IMPACT OF FINANCIAL INTEGRATION AND GROWTH VOLATILITY ON NIGERIAN ECONOMY

BY

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JANUARY, 2017.

DECLARATION

I ASIAGWU HARRIET of Department of Banking and Finance, Delta State University, Asaba Campus, hereby declare that, this project is an original work and has not been previously presented wