

FOREIGN PORTFOLIO INVESTMENT IN NIGERIA

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Abstract

The aim of the study was to analyze the major determinants of Foreign Portfolio Investment inflows in Nigeria taking Governance (Corruption, Internal Conflict, Law and Order and Socio-Economic Condition) into consideration, using data sourced from CBN Statistical Bulletin and the World Bank Development Index (2008) from 1970 – 2010. The obtained results from the analysis were made possible using the Granger Causality Test, Johansen Co-integration and the Error Correction Mechanism Estimation Test, having tested for Unit Root to avoid spuriousity. The study finds a long run relationship amongst the variables of FPI and reveals also that, changes in real exchange rate, inflation rate, stock market capitalization had no effect on the inflows of FPI under these periods. Governance in term of internal conflicts and corruption have a significant negative effect on FPI inflows.

Keywords: *Foreign Portfolio Investment, Governance, Co-integration Test, Error Correction Mechanism.*

1.0 INTRODUCTION

There are two forms of foreign capital flows namely; Public and Private investment flows. The Public flow can either be investment through bilateral flow between two countries or multilateral flows by institutions like IMF, World Bank which could be concessional or non concessional, conditional or non conditional and credit flow from banks, stock exchange markets operating at international level or the movement of all or combination of human material, technology management and ownership (Seaman, 2003). The Private Foreign

Investment (PFI) is both the Foreign Portfolio Investment (FPI) and Foreign Direct Investment (FDI).

FPI includes a variety of instruments that are traded (or tradable) in an organized and other financial markets: bonds, equity, and money market instruments (equity and debt securities). Historically, FPI is seen as a source of foreign private capital to any economy. It plays a prominent role in positioning a country for socio-economic development. Because no country is an island on its own in term of resources needed to stimulate investment, generate employment and foster economic growth, recourse must be made from time to time to encourage foreign investment to bridge the financial gaps between revenue and planned expenditure, balance of payment differences, term of trade, e.t.c .

1.1 STATEMENT OF THE PROBLEM.

Over the years, the importance of foreign capital flows as a vehicle for economic development has been recognized by successive government. However, the poor and immature state of Nigeria capital and money market may have been responsible for the poor inflow of foreign portfolio investment. Although efforts have been made in making these markets more effective, yet, they are not as sophisticated and vibrant as their counterpart in developed nations, thus cannot compete favourably for investment funds.

The major thrusts in the inflow of FPI in the country cannot be unlinked with the uprising of violent and conflicts that featured the country, particularly the oil region, the emergence of terrorist secs (for example, book haram) which presents the country as a risky place for investment. Corruption and misappropriation of funds by

public holders and those in place of authority, internal conflict, Weak legal system, poor socio-economic infrastructure uncondusive business environment, inconsistencies in government policies and non transparency in government operation amongst others contributes to low inflow of foreign private investment.

In the light of this, this study intends to examine the main determinants of foreign portfolio investment bearing in mind the prevailing condition of the country, in term of governance (internal conflicts, corruption, socio-economic condition and rule of law)

1.2 OBJECTIVE OF THE STUDY.

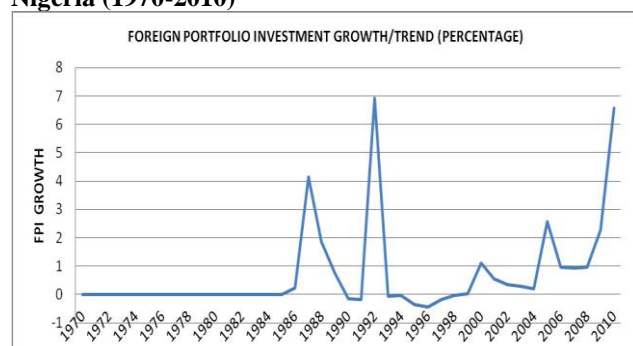
The main objective of this study is to examine the determinants of foreign portfolio investment taking into consideration four governance indicators (internal conflicts, corruption, law and order and socio-economic condition). As the major limitation in this area of study is the non consideration of governance in determining the flow of foreign investment as this is one of the most important factors that determine the magnitude of flows and it is most considered by investors coming into Nigeria.

2.0 BACKGROUND OF THE STUDY

2.1 Development and Trends of Foreign Portfolio Investment in Nigeria.

There is no record on foreign portfolio investment (both inflow and outflow) on the Nigeria balance of payment till 1986. The nil record of foreign portfolio investment inflow is attributable to the absence of foreign investors in the economy(Eniekezimene, 2013). Obadan (2014), this is majorly as a result of the non internalization of the country's money and capital markets as well as the non disclosure of information on the portfolio investment in foreign capital or money markets.

Figure: 2.1: Trend of Foreign Portfolio Investment in Nigeria (1970-2010)



Source: Author's Analysis

The growth in foreign portfolio investment in Nigeria has been unstable for sometimes as it is either increasing or decreasing and at time was negative in the following years

1990, 1991, 1993-1998. It has its highest inflow of 6.92% and 6.57% in 1992 and 2010 respectively. There was no major growth as it was below 1% in most years except for 1987, 1988, 1992, 2000, 2005, 2009 and 2010.

The growth in foreign investment over time and the growth in real Gross Domestic Product show that apart from the inflow of foreign private investment (both FDI and FPI) there are other key factors that contribute to the increases or decreases in the GDP. These are consumption, investment, government expenditure export, import e.t.c. notwithstanding, the contribution of foreign private investment, particularly, foreign portfolio investment can still be explored.

Table 2.1: The Inflow of Foreign Portfolio Investment from 1970-2010

YEAR S	FPI INFLOW(NOMINAL % GROWTH)N' MILLION	RGDP (N 'MILLION)	FPI AS A %RGDP
1970	-	4219	-
1971	-	4715.5	-
1972	-	4892.8	-
1973	-	5310	-
1974	-	15919.7	-
1975	-	27172	-
1976	-	29146.5	-
1977	-	31520.3	-
1978	-	29212.4	-
1979	-	29948	-
1980	-	31546.8	-
1981	-	205222.1	-
1982	-	199685.3	-
1983	-	185598.1	-
1984	-	183563	-
1985	-	201036.3	-
1986	151.6	205971.4	0.073602

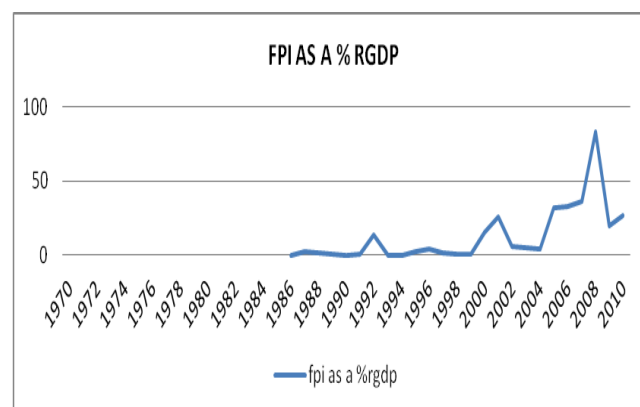
1987	4353.1	204806.5	2.12547
1988	2611.8	219875.6	1.187853
1989	1618.8	236729.6	0.683818
1990	435.2	267550	0.162661
1991	594.9	265379.1	0.22417
1992	36851.8	271365.5	13.58013
1993	377.0	274833.3	0.137174
1994	203.5	275450.6	0.073879
1995	5785.0	281407.4	2.055738
1996	12055.2	293745.4	4.103962
1997	4785.8	302022.5	1.584584
1998	637.5	310890.1	0.205056
1999	1015.7	312183.5	0.325354
2000	51079.1	329178.7	15.51713
2001	92518.9	356994.3	25.91607
2002	24789.2	433203.5	5.722299
2003	23555.5	477533	4.932748
2004	23541.0	527576	4.462106
2005	180090.32	561931.4	32.04845
2006	194585.82	595821.6	32.6584
2007	231942.44	634251.1	36.5695
2008	560498.52	674889	83.05047
2009	122347.50	616723.3	19.83831
2010	167847.68	630421.2	26.62469

Source: Based on the Figures from the Central Bank Statistical Bulletin, 2010.

Table 2.1 shows the percentage of foreign portfolio investment as a ratio of the real gdp. In 1986 and 1994, Nigeria had a very low inflow of foreign portfolio investment of 0.07% in both years, showing that FPI was at the minimum relative to other forms of investment that comes into the country.

The inflow of FPI to real GDP had its highest contribution in 2008 with 83.05%, 32.66% in 2006 and 32.04% in 2005. This indicate that the inflow of FPI contributed little to economy growth except for in 2008.

Figure 2.2: The Inflow of Foreign Portfolio Investment from 1920-2010



Source: Author's Analysis

3.0 Theoretical Review on Foreign Portfolio Investment

Investors behaviour are featured by choice under risk and uncertainty. The capacity to understand and therefore model this has been enhanced immensely following the expected utility theory of Von Neuman Morgenstein of 1947. Given certain axioms, the theory postulated that choice under uncertainty will be made so as to maximize the investors expected utility. Thus we could say there are three theories, namely; Mean Variance Portfolio Theory (MVPT), Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Model (APT).

The Mean-Variance Portfolio Theory (MVPT) is developed by Markowitz (1952). It considers only the first two moments of expected utility theory (mean and variance). His theory implies that investors should optimize the first two moments of their expected utility. The relationship between an asset mean and variance is then used to construct an efficient set showing the best mean-variance combination positions by combining all assets in portfolio where an investor then chooses any point on the set depending on his choice, thereby rendering other points useless.

Capital Asset Pricing Model (CAPM) developed by Sharpe Lintner and Mossin is built on the pillar of normative assumption that all investors hold the same portfolio of risky asset (market portfolio). They utilize the safe asset to construct a market portfolio (tangency portfolio). Where the measure of risk for a single asset is its covariance with the market (undiversified risk), such that any asset that is highly correlated with the market earns a higher rate of return. The assumptions of CAPM of perfect market, complete information and normally

distributed returns are however more violated than satisfied, failure to satisfy them is even more pronounced in the emerging market. Secondly, global risk factor, a single period valuation while most projects are multi-periods. All these led to Arbitrage Pricing Theory (APT). The APT is as well as the traditional-CAPM because it assumes that investors are myopic agent with short horizons, hence they fail to hedge.

