



Foreign Capital Inflow & Human Development Index in Nigeria

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ABSTRACT:

This study examined the foreign capital inflow trends and their influence on the Nigerian economy over the time frame of 1986 to 2018. Secondary data were sourced from the Central Bank of Nigeria statistical bulletin of various issues and CBN annual reports. In analyzing the long-run and short-run dynamic relationship between the human development index and selected foreign capital inflow indicator (Foreign portfolio investment), this current study utilized Johansen's cointegration test, Error Correction Model, Granger Causality and other diagnostic tests in capturing the long-run and short-run dynamics of the variables used in the model. The result revealed the existence of a positive and insignificant long-run relationship between Foreign portfolio investment and the human development index. They concluded that since the employed variable shows great causal relevance, it can be finally estimated that if the right steps are taken, the nation could plunge itself into fostered performance by taking the right capital inflow measures. The study therefore recommended that the government should endeavor to mop the leakages in accrued FPI, to foster the influence of this resource on the nation and reverse its insignificant influence and Policy makers and financial institutions should strive to polish the capital inflows system as it greatly predicts the movement of Human Development Index through proper regulation of the foreign inflows and ensuring strict monitoring of illicit activities in the form of cybercrime.

KEYWORDS:

Foreign Portfolio Investment. Human Development Index. Nigeria. Capital and Recurrent Expenditure



Introduction

Equity portfolios affect growth differently from Foreign Direct Investment (FDI). Levine and Zervos (1998, p. 537) suggest that liberalizing constraints on foreign portfolio flows tends to increase domestic stock market liquidity, which could have a positive effect on productivity and growth. On the other hand, the effect of this could be negative on both the economy and households through various channels since large financial shocks that result in a sudden reversal of capital flows can lead to a sharp depreciation of the exchange rate, imports becoming more expensive, and rising prices of food and basic amenities, which will invariably weaken the purchasing power (Demirgüç-Kunt & Levine, 1996).

IMF (2012) categorized factors driving portfolio equity flows to Africa into Pull and Push factors. The Pull factors include stable political environment; economic conditions, resilient nature of the economies against shocks from the global economy, returns on investment in the region which are still high due to limited competition and the untapped potential in the region. The Push factors include the need to diversify investment risk internationally, and the need to avoid unfavorable tax regimes in advanced economies which reduces returns on investment.

In general, portfolio flows tend to be larger in countries with well-organized and liquid markets (Rousseau & Wachtel, 2000). It also allows for diversification of risks by investing in foreign markets although Rousseau and Wachtel (2000) argued that portfolio flows can also be unsettling for an economy due to the fact that changes in market bias can lead to enormous outflows which often times result in exchange rate crises.

Majority of studies have been shortsighted and have capitalized on development overtime, this is as a result of the shortsighted deployment of policies in the various sectors. Similarly, the poor growth experience in the past and the recent surge in capital movement in and out of Nigeria deserve research attention. Could capital flows have been partly responsible for the growth pattern experienced in the economy? The past global financial crisis and its effect on many economies of the world further exemplify the potential negative effects of global financial integration brought about by capital flow could have on a developing nation like Nigeria. An example can be seen where Nigeria's has accumulated a huge external debt in relation to gross domestic product and is currently face with serious debt servicing problems in terms of foreign exchange flow and walloping in abject poverty.

Given the inconsistent view reflected in the literature, the question is whether the various capital flows into the Nigerian economy have contributed less to growth or were indeed part of the cause of the present level of growth of Nigeria. The theoretical controversy has attracted several empirical studies (Levine & Zervos, 1998; Bailliu, 2000; Reisen & Soto, 2001; Chinn & Ito, 2006; Klein & Olivei, 2008; Aizenman *et al.*, 2013). These studies generally tend to reflect conflicting results. The review of several studies on capital flows – focusing on globalization and financial integration – and economic growth by Kose, Prasad, Rogoff & Wei (2009) also emphasizes the inconsistency in the literature and inconclusiveness of the growing literature. An examination of the available global literature reveals that most of them have devoted attention to one particular form of foreign capital inflow rather than comparing the contribution to economic growth of the alternative forms of capital inflows.

