long-run relationship with real gross domestic product in Nigeria.

Eniekezimene (2013) in the study, "the impact of foreign portfolio investment on capital market growth: evidence from Nigeria" using Ordinary Least Squares (OLS) methodology with a Parsimonious Error Correction Model Specification employed data for the period 1986 to 2011. The study concluded that foreign portfolio investment is positive and statistically significant.

Ozurumba Benedict (2012) examined the impact of stock market returns on foreign portfolio investment in Nigeria. The methodology used was single linear regression analysis to capture the impact of foreign portfolio investment and inflation rate on stock market returns as well as granger causality test to determine the direction of causality between the variables. This result shows that foreign portfolio investment has a positive and significant impact on stock market returns while inflation rate has positive but significant impact on stock market returns. In the case of causality test, unidirectional causality runs from stock market returns to foreign portfolio investment in the economy which in turn will foster stock market returns in Nigeria. The study recommends that policies that will attract foreign portfolio investment should be pursued in order to enhance stock market returns.

Ogujuba Kanayo et al (2012) examine the relationship existing among Foreign Private Capital components and Foreign Portfolio Investment, Economic growth and some macroeconomic indicators; interest rate (INTR) and inflation rate (INF) as well as policy implications, there from, using time series data from 1986-2008. A non-restrictive vector Autoregressive (VAR) model was developed while restriction is imposed to identify the orthogonal (structural) components of the error terms – structural vector Autoregressive (SVAR). Analysis indicates that the response of the GDP to shocks from the Foreign Portfolio Investment is not contemporaneous and this is applicable to other variables. It was somewhat sluggish but remains faster to equilibrium compared to the response from NNPI. Restructuring the recursive Cholesky structural decomposition of the impulse response function (IRF), both in the short-run and long-run, the result indicates that the NNPI impact on the GDP at the short-run, while the NDI does not. Also, the INTR was shown to impact on the NNPI in the short-run.

Ekeocha Patterson (2008) opined that Foreign Portfolio Investment though volatile in nature is an important source of fund to support investment in an economy that has a wide saving-investment gap like Nigeria. Incidentally, it has grown recently in proportion relative to other types of capital inflow to Nigeria. The study tries to model the long run determinant of Foreign Portfolio Investment in Nigeria over the period 1986-2006 converted into quarterly series. The variables used are market capitalization, sovereign risk premium, real exchange rate, levels of institutional

quality, investment, real interest rate, Level of financial openness and trade openness. The study applies time series analysis and discovered that there is a long run relationship among some of the variables. The result revealed that Foreign Portfolio Investment is cointegrated with real rate of return on investment in the capital market, real interest rate and investment implying that these variables are bound together in the long run. Foreign Portfolio Investment is positively related to real rate of return on investment in the capital market, real interest rate and investment. But it is, negatively related to real exchange rate, market capitalization, trade degree of openness and institutional quality in Nigeria.

Rachdi and Saidi (2011) in their study of the impact of FDI and FPI on economic growth of 100 developing and developed countries over the period 1990 to 2009, found mixed results. First, portfolio investment coefficient was found to be negative and statistically not significant in developing countries, while the reverse was the case for developed countries. Even after including the random effect in a GMM procedure, the coefficient for developing countries while positive, was still not statistically significant.

**METHODOLOGY**

The empirical model of this study is derived from the theoretical framework specifically of the Portfolio Theory of International Capital Flows, developed by Michael B. Devereux and Makoto Saito in 2006. The flow theory of capital movement is considered most appropriate in unveiling the impact of foreign portfolio investment on industrial growth in developing economy like Nigeria.

**Model specification**

Based on the portfolio theory of international capital flows which attempts to explain the relationship between foreign portfolio investment and capital market growth, and industrial growth the model of the study is specified thus:

$$IPI_t = f(FPI_t, GFCF_t, MCAP_t) \dots\dots\dots(1)$$

Equation (1) is expressed in the explicit lol-log specification thus:

$$LogIPI_t = \alpha_0 + \alpha_1 LogFPI_t + \alpha_2 LogGFCF_t + \alpha_3 LogMCAP_t + \varepsilon_t \dots\dots\dots(2)$$

Apriori theoretical expectation

$$\alpha_1 > 0; \alpha_2 > 0; \alpha_3 > 0.$$

Where:

- LogIPI = log of Industrial Production Index
- LogFPI = log of Foreign Portfolio Investment
- LogGFCF = log ofGross Fixed Capital Formation
- LogMCAP = log of market capitalization
- ε = stochastic term

**Data Sources**

This study employed secondary data collected from the following sources; Central bank of Nigeria’s annual statistical bulletin (various issues including 2006 and 2013 editions); National bureau of statistics’ statistical fact sheets 2012; and the international financial statistics through the following sources: [www.knoema.com](http://www.knoema.com); and [indexmundi.com](http://indexmundi.com).

**PRESENTATION AND DISCUSSION OF RESULTS**

**Stationarity Tests**

In order to test for the time series properties of the data set, the Augmented Dickey Fuller (ADF) test statistic was employed. The unit root test results shown in table1 below revealed that all variables in the study are stationary at first differenced, that is they are integrated of order one I(1).