The Inter-temporal CAPM by Merton (1973) shows that investors will behave only in the traditional CAPM manner when investment opportunities available to them are constant. However, in situation where this is not so, as often the case, the traditional CAPM needs to be augmented with a hedging term that takes care of any unfavorable shift in the opportunities set.

Part of the critics of this theory is that it fails to identify macroeconomics variables that constitutes inter-temporal risk. The consumption-CAPM is an improvement on Merton work by allowing for the aggregation of several risk factors into one. This theory shows that through the dynamic optimization process of changing consumption now to influence consumption later, an asset risk premium is inversely related to the covariance between asset return and the future marginal utility of an investor. Basal and Yaron (2004) tried to correct some of the shortcomings of consumption- CAPM (among which is that consumption data and is often measured with large errors) by developing a long run risk CAPM which introduce a long run risk state variable that simultaneously drive aggregate consumption growth and aggregate dividend growth. The assumption of normally distributed return is relaxed in some variance by incorporating a higher order moment into the price risk relation.

The search by international investors to diversify portfolio leads to the international version of these theories. This allows for the pricing of international asset and incorporate exchange rate risk when there are deviation from Purchasing Power Parity (PPP). According to Frankel (1982) the one country CAP also applies in an international context. With no barriers, market integration, the global value weighted market portfolio is the relevant risk factor, with purchasing power parity holding exactly. Here, investors from all countries continue to have homogenous expectation of the distribution of asset returns and all results of the one country CAPM apply. This implies that all investors no matter their risk aversion and country of residence distribute their wealth between risk free asset of their country of residence and a common portfolio of risky asset. The International Capital Asset Pricing Model (I-CAPM) implies that the total portfolio risk can be reduced by holding foreign assets whose returns are negatively correlated with the return of the home country assets. This suggests that the cross border equity holding are (i) negatively related to the degree of correlation between home and foreign asset. (ii) positively related to the returns of the foreign assets.

International Arbitrage Portfolio Theory (I-APT) developed by Ross and Walsh (1983) is a multifactor model that considers additional determinants of expected returns. The international diverse consumption tastes and relative price uncertainty. Fernandez-Arias and Mortiel (1996) developed Return and Credit Worthiness Model and postulate that long run and short run changes in equilibrium capital flows are due to the initial shocks of liabilities, changes in pull factors such as domestic economic environment and push factor like external financial conditions. The money demand and productivity framework by UI Haque et al (1997) essentially traces the causes of capital flows to changes in money demand function, productivity of domestic capital and external factors such as international interest rate. An upward shift of money demand function and increases in productivity of domestic capital will generate capital inflows, *ceteris paribus* and vice versa. These factors usually results in sustained capital flows. Falling interest rate, all things being equal will cause inflow of capital while rising rates will cause outflows.

Feddeke (2002) developed Portfolio Allocation Model (PAM), which postulate that capital flows are driven by two classes of determinants which are rates of return and risk factors with positive responses to rates of return and negative to risk.

PAM is a dynamic optimization model in which an individual seeks to maximize the present value of his utility derived from expected return on a portfolio of capital assets driven by three component of the equilibrium capital flows, namely; (a) initial divergence effect (b) impetus effect (c) time path effect. The initial divergence effect is the ratio of initial divergence between foreign and domestic (the starting level of capital stock) and inter-temporal equilibrium holdings of foreign and domestic assets respectively. The stronger the divergence is, in foreign assets holdings the greater the capital inflows. The second effect depends crucially on the strength of the social rate of time discounting, marginal rate of return, marginal cost of adjustment and appropriation risk factors which are due to harsh domestic macroeconomic and policy environment. This serves to enhance or dampen the divergence effect. The time path effect features the optimal mix of flows of funds to foreign and domestic assets as they approach their inter temporal equilibrium values. It also reinforces either positively or negatively the first two effects.

Among also is the pull and push factors theory. According to Lopez Mejia (1999) private capital flows response greatly to both internal and external factors. This combines those factors that are essential for the inflow and outflow of investment. The pull factors are those factors that encourage the inflow of investment into a country while the push factors are those that attract investors to invest outside their resident countries, that is, those factors that are exogenous to the recipient country and takes place in countries that are capital suppliers i.e

mostly industrialized countries. Push factors are attributed to what happen at the international level such as the international interest rate, business cycles of industrialized countries coupled with the increases in interest towards diversification (Calvo et al. ;1996, Calvo and Reinhart, 1998).