For instance, Balasubramanyam, Salisu and Sapsford (1996); Borensztein, Gregorio and Lee (1998); Carkovic and Levine (2005); Hermes and Lensink (2003) and Alfaro, Chanda, Kalemli-Ozcan and Sayek (2004) explored FDI and found conflicting results. Levine and Zervos (1998), Reisen and Soto

(2001), Chinn and Ito (2006), Klein and Olivei (2008) focused on foreign portfolio investment with inconsistent findings. Also, Barajas, Chami, Fullenkamp, Gapen and Montiel (2009), and Giuliano and Ruiz-Arranz (2009) focused on remittances, also with ambiguous results. Burnside and Dollar (2000); Bulir and Hamann (2008) focused on foreign aid, yet again with mixed findings.

A few exceptions though are Reisen and Soto (2001) that studied FDI, equity flows, and long- and short-term bank lending; Aizenman et al., (2013); and Driffield and Jones (2013), who examined the effects of remittances, ODA and FDI together. However, these studies looked at developing countries in general, and were thus not limited to Nigeria. Again, the cross-sectional analysis and panel data analysis used in these studies do not allow for country specific differences as generalization is made for all countries studied based on the average effect obtained. These countries most likely do not have the same economic and institutional structure.

Therefore, to the best of the author's knowledge, there is no study so far that has studied Nigerian foreign portfolio investment as a capital inflow variable against Human Development Index (as a measure of economic development). This current study is designed to close this gap in literature.

Literature Review

Conceptual Literature

Concept of Capital Flow

Capital flows refer to the movement of money for the purpose of investment, trade or business production, including the flow of capital within corporations in the form of investment capital, capital spending on operations and research and development (R&D). On a larger scale, a government directs capital flows from tax receipts into programs and operations and through trade with other nations and currencies. Individual investors direct savings and investment capital into securities, such as stocks, bonds and mutual funds (Investopedia, 2018). It possesses various dimensions in a developing economy like Nigeria. For this current study, the dimension of capital flow chosen is foreign portfolio equity investment.

Foreign portfolio equity investment

Foreign portfolio investments (FPI) are investments in another economy which is referred to as the passive holdings of securities such as foreign stocks, bonds, or other financial assets which is less than 10% of voting stock. FPI can either be equity, which includes shares, stocks, participation, and similar documents that usually denote ownership of equity. It is often easier to sell off the securities and pull out the foreign portfolio investment in a country than FDI, therefore it is said to be a volatile form of foreign capital inflow.

Human Development Index

The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions (Petry, Olofin, Hurrell, Boy, Wirth, Moursi, & Rohner, 2016).

The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean. Refer to Technical notes for more details. The HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment, etc. The HDRO offers the other composite indices as broader proxy on some of the key issues of human development, inequality, gender disparity and poverty (Petry *et al.*, 2016).

Theoretical Foundations

International Capital Movement Theory

This theory is attributable to Obstfeld in the early 1900. It seeks to explain the movement of capital between nations and how they are valued. Despite its poorly organized system, this theory estimates current account balance as vital for the aggregate income determination. It is characterized by the fact that commodities are mobile between countries while factors of production are not (Jones, 1967) with a macro-econometric model based around the concept of flow equilibrium. As Obstfeld (2004) suggest that this phenomenon of 'financial globalization' calls for standard inters temporal view of the current account. This theory is modelled to imply that large debtor countries tend to pay a lesser rate of returns on their external liabilities than their gross external asset earnings based on the assumption that the financial markets are incomplete in the world wealth distribution. This theory is nonetheless attractive based on its consideration on the total analytical characterization of time varying portfolio shares and returns as well as an analytical description of the world distribution of wealth (Devereux and Saiti, 2007).