**Table 1: Stationarity Test**

Unit Root Tests			
Date: 10/08/16 Time: 14:10			
Sample: 1986 2013			
Test Type: ADF			
	Level	First	Order of INT.
LOGIPI	-2.745446	-5.989007	I(1)
LOGFPI	-3.491936	-6.528755	I(1)
LOGGFCF	-1.026047	-4.414255	I(1)
LOGMCAP	-1.973465	-4.231944	I(1)
1% level	-4.339330	-4.356068	
5% level	-3.587527	-3.595026	

*Source: Author's computation*

The unit root test result above shows that, all variables in the study: Industrial Production Index (LogIPI), log of Foreign Portfolio Investment (LogFPI), Gross Fixed Capital Formation (LogGFCF), and log of market capitalization (LogMCAP) are stationary after first differencing at 5 percent level of significance. The result from the stationarity test therefore, calls for further test of long run relationship.

**Co-integration Test**

We now turn to determine the existence of long run equilibrium relationship among our variables. The Johansen and Juselius (1989) co-integration test was adopted in this study as shown below:

**Table 2: Johansen co-integration test**

Date: 10/08/16 Time: 14:14				
Sample (adjusted): 1988 2013				
Included observations: 24 after adjustments				
Trend assumption: Linear deterministic trend				
Series: LOGIPI LOGFPI LOGGFCF				
LOGMCAP				
Lags interval (in first differences): 1 to 1				
<b>Unrestricted Cointegration Rank Test (Trace)</b>				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.930374	70.05336	47.85613	0.0001
At most 1 *	0.845369	32.74881	29.79707	0.0222
At most 2	0.346069	6.614830	15.49471	0.6228
At most 3	0.046613	0.668276	3.841466	0.4137
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 No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.930374	37.30455	27.58434	0.0021
At most 1 *	0.845369	26.13398	21.13162	0.0091
At most 2	0.346069	5.946554	14.26460	0.6201
At most 3	0.046613	0.668276	3.841466	0.4137

Max-eigenvalue 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

*Source: Eviews 7.1 output*

From the result above, the trace statistics and the Maximum Eigenvalue statistics collaborated themselves as they both indicated two cointegrating equations at 5 percent level of significance. Thus there exists long run relationship among the variables of this study.

**Error Correction model**

The confirmation of co-integration makes it possible to estimate the Error Correction Mechanism (ECM), which is a solution to the problem of spurious results associated with estimating equations involving time series data. From over parameterized error correction model a parsimonious (preferred) error correction model is obtained. Therefore, adopting the general to specific framework as shown below:

**Table 3: Parsimonious Error Correction Model**

Dependent Variable: D(LOGIPI)				
Method: Least Squares				
Date: 10/08/16 Time: 14:34				
Sample (adjusted): 1989 2013				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.018541	0.021619	0.857663	0.4240
D(LOGFPI(-1))	0.059256	0.028582	2.073163	0.0835
D(LOGFPI(-2))	0.010513	0.015428	0.681402	0.5210
D(LOGGFCF(-1))	0.110290	0.105503	1.045380	0.0361
D(LOGGFCF(-2))	0.168998	0.117304	1.440686	0.0597
D(LOGMCAP)	0.211035	0.088795	2.376649	0.0340
ECM(-1)	-0.840620	0.292557	-3.898793	0.0080
R-squared	0.797658	F-statistic		3.942118
Prob(F-statistic)	0.039735	Durbin-Watson stat		1.928411

*Source: Author's computation*

The results in table 3 above indicate that there exist positive relationship among the regressand (industrial growth) and the regressors in the model (foreign portfolio investment, gross fixed capital formation, and stock market capitalization). However, foreign portfolio investment was

barely statistically significant at 10 percent level of significance in two year lag (that is, in the previous two year period), implying that foreign portfolio investment is yet to make the desired impact on industrial productivity in Nigeria. On the other hand, market capitalization (which measures growth in the market) and gross fixed capital formation are statistically significant at 5 percent level of significance, indicating that industrial growth in Nigeria depend largely on market capitalization and gross fixed capital formation as shown in the model.

The parsimonious result also revealed that the coefficient of the error correction term is negative and significant at 1 percent level of significance, corroborating earlier findings of Johansen cointegration test, that industrial growth (IPI) and its explanatory variables are indeed, cointegrated. The coefficient of the error correction term (ECM) term, which is speed of the adjustment, indicates that 84 percent disequilibrium is corrected for yearly.

The R-squared of 0.798 indicates that, about 80 percent of the total variation in industrial growth is determined by changes in the explanatory variables. Thus, it is of a very good fit. The F-statistics measuring the joint significance of all the regressors in the model is statistically significant at 5 percent critical value. Furthermore, the Durbin-Watson statistics of 1.92 indicates the absence of autocorrelation in the model.

### CONCLUSION /POLICY IMPLICATION

The study revealed that market capitalization and gross fixed capital formation have significant positive impact on industrial growth in Nigeria. While the study revealed that foreign portfolio investment has weak positive impact on industrial growth in Nigeria. Hence market capitalization as a measure of market growth and a determinant of foreign portfolio inflow needs to be advanced (by more technological innovations in order to attract more inflow of foreign portfolio investments which will further boost industrial growth in Nigeria.

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