3.2 Empirical Review on Foreign Portfolio Investment

In a study of ten Latin American countries Calvo et al.(1993) using principal component analysis to determine the degree of co-movement along foreign reserves and real exchange rates as well as structural vector autoregressive(SVAR) models to determine causal influences discovered that real exchange rate and reserves have large bivariate correlation with several US. Financial returns variables. Here foreign factors play a major role in this, using decomposition and impulse response function. It was established that base on the country, foreign factor was responsible for 30% to 60% variance in real exchange rate and reserves. However, Classen et al (1998) shows that increases in international interest rate and higher OECD growth rate were associated with increased capital flows to central and eastern Europe in the 1990s, pointing out that OECD growth rate enhances the supply of foreign savings available for these countries.

In a study of 22 developing countries by Hernandez and Rudolf (1994). Using panel data regression analysis with variables like lagged domestic consumption and investment rates , net external debt to GDP, external interest rate, real exchange rate variability and Brandy Bond deal. Findings show that domestic worthiness indicators have significant influences on portfolio flows but insignificant effect on international interest rate.

In 2008 De-vita and Kyaw study the determinants of FDI and portfolio flows to 32 developing countries, covering the period between 1990-2004, using a panel co-integration analysis. The explanatory variables are economic activity in industrialized countries, international interest rate with domestic factors like domestic productivity and money growth discover that domestic productivity is the dominant determinant of FDI flow while domestic money growth is the major factor that attract portfolio flows to developing economies.

Agarwal (2006) examines the determinants of foreign portfolio investment and its impact on the national economy in 6 developing Asian countries. The regression result shows that inflation rate, real exchange rate, index of economic activities and the share of domestic capital market in the world stock market capitalization are 4 significant determinants of FPI. Inflation rate is negative while the other 3 variables are positive. FDI, Current Account Deficit (CAD), total foreign trade are found to be statistically insignificant.

Goldstein et al (2007) postulate that countries with high probability of an aggregate liquidity crisis will be the source of more FPI and less FDI. As the probability of an aggregate liquidity increases agents know that they are more likely to sell investment early, in which if they hold FDI, they will get a low price since buyers do not know whether they sell because of an individual liquidity need or because of adverse information on the productivity of the investment. As a result the attractiveness of FDI decreases and the ratio of FPI to FDI increases.

Mortiel and Sharma (1997), the portfolio equity flow to Africa have been quite small, though there are encouraging signs of growing investors interest. The key factor attracting portfolio equity inflow into Africa is openness to foreign investors, while the constraining factors are political instability and weak macroeconomic fundamentals like high transaction cost arising from corruption and others and structural weaknesses. For example, according to Ahoritor and Olopoenia (2010), the inflow of FPI has been on decline for most of Sub-Saharan countries whose commercial banking loan remain negative or too low due to low level of credit worthiness resulting from high political risk, weak growth, macroeconomic instability, export performance and high level of indebtedness, Nigeria inclusive. According to Mortiel and Sharma (1997), the general theory underlying any empirical analysis is that long term private capital flows are determine by relative rates of return at home and abroad and the relative risks associated with such investments.

Ekeocha (2008), modeling the long run determinants of foreign portfolio investment in Nigeria using these explanatory variables; market capitalization real exchange rate sovereign risk premium, level of institutional quality, real interest rate, level of financial openness and trade openness, shows that in the long run, FPI has a positive relationship with growth real non oil GDP, real interest rate, degree of financial liberalization, and institutional quality(law and contract enforcement) but negative relationship with market capitalization(size), trade openness and real exchange rate

From the empirical studies, most studies on the determinants of FPI or private capital flow employed Ordinary Least Square regression analysis, a panel data analysis for multi-countries. Some used principal component analysis, while others adopted Vector – autoregressive technique. This study makes use of time series data covering the period between 1970-2010, using OLS (multiple regression) to ascertain the major determinants of FPI into Nigeria as a contribution to other works that use the technique.

4.0 METHODOLOGY

4.1 Model Specification

Foreign Portfolio Investment

The determinants of Foreign Portfolio Investment (FPI) can be derived from the push and pull theory of foreign investment. Due to the fact that this study is meant to determine the inflow of portfolio investment only, therefore we use the pull theory.

In functional term

$$FPI = f(\text{Pull Factors}) \text{----- Eqn (4.8)}$$

$$FPI = f(\text{market size, country condition, openness, liquidity, government financial stance, political vulnerability}) \text{----- Eqn (4.9)}$$

Likewise here, we have five model with and without governance

Model 1

$$FPI = f(\text{RGDP, INFL, RINT, OPN, EXCH, MRKCAP, DEBT}) \text{----- Eqn (4.10)}$$

Subsequent models are with governance index (corruption, internal conflict, law and order and socio-economic condition) each one being analysed independently.