Empirical Literature

Efoing and Eke (2016) investigated the influence of external capital influx disaggregated into FPI, overseas aids/grants and net export earnings on crop production in Nigeria. The ordinary least square (OLS) regression showed that capital inflow has a positive insignificant effect on crop production in Nigeria. The study therefore advocate amongst other things that government need to put in place adequate incentives that will appeal to more overseas funding in agriculture, while aggressively promoting the export of its agricultural products. It also shows the need for greater overseas aids/grants, whilst such funds must be channelled to different sectors of the economy with the inclination to grow the economy.

Chigbu, et al (2015) tested to understand if capital inflow affects the economies of the growing nations particularly on Nigeria, Ghana and India, with the aid of time series data from 1986-2012. Econometric techniques used were granger causality test and Ordinary Least Square technique in its evaluation. The result shows that capital inflow has a tremendous and vast effect economic growth in Nigeria, Ghana and India. In the case of Nigeria and Ghana FDI, Foreign Port-folio investment and external borrowing have effective and substantial nexus with economic growth while remittances have vast impact on of the three countries put together. Friendly macroeconomic environment was the major recommendation provided by the study with a strong appeal for more inflow of external resources or capital inflow especially to close the gap among savings-investment in the growth of the economies of the three nations.

Olasode (2015) examined the impact of Capital Flows on economic Growth in Nigeria. The data was sourced from National Bureau of Statistics and few others over the time period of 1983 to 2012 were analysed. Augmented Dickey Fuller was employed to test of Stationarity, cointegration and recursive residuals (Cusum). The study revealed a long run equilibrium relationship between economic growth, Foreign Direct Investment Net flow, trade openness, Government expenditure, and exchange rate for Nigeria were established. The recursive residuals show a short-run dynamics and long run parameters of Capital Flows.

Udensi (2015) examined the influence of multi-national co- operations in the economic development of Nigeria. The study analyses how MNCs has served as agents of imperialism in any economy where they operate. It argues however that in spite of the negative activities of MNCs however, they contribute positively in the areas of technological development and creation of employment opportunities.

Adegboye et al (2014) investigated the dynamic effects of external capital inflow on the Nigerian economy was investigated using the Vector Error Correction Mechanism (VECM) technique. Utilizing quarterly data spanning the period 1981 to 2012, employing the VECM procedure, Results from their empirical analysis show that the categorization of foreign capital inflows into direct and portfolio has significant relevance in terms of their effects on economic growth in Nigeria.

Sethi (2013) examined the casual relationship between foreign capital inflows and economic growth in India. Using the pair-wise Granger causality test (1969), he specifically examines causal relationship between foreign capital inflows and economic growth in India. The important observations emerge from pair-wise Granger causality test, which shows there is the long-run equilibrium relationships exist between the following pairs of variables viz., economic growth and Foreign Direct Investment (FDI), economic growth and Foreign Portfolio Investment (FPI).

Aizenman *et al.* (2013) observed that the link between growth and lagged capital flows depends on the type of flows, economic structure, and global growth patterns. In their study of 105 countries from 1990 to 2010 using panel data estimation, they found a robust relationship between FDI (both inflows and outflows) and growth but a smaller and less stable relationship between growth and equity flows. On the other hand, the relationship between growth and short-term debt was found to be nil before the 2008 financial crisis, and negative during the crisis period.

Nkor and Uko, (2013) evaluated the nature of causality between foreign capital inflows and real economic growth in Nigeria. The result of the variance decomposition was in consonance with that of cointegration analysis of causality which revealed that causality runs from Foreign direct investment, (FDI) Foreign portfolio investment (FPI) to real GDP.

Nkoro and Furo (2012). examined the impact of Foreign Capital inflows on economic growth in Nigeria using cointegration variance decomposition, impulse response and block exogeneity tests. The result of the co- integration revealed that causal relationship exists between the foreign capital inflows and economic growth in Nigeria.