Model 2,3,4 and 5.

$$FPI = f(\text{RGDP, INFL, RINT, OPN, EXCH, MRKCAP, DEBT, GOV}) \text{----- Eqn (4.11)}$$

The multivariate specification of equation (4.8) and (4.9) for estimation is

$$FPI = \beta_0 + \beta_1 \text{RGDP} + \beta_2 \text{INF} + \beta_3 \text{RINT} + \beta_4 \text{OPN} + \beta_5 \text{EXCH} + \beta_6 \text{MRKCAP} + \beta_7 \text{DEBT} + \mu \text{--- Eqn (4.12)}$$

$$FPI = \beta_0 + \beta_1 \text{RGDPG} + \beta_2 \text{INF} + \beta_3 \text{RINT} + \beta_4 \text{OPN} + \beta_5 \text{EXCH} + \beta_6 \text{MRKCAP} + \beta_7 \text{DEBT} + \beta_8 \text{GOV} + \mu$$

$$\begin{matrix} & (+) & & (-) & & (+) & & (+) \\ (+) & (+) & & (-) & & & & \end{matrix}$$

where:

FPI – Foreign Portfolio Investment (FPI as a percentage of current real Gross Domestic Product)

RGDP – Real GDP

INFL – Inflation rate

RINT – Real Interest Rate

EXCH – Real Exchange Rate

OPN – Openness

MRKCAP – Stock Market Capitalization as a ratio of real GDP

DEBT – Government Debt (both domestic and external) as a ratio of real GDP

GOV – Governance (corruption, internal conflict, law and order and socio-economic condition).

μ – Error term

Specifying in Error Correction form, we have;

$$\Delta fpi_t = \beta_0 + \sum_{i=1}^k \beta_{1i} \Delta fpi_{t-i} + \sum_{i=1}^k \beta_{2i} \Delta rgdp_{t-i} + \sum_{i=1}^k \beta_{3i} \Delta exch_{t-i} + \sum_{i=1}^k \beta_{4i} \Delta infl_{t-i} + \sum_{i=1}^k \beta_{5i} \Delta rint_{t-i} + \sum_{i=1}^k \beta_{6i} \Delta debt_{t-i} + \sum_{i=1}^k \beta_{7i} \Delta opn_{t-i} + \sum_{i=1}^k \beta_{7i} gov_{t-1} + \sum_{i=1}^k \beta_{7i} \Delta mrkcap_{t-1} + \lambda ECM_{t-1} \text{-----Eqn(4.14)}$$

4.2 Estimation Techniques

The common practice among econometrician is to first test the nature of time series data whether they are stationary or non-stationary using various unit-root test. Here, with the aid of the Eview7 (Economic view, 7th edition) analytical software package, we employ the Augmented Dickey Fuller (ADF) and Philips-Perron (PP) methods to obtain results on the state of stationarity of the variables involved before advancing to key econometric technique and required test.

First, we test for the stationarity of the variables, therein determining their order of integration (if at I(0) or I(1), and then investigate using the Johenson Co-integration test to confirm the existence of a co-integrating relationship (possibility of a long run relationship among the variables), before settling for an appropriate econometric technique. Meanwhile co-integration test was limited to the two key concern of the study – first, the FDI determinants, and then the FPI determinants. To quell the inquisition of co-integrating relationship in the inclusion of governance measure, obtained parameter estimate of the error correction term as specified in the models above will serve as an indicator of possible long term relationship among the variables (as a significant and negative ecm, is the sufficient condition to confirming the existence of a co-integrating relationship) this will be later confirmed as the results unfolds.

4.3 Sources of Data

The data used was an annual time series data from secondary source covering the period between 1970-2010. They were collected from the Central Bank of Nigeria Statistical Bulletin and the World Development Indicator (WDI).

5.0 EMPIRICAL RESULT

In this chapter, effort is made to analyze the major determinants of Foreign Portfolio Investment (FPI) in Nigeria. This is done first by confirming the stationarity

of the variables involved and then the impact of these variables on FPI.

5.1 Presentation and Analysis of Results

5.1.2 Presentation and Analysis of Results of the Determinants of Foreign Portfolio

Investment in Nigeria.

Unit root tests

Table 5.4 summarizes the result of unit root tests conducted on all the variables of Foreign Portfolio Investment (FPI) using the Augmented Dickey Fuller (ADF) and Philip Perron (PP) test at both level and first difference. It shows that at 5% using the ADF and PP methods, the real exchange rate (EXCH), the growth rate of real GDP, inflation rate (INFL) and the country's openness (OPN) are all stationary at only first difference. While real domestic interest rate (DINT) is both stationary at level and first difference based on the two methods. The foreign portfolio investment as a percentage of real gross domestic product (FPI) and total debt as a percentage of real gross domestic product (DEBT) are stationary only at level using ADF method, but using the PP method these are found to be stationary at both level and first difference. While, market capitalization is not stationary using ADF but found to be stationary at first difference using Philip Perron method. Also, governance is excluded from this analysis.