Ekeocha, Malaolu and Oduh, (2012) ascertained the long run determinants of foreign portfolio investment (FPI) in Nigeria such that appropriate policies will be pursued to attract same in the long run. FPI has grown recently in proportion relative to other types of capital inflows to Nigeria before the wake of global financial crisis. Incidentally, there is no empirical regularity regarding the determinants of FPI. This study tries to add to the stock of knowledge by modelling the long-run determinants of FPI in Nigeria over the period of 1981-2010 converted into quarterly series. The

variables considered are, market capitalization, real exchange rate, real interest rate, real gross domestic product and trade openness. The study applies time series analysis specifically the finite distributed lag model and discovers that FPI has a positive long-run relationship with market capitalization, and trade openness in Nigeria.

Durham (2003) investigated the impact of foreign portfolio investment (FPI) and other foreign investment (OFI) on economic growth using data from 88 countries during 1977-2000. Their results indicate that FPI and OFI have no effect on growth, which consists largely of foreign bank lending, has a negative effect.

Methodology

Research Design

The study utilizes the Ex-post Factor Research Design as it seeks to utilize past data in estimating the quantitative relationship between variables, with the assumption of no relationship between employed data.

Population for the study

According to Asika (1991), the population is a census of all the elements or subject of interest and may be finite or infinite. The full set of cases from which the sample is taken is called the population (Saunders et al., 1997). The population of the study represents all Capital inflows transactions inclusive of all internal flows in Nigeria as regards other economies. Out of which the Foreign Portfolio Investment was selected for the study against the Human Development Index being the criterion variable.

Sampling/Sample Size

The sample of the study covers the period of 1986 to 2018 (33 years) on the employed dimension of capital inflow: foreign portfolio investment as against Human development index (proxy for economic development).

Date Collection Method

In general, this study utilized secondary sourced time series data. The employed data reflected the Capital indicators and variables which includes, Foreign Portfolio Investment and the Human Development Index (HDI). (i.e. 1986-2018). The employed data were collected from the statistical Bulletin of Central Bank of Nigeria (2018). This study employs the use of E-view 10 analytical tool.

Operational Measures of the Variables

Several measures of foreign capital flows and economic growth have been employed in the literature. The measure of foreign capital flows used in this study is FPI, while the measure of economic development is HDI.

Model Specification

This study adopts the model of Okoro, Nzotta, and Alajekwu, (2019) with slight modification; The study employed one principal channel of international capital inflows which is foreign portfolio investment into Nigeria as the explanatory variables and HDI as the dependent variable. The model of the study was hinged on the Harrod-Domar growth model.

From the foregoing, the models to be estimated can be stated as follows:

$$HDI_t = f(FPI_t) \text{-----} (1)$$

Where:

HDI = Human Development Index

FPI = Foreign Portfolio Investment

In statistics, equation 1 is not sufficient in specification due to the absence of the Constant Parameter and error term. Therefore, we introduce the Constant Parameter and error terms as follows;

$$HDI_t = \alpha_0 + \alpha_2 FPI_t + \mu_i \text{-----} (2)$$

This model is transformed into a log-linear form as follows;

$$\ln HDI_t = \alpha_0 + \alpha_1 \ln FPI_t + \mu_i \text{-----} (3) \text{ Apriori expectation: } \alpha_1 > 0,$$

The employed independent variable is theoretically expected to exhibit a positive relationship with the dependent variables (Human Development Index).

Method of Data Analysis

The following are methods to be utilized in analyzing the study data

Diagnostic Tests

Due to the nature of economic data, this study intends to evaluate the characteristics of employed data utilizing the descriptive statistics and the Unit Root Test:

Unit Root Test: The stationarity of a given series used in the study was determined with the estimation of unit root. Dickey Fuller (DF) unit root test might be estimated from the following forms of equations. Based on the following regression equation:

$$\Delta Y_t = \alpha + \beta T + \delta Y_{t-1} + \gamma_i \Delta Y_{t-i} + \epsilon_t$$

Hypothesis:

$H_0 : \rho > 0$ (there is unit root in the series).

$H_1 : \rho < 0$ (the series are stationary)

The hypothesis is tested based on the t-statistic of the coefficient.

Decision rule:- Reject H_0 if t-statistic is less than critical values, or else do not reject.