Table. 5.1 :Unit Root Test of FPI

	ADF		ORDER OF INTEGRATION	PP		ORDER OF INTEGRATION
	Level & intercept	First difference & intercept		Level & intercept	First difference & intercept	
FPI	-3.3640** (-3.0656)	-1.4568 (-3.0656)	I(0)	-4.8872* (-2.9981)	-13.1796** (-3.0049)	Both I(1) and I(0)
RGDP	-0.9627 (-)	-2.6540* (-)	I(1)	-0.1333 (-)	-2.8143* (-)	I(1)

	2.9981) -2.5541 (-3.0522)	2.6388) 3.3847** (-3.0810)		2.9919) -2.4003 (-2.9919)	2.9981) -4.4946** (-2.9981)	
INFL	-2.5541 (-3.0522)	-3.3847** (-3.0810)	I(1)	-2.4003 (-2.9919)	-4.4946** (-2.9981)	I(1)
DINT	-3.4279** (-2.9919)	-7.3084** (-2.9981)	Both I(1) and I(0)	-3.4366* (-2.9919)	-13.1939** (-2.9981)	Both I(1) and I(0)
OPN	-1.3238 (-2.9981)	-8.5950** (-2.9981)	I(1)	-1.3540 (-2.9919)	-8.4937** (-2.9981)	I(1)
EXCH	-0.2712 (-2.9981)	-4.3835** (-2.9981)	I(1)	-0.2712 (-2.9919)	-4.3835** (-2.9981)	I(1)
MRTCAP	-1.4640 (-2.9919)	-0.3035 (-3.0404)	None	-1.3428 (-2.9919)	-9.2435*** (-2.9981)	I(1)
DEBT	-3.4279** (-2.9919)	-2.5264 (-3.0656)	I(0)	-3.4366* (-2.9919)	-13.1939** (-2.9981)	Both I(1) and I(0)

Source: Author computation

Note: ***, **, and * indicates significance as 1%, 5% and 10% critical values.

I(0) indicates, integrated at level, and I(1) indicates integrated at first difference

Co-integration test

According to table 5.5 the trace statistic when the variable, that is, determinants of FPI are considered indicates six co-integrating equations while Maximum Eigen value statistic indicates four co-integrating equations at 0.05 critical levels (thus we settle for the maximum Eigen Value). The existence of co-integrating equations obtained from the results implies that the variables of the model could be used to make long-run prediction about foreign private investment behaviour in Nigeria.

Table 5.2 : Johansen's Multivariate Co- integration Test of FPI

Error Correction Model; Results

Given the results of the co-integration test which revealed the existence of co-integration among variables in the foreign portfolio investment model, dynamic error correction model (ECM) is considered appropriate for the analysis.. This analysis on the determinants of foreign portfolio investment is into five models. The first model is without any of the governance indicator while the remaining four models are with governance indicators (corruption, internal conflicts, law and order and socio-economic conditions), one after the other independently. These are presented in the table 5.6

The result obtained from the first dynamic model indicates that the overall coefficient of determination (R^2) shows that 93.28 percent of changes in current foreign

portfolio investment is explained by the variables in the equation. As the adjusted (R^2) tends to purge the influence of the number of included explanatory variables, the adjusted R^2 of 0.8237 shows that having removed the influence of the explanatory variables, the dependent variable is still explained by the equation with 82.37 percent. When governance variables are considered, the adjusted R^2 indicates that a reasonable amount of variation in current FDI is being explained by the models. The Durbin Watson (D.W) statistics values indicate that there is no of sign auto-correlation or serial correlation in the model specifications; hence the assumption of linearity is not violated in all the model. While the F statistics indicates that the models are of good fit and significant.

The expected Error Correction Model term (ECM) of the models have the expected negative sign and are all found to be significant.

In the first model, it was discovered that changes in previous foreign portfolio investment, changes in previous real GDP, changes in previous market capitalization and changes in current real interest rate are significantly related to changes in current foreign portfolio investment inflow. The short run analysis shows that real GDP and the domestic interest rate are the only variables that are significant in the model.

Based on the apriori expectation, changes in previous and current market capitalization, changes in real exchange rate and previous changes in real GDP negate the stated apriori expectation while changes in previous FPI, changes in previous inflation rate, changes in current openness and changes in current real interest rate agree with the stated theory. While among the variables in the short run, openness, domestic real interest rate, market capitalization and total debt are found to be insignificantly related to FPI inflows.

The long run analysis of FPI in the first model shows that, a unit increase in year 1 and 2 lagged of FPI significantly increase current FPI by 0.95 percent and 0.77 percent respectively. While in the other model these are found to be positive but not significant. A unit change in year 1 lagged of real GDP decreases current FPI by 12.7 percent at 1 percent significant level. This is also found to be significant and negatively related to current FPI in the remaining four models.

In all the models, it was discovered that changes in current and lagged values of real exchange rate has an insignificant negative relationship with current FPI. This indicates that as the value of naira depreciates or appreciates, it has no effect on the inflow of current FPI. This contradicts the findings of Thanyakhan (2008) where a significant positive relationship was found between the real exchange rate and FPI inflow into Thailand.

Changes in the lagged value of inflation (ΔINFL_{t-2}) has a significant negative relationship of 0.3 percent with current FPI inflows. This is in conformity with the findings of Aron, Leape and Thomas (2010), as inflation rises discourages the inflows of long term bonds.

Openness is found to have a negative relationship with current FPI inflows. A unit positive change in year 2 lagged of degree of openness has about 0.009 percent decrease on current FPI in model 2. This is also found to be the same in all the models where governance variables are considered. In contrast to this negative relationship, Ekecoha¹, Ekeocha², Victor and Moses (2012) found a positive significant relationship between trade openness and FPI in Nigeria.

Table: Determinants of Foreign Portfolio Investment in Nigeria: Parsimonious Error Correction Model, 1989-2010.

Dependent variable: ΔFPI_t

Variables	MODEL 1: Without Governance	MODEL 2 : FPI with Corruption	MODEL 3: FPI with internal conflict	MODEL 4: FPI with law and order	MODEL 5 : FPI with socio- economic condition
Constant	0.461	0.681***	0.800***	0.893***	0.756***
ΔFPI_{t-1}	0.954**	0.170	0.192	—	0.147
ΔFPI_{t-2}	0.772***	0.175	0.372*	—	0.199
$\Delta RGDP$	2.457	1.656	2.28	-1.100***	9.621*
$\Delta RGDP_{t-1}$	-12.763*	-1.404***	-4.717	-7.092	-1.092**
$\Delta RGDP_{t-2}$			-5.700	-9.022	-3.499
$\Delta RGDP_{t-3}$				-1.794***	
$\Delta EXCHR$	-0.008	-0.012	0.007		0.013
$\Delta EXCHR_{t-1}$			-0.024	-0.014	
$\Delta EXCHR_{t-2}$				-0.001	
$\Delta EXCHR_{t-3}$				0.009	
$\Delta INFL$		-0.008	0.014		-0.015
$\Delta INFL_{t-1}$	-0.007	0.013	0.005	-0.008	-0.015
$\Delta INFL_{t-2}$		-0.031**	-0.030*	-0.041***	-0.036**
$\Delta INFL_{t-3}$				-0.008	
ΔOPN	0.002	-0.010***	-0.002	-0.016***	-0.005
ΔOPN_{t-1}		-0.009***	-0.007**	-0.006*	-0.013***
ΔOPN_{t-2}		0.005	-0.004	0.011**	-0.006
ΔOPN_{t-3}				0.001	
$\Delta MRTCAP$	-3.611	-1.577	-5.889*	2.602	-6.259**
$\Delta MRTCAP_{t-1}$	-8.900**		-4.880	4.670	-3.484
$\Delta MRTCAP_{t-2}$		-8.250**	-8.688*	-1.005***	-7.265*
$\Delta MRTCAP_{t-3}$				8.00**	
$\Delta RINTR$	-0.093***	-0.065***	-0.049***	-0.068***	-0.068***
$\Delta RINTR_{t-1}$	-0.014	-0.009	-0.034	-0.041***	-0.030*
$\Delta RINTR_{t-2}$		0.030*	0.028	-0.003	
$\Delta RINTR_{t-3}$				-0.045**	
$\Delta DEBT_t$		6.751***	4.676*	2.904	7.791***
$\Delta DEBT_{t-1}$	-26.618		5.099	5.098**	—
$\Delta DEBT_{t-2}$		-1.515	-3.228**	-3.012**	—
$\Delta DEBT_{t-3}$				0.5552	—
$\Delta CORRUP$		-2.048***		—	—
$\Delta CORRUP_{t-1}$		1.296		—	—
$\Delta CORRUP_{t-2}$		-1.026		—	—
$\Delta INTERCO$			-0.438***	—	—
$\Delta INTERCO_{t-2}$			-0.191	—	—
ΔLAW				0.177	
ΔLAW_{t-1}				0.717	
ΔLAW_{t-2}				-0.867**	

ΔLAW_{t-3}				-0.176	
$\Delta SOCECO$					-0.363***
$\Delta SOCECO_{t-1}$					-0.191
$\Delta SOCECO_{t-2}$					-0.347**
ECM_{t-1}	-2.669***	-1.451***	-1.845***	-1.069***	-1.570***
R2	0.933	0.954	0.964	0.998	0.958
DW	2.332	2.384	1.937	2.495	2.517
F Stat	8.549	14.104	12.789	76.740	15.743

Source: Author Computation.

Note : ***, ** and * represent 1%, 5% and 10% significant levels respectively.

Changes in current market capitalization has no effect in any of the models except in model 3 and 5, where internal conflicts and socio-economic conditions are considered as governance index, showing a negative insignificant relationship in all the models. While a unit change in year 1 lagged of market capitalization leads to about 8.9 percent significant decrease in current FPI. This is in conformity to the findings of Ekeocha (2008), FPI is negatively related to market capitalization in Nigeria. Other models show that previous values of market capitalization has no effect on FPI.

In the case of the country's total debt, a unit change in current total debt as a significant positive effect of 6.7 percent, 4.6 percent and 7.8 percent in model 2,3 and 5 on current FPI respectively. Meanwhile a significant negative relationship is established between the lagged values of total debt and current FPI.

A change in current domestic interest rate decreases the current FPI by 0.09percent in model 1, showing a negative and significant relationship in all the models. This is in support of the findings of Ahortor and Olopoenia (2010), indicating that increases in domestic interest rate will generate appreciable negative impact on portfolio inflows and outflows. Meanwhile this is in contrast to the findings of Ekeocha (2008) in modeling the long run determinants of foreign portfolio investment in Nigeria. It was discovered that FPI is positively related to rate of return of investment in real interest rate.