Analytical Tools for the Analysis

Going in line with researchers like Ayanwale (2007), the research engages 5 econometric models in achieving the empirical study outputs. The Initial econometric model scrutinizes the Ordinary Least Square Regression Model, followed by the unit root test of the employed study variable by utilizing the Augmented Dickey-Fuller (ADF) test coherent with the timeless works of Dickey and Fuller (1981), Thirdly the econometric model examines the actuality of long-run association amongst

employed variables through the succeeding application of the Johansen (1988) cointegration test and to be conditionally followed by the Parsimonious error correction model which regulates the short-term dynamics to regulate the direction of errors between criterion and predictor variables.

Multiple Regression (Ordinary Least Square):

The standard regression outputs are estimated in two sections which includes the Coefficient Results and the Summary Statistics:

- **Decision Rule:**

Find a p-value and compare it to your significance level

If p-value < α , reject H_0 . If p-value > α , do not reject H_0 .

Unit Root Test

The stationarity of a given series used in the study was determined with the estimation of unit root. Dickey Fuller (DF) unit root test might be estimated from the following forms of equations. Based on the following regression equation:

$$\Delta Y_t = \alpha + \beta T + \delta Y_{t-1} + \gamma_i \Delta Y_{t-i} + \varepsilon_t$$

Hypothesis:

H_0 : $\alpha > 0$ (there is unit root in the series).

H_1 : $\alpha < 0$ (the series are stationary)

The hypothesis is tested based on the t-statistic of the coefficient.

Decision rule:- Reject H_0 if t-statistic is less than critical values, or else do not reject. (Haris & Sollis, 2004) Elliott et al., (1996).

Co-integration

The study applied Johansen Co-integration Rank Test utilized in ascertaining and determining the co-integration rank of variables as a prerequisite or condition to model with Vector Error Correction Model is that there must exist a co-integration relationship. Cointegration test is utilized to determine the existence of a potential long-run equilibrium association amongst two variables (Awe, 2012) and expressed as:

$$Y_t = \mu + T Y_{t-1} + \varepsilon_t$$

$$\Delta x_t = k X^{-1} \sum_{i=1}^k \Gamma_i \Delta x_{t-i} + \Pi x_{t-1} + \mu_0 + \Psi D_t + \varepsilon_t$$

Decision rule:- Accept H_0 : (there exists no substantial co-integrating association) if the t-statistics level is superior to the critical - value or if the p-value is beneath the significance level usually 0.05, otherwise accept H_1 : (there exists a substantial cointegration association) if test statistic is less than the asymptotic critical values or if the p- value is greater than the level of significance.

Parsimonious Dynamic Error Correction Model

This seeks to correct the error in the model. Error Correction Models (ECMs) entails a series of longitudinal models which seeks to appraise the adjustment speed at which a criterion variable returns to equilibrium after a change in an Predictor variable

Estimation of ECMs of the form:

$$\Delta Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 Y_{t-2} + \dots + \beta_p Y_{t-p} + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots + \gamma_q \Delta Y_{t-q} + \epsilon_t$$

(Johansen 1995)

ECMs are useful for appraising the long and short term influences of one time series on another. This study will utilize vector Error correction model.

Post-estimation diagnostic test.

The Post-estimation diagnostics tools utilized in this work entails the normality test and the heteroscedasticity test as described below as follows;

Normality Test

The normal test or normality probability is a plot or graphical technique which is used in identifying the substantial deviations of underlying variables from normality. Which includes specific factors like identifying the existent outliers, skewness, kurtosis, a need for transformations, and mixtures.

heteroscedasticity : Breusch–Pagan test

This is a test used to randomness of variables and their individual level of variability

Decision Rule: If the p-value is below an appropriate threshold (e.g. $p < 0.05$) then the null hypothesis of homoskedasticity is rejected and heteroskedasticity assumed.

Results and Discussions

In further estimating the Economic stimulating effect of Capital Inflows in Nigeria over the period of study (1986 to 2018), this chapter proceeds to the presentation of data, analysis, as well as interpretation of results in the light of the statistical method which has been adopted for the investigation. The test of relevant research hypothesis is also carried out trying to give answers to the research question.

Presentation of Data

The study proceed to present the annualized values of employed data in the Table 1;

Table 1: Human Development Index (HDI), and Foreign Portfolio Investment (FPI), 1986 – 2018.

Year	HDI %	FPI N'B
1986	0.3432	0.1516
1987	0.3487	4.3531
1988	0.3542	2.6118
1989	0.3597	1.6188

1990	0.3652	0.4352
1991	0.3707	0.5949
1992	0.3762	36.8518
1993	0.3817	0.377
1994	0.3872	0.2035
1995	0.3927	5.785
1996	0.398	12.0552
1997	0.404	4.7858
1998	0.41	0.63752
1999	0.413	1.01574
2000	0.421	51.07913
2001	0.431	92.51892
2002	0.44	24.78919
2003	0.443	23.55551
2004	0.462	23.541
2005	0.465	116.035
2006	0.475	360.2915
2007	0.479	332.5478
2008	0.485	157.1572
2009	0.49	70.93849
2010	0.484	556.5851
2011	0.494	792.3602
2012	0.512	2687.233
2013	0.519	2130.18
2014	0.524	832.392
2015	0.527	498.1322
2016	0.53	476.9987

2017	0.532	2604.328
2018	0.53	3834.5

Source: CBN statistical Bulletin (2018).

Due to dissimilar unit of measurement of above variables, the study standardized all variables by pitting each capital inflow avenue against productivity. This ensured a uniform ratio on which further analysis were based upon.

Descriptive Statistics

To access underlying trend amongst employed data, the study employed the descriptive statistics as a form of Univariate Analysis:

Table 2: Descriptive Statistics of Human Development Index (HDI), and Foreign Portfolio Investment (FPI) in Nigeria over the period of 1986 - 2018.

	HDI	FPI
Mean	0.440833	476.8679
Median	0.440000	36.85180
Maximum	0.532000	3834.500
Minimum	0.343200	0.151600
Std. Dev.	0.062117	937.8290
Skewness	0.023575	2.340795
Kurtosis	1.637088	7.493827
Jarque-Bera	2.557159	57.90368
Probability	0.278433	0.184739
Sum	14.54750	15736.64
Sum Sq. Dev.	0.123471	28144742
Observations	33	33

Source: extracted from Eviews-11.

The Human Development Index (HDI) displays a mean value of 0.44 i.e. 44%. This shows that the country is behind in terms of development and below average. Any value below 49% shows an underdeveloped or developing nation. Although, considering the start point of Nigeria in 1986 which is 34.32% has shown that Nigeria has taken minute and steady incremental stride out of its state of underdevelopment. Human Development Index shows an increasing trend overtime, this connotes that the average development of the Nigerian economy has continuously increased in light of recent increments in the Human Development Index, the highest noticeable value of human development in

which Human development rose to 0.5320 is in 2017. It reduced immediate in the year 2018. The standard deviation of this variable (HDI) of 0.062117 shows a low and moderate level of variation in development level overtime. We tie this to the slow pace of the Nigerian economy at deploying its resources and sharpening its absorptive capacity to strive towards industrialization and development. Human Development Index mirrors a normal skewness of 0.023575 and platykurtic curve of 1.637088 which is less than 3. This implies that it has lower value below its sample mean. The Jarque-Bera test shows value of 2.557159 with a probability of 0.278433 which is statistically significant.

Foreign Portfolio Investment (FPI). The least recorded volume of portfolio investment of 0.151600 billion at the beginning of the study period and highest portfolio investment quantum of 3834.5 (2018) shows a widening trend of foreign portfolio investment. This goes to show that Nigerian firms are enjoying higher patronage of their shares by foreign investors. The standard deviation of 937.8290 shows a rapid change in foreign portfolio investment especially in light of the level of foreign direct investment. The skewness of Foreign Portfolio Investment indicates positive value of 2.340795 with a leptokurtic curve of 7.493827, which implies that it has a high value above it sample mean. The Jarque-Bera test shows value of 57.90368 with a probability of 0.184739 which is statistically significant.