At 10 percent significant level, a unit positive change in year 1 lagged of corruption decreases current FPI by 2.05percent. indicating a negative relationship between corruption and FPI as rightly stipulated by economic theory. The presence of different kinds of corrupt practices by public office holders disrupt the inflow of portfolio investment in Nigeria.

Changes in current level of internal conflicts ($\Delta INTERCO_t$) in the model has a significant 0.44 percent negative effect on current FPI. Based on the result, there is a negative relationship between internal conflict and portfolio inflows because a country with civic unrest,

conflicts and tension disturb the production and activities of domestic firms thereby making their securities unreliable and costly. Investors also doubt the durability and credibility of such securities. Nigeria is not exception, cases of internal conflicts are the Boko Haram activities whose ideology they said negates modernization and they hide under the canopy of Islamic religion, but unfortunately their mission has not been known but they create chaos and unrest in the country.

A unit change in year 2 lagged of law and order has a significant negative effect of 0.87percent on current FPI.

A change in current socio economic condition has a negative effect on current FPI by 0.36 percent while changes in year 2 lagged of socio economic condition has 0.34 percent negative effect current FPI (ΔFPI_t) in Nigeria.

6.0 SUMMARY

The aim of the study is to determine the major determinants of Foreign Portfolio Investment (FPI) inflows in Nigeria and also to ascertain the causality relationship between the two investments (FDI and FPI) using a time series secondary data sourced from the Central Bank of Nigeria (CBN) statistical bulletins and the World Bank Development index (2008) from 1970-2010. The study also meant to determine the effect of governance and to which aspect of governance (corruption, internal conflicts, law and order and socio-economic condition) affect each of these inflows mostly. Having done the stationarity test, the obtained results from the analysis were made possible using the Johansen Co-integration test, Granger Causality test and then the Error Correction Mechanism estimation test.

The study finds a long run relationship amongst the variables of FPI and reveals also that, changes in real exchange rate (previous and current) had no effect (insignificant) on the inflows of FPI under these periods. It was discovered also that changes in current inflation rate and changes in current stock market capitalization have an insignificant effect on FPI. The state of our

current stock of market capitalization was not significant enough to pull in investment in stocks, bonds and other securities. High level of inflation, depreciated value of naira and low interest rate have made portfolio investment low relative to other forms of investment. Governance in term of internal conflicts and corruption have a significant negative effect on FPI inflows. In addition, a uni-directional causality flows from Foreign Portfolio Investment to Foreign Direct Investment was discovered. This was most positive in the long run and short run. This implies that Foreign Portfolio Investment serves as a test drive or indicator on how profitable Foreign Direct Investment can be in a proposed country for investment given the country specific factors. This is true in the sense that since Portfolio investment are mainly short termed and are more easy to pull back given the ease of liquidity relative to fixed investment that are likely to incur losses on attempt of withdrawal of investment to home country in times of disturbance.

7.0 CONCLUSION

Leaning on our research finding and extensive background to the study, we therefore conclude that Foreign Portfolio Investment (FPI) in Nigeria have not been encouraging, as a result of major domestic flaws in the country such as high inflation, poor infrastructure, corruption and insecurity that reflect on the nominal growth of the country, low interest rate, unfavorable exchange rate and unnecessary barrier to trade and inflows of capital that manly come in the form of legal requirement, tariff barriers, duplicated tax system, etc. Also, the fear of future burden to be bore in form of higher tax and levies to redeem huge debts especially, external debts seem to deter the inflow of Foreign Private Investment in the country.

8.0 POLICY RECOMMENDATION

Due to the negative contribution of the stock of Nigeria's capital market to the inflows of bonds and other securities, there is need for a reform in the system. The Nigeria capital market must be allowed to operate freely, there must be policy consistency and transparency, fairness and efficiency in securities transactions, high ethics and professionalism, investors protection and confidence, training of staff for new technology adaptation in order to improve their operations.

Given the identified problems of internal conflicts and corruption that affect the inflows of Foreign Portfolio Investment (FPI) in Nigeria, this study therefore recommends that the government should fund, equip, train and retrain officers and men of internal security agencies, especially the police force who can fight and ensure the safety of life and property to eradicate internal conflicts in the country. There is need for sovereign national conference; we all coming out to fashion out on how to resolve our differences in a federal state like Nigeria.

Also, the government should ensure the implementation of policies and decisions made concerning security.

Having appointed people of high integrity to head anti corruption agencies, the government should not interfere with their decision. They should act independently.

The government can also reduce corruption by establishing a body and sub bodies that evaluates the works of every ministry and public offices at national, state and local level. By so doing, it will inculcate fear in the heart of public holders, and thereby reduce corruption. Good governance (leaders are meant to serve not to be served).

9.0 STUDY LIMITATION

This study covers only the inflows of FPI in Nigeria, further studies may explore on the outflow. This study is unable to say categorically as to which of the governance indicators have a strong or pronounce effect on investment inflows. Future empirical studies in this area should examine some of the less tested determinants of foreign portfolio investment and can also investigate on the cross country analysis between Nigeria and its investing partners.

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