Unit Root Test (Augmented Dickey Fuller)

Due to the underlying shocks inherent in time series variables, and also shocks that could be found in the error terms (other variables not captured by the model), we therefore intend to capture the stationarity of the employed variables, since a stationary variables is useful in forecasting and predicting and has a great possibility of the effect of shock to die out gradually, while non-stationary data are not suitable for long run test.

Table 3: Results of Stationarity (Unit Root) test:

Variable	ADF T-statistics		Test Critical Values			Probability Level	Order of Integrati on
	At Level	Ist diff	1%	5%	10%		
HDI	-0.260579	-4.578579***	-3.679322	-2.967767	-2.622989	0.0006	I(1)
FPI	-0.929257	-4.614372***	-3.752946	-2.998064	-2.638752	0.0004	I(1)

Source: Extracted from Eviews-11.

Going by the respective test critical values of level, it can be identified that the two variables are stationary at the first difference (1) showing a great level of integration amongst variables. Table 3 also goes to show that employed data possess trends capable of being used for analysis as their values rotate around their respective mean. Since the prerequisite of co-integration is the integration of all variables at same level, this parameter therefore leads to the co-integration of employed variables.

Co-integration Test

The researcher proceeds to test the long run relationship between capital inflow dimensions and real Human Development Index.

Table 4: Co-integration Test (Johansen Co-integration)

Date: 07/12/19 Time: 16:58

Sample (adjusted): 1988 2018

Included observations: 30 after adjustments

Trend assumption: Linear deterministic trend

Series: HDI FDI FPI FDP FAD RMT

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.972686	219.8887	69.81889	0.0000
At most 1 *	0.881704	111.8780	47.85613	0.0000
At most 2 *	0.627483	47.84107	29.79707	0.0002
At most 3 *	0.397270	18.21688	15.49471	0.0190
At most 4	0.096015	3.028285	3.841466	0.0818
At most 5	0.082636	2.384628	4.372517	0.1837

Trace test indicates 4 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 *	0.972686	108.0107	33.87687	0.0000
At most 1 *	0.881704	64.03691	27.58434	0.0000
At most 2 *	0.627483	29.62419	21.13162	0.0025

At most 3 *	0.397270	15.18859	14.26460	0.0356
At most 4	0.096015	3.028285	3.841466	0.0818
At most 5	0.082636	2.384628	4.372517	0.1837

Max-eigenvalue test indicates 4 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: Extracted from Eviews-11

The co-integration test seeks to empirically define the Long-run association/relationship between a given set of variables i.e. identifying the stochastic drift between capital inflow dimensions and real Human Development Index (to know if the variables move together). Carried out using the Johansen co-integration output. Assuming all study variables as endogenous using the trace and Eigenvalue test.

From the trace and Eigenvalue test in Table 4, it can be seen that there exists four (4) co-integrating equation, which were all signed respectively. Judging by the signed rank, there exist a long run association and movement amongst employed variables. It can therefore be established that there exist evidence of long run relationship amongst employed variables, the study therefore proceeds to the error correction model. Due to existing long relationship, the study seeks to adjust for disequilibrium in the long and short run.

Error Correction Model

Table 5: Error Correction Model Output

Dependent Variable: D(HDI)

Method: Least Squares

Date: 07/12/19 Time: 16:54

Sample (adjusted): 1988 2018

Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3367.429	400.6583	8.404741	0.0000
D(FDI)	5.346575	1.194113	4.477445	0.0001
D(FPI)	0.011679	0.716901	0.016291	0.9871
D(FDP)	1.080128	2.037482	0.534107	0.5975
D(FAD)	2.317261	1.406453	1.647592	0.1125

D(RMT)	0.002724	0.000926	2.941543	0.0066
ECM(-1)	-0.900505	0.130222	-6.915149	0.0000
R-squared	0.731366	Mean dependent var	3623.302	
Adjusted R-squared	0.675400	S.D. dependent var	3379.242	
S.E. of regression	1925.278	Akaike info criterion	18.14039	
Sum squared resid	88960715	Schwarz criterion	18.42062	
Log likelihood	-266.1058	Hannan-Quinn criter.	18.23004	
F-statistic	13.06815	Durbin-Watson stat	2.005603	
Prob(F-statistic)	0.000003			

Source: Extracted from Eviews-11.

The error correction estimate in Table 5 shows that in the long run, the independent variables (foreign capital inflows) jointly account for up to 73.14 percent of variation in the development level i.e. Human Development Index. The error correction estimate (ECM) value of -0.900505 shows that disequilibrium and variations in the long and short run can be adjusted backwards by 90.05% based on the expected negative value of the error correction model coefficient. The F-statistic at the probability level of 0.0000003 shows that the model is statistically fit and the Durbin Watson was seen to be within the relevant range based on its development level of 2.005603 showing a negative serial correlation between employed variables and is within an acceptable level. To know the direction and nature of how changes in one variable affect the other variable, the study proceeds to undertake the Granger causality test.

Granger Causality Test

Table 6: Pairwise Granger Causality Test

Pairwise Granger Causality Tests

Date: 07/12/19 Time: 16:57

Sample: 1986 2018

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FPI does not Granger Cause HDI	30	1.05114	0.3645
HDI does not Granger Cause FPI		13.5798	0.0001

Source: *Extracted from Eviews-11*

Using the 0.05 (5%) significance level as the threshold for significance as probability level above 0.05 significant level as seen as unsubstantial and therefore showing no causal tendency and vice versa, the granger Causality tests shows no bidirectional causal relationship between employed capital inflow indicator (FPI) and Human Development Index (HDI). Unidirectional causality is observed unilaterally amongst employed variables it can be seen to be flowing in the following direction:

From Human Development Index to Foreign Portfolio investment. This shows that the nation's development is likely to change or increase only when there are changes and inflows of foreign portfolio investment. This goes to show that the economy's development is largely determined and influenced by inflows in terms of foreign portfolio investments in her stock market.

Hypotheses Testing

The t-statistics is used to test the short run individual hypotheses stated in the null and alternate forms as follows.

Nigeria.

Hypothesis One:

H₀₁: There is no significant relationship between Foreign Portfolio Investment and Human Development Index in Nigeria.

H_{A1}: There is a significant relationship between Foreign Portfolio Investment and Human Development Index in Nigeria.

The Foreign Portfolio Investment t-statistic shows a coefficient of 0.016291 is less than the tabulated value of $\pm 1.98/2$ and at a probability level of 0.9871 which is greater than the 0.05 (5%) significance level (Table 5). The study therefore retains the null hypothesis and does not accept its alternate hypothesis. We therefore concluded that there is no significant relationship between Foreign Portfolio Investment and Human Development Index in Nigeria.

Implication of Findings

Foreign Portfolio Investment is identified to possess positive but insignificant relationship with Human Development Index showing how furtive the foreign portfolio investments fund has been towards the economic growth and performance of the nation which may likely be due to misappropriation and leakages coupled with poor economic, social and political stability.

The above development downplays the benefit of the international capital movement theory which promises significant influence of financial inflows on economic performance. A situation found doubtful especially in light of portfolio investment which could be linked to underdeveloped stock market and improper fund management.

Conclusion

The fact that the employed variable shows great causal relevance, it can be finally estimated that if the right steps are taken, the nation could plunge itself into fostered performance by taking the right capital inflows measures.

Recommendations

In view of the discovered behaviors and relationships among employed variables the study proffers the following recommendation: For the nation to have a significant contribution of its level of capital inflow (FPI) to its economic growth, sustained policy aimed at the following should be adhered to:

- Government should endeavor to mop the leakages in accrued FPI, to foster the influence of this resource on the nation and reverse its insignificant influence.
- Policy makers and financial institution should strive to polish the capital inflows system as it greatly predicts the movement of Human Development Index through proper regulation of the foreign inflows and ensuring strict monitoring of illicit activities in the form of cybercrime.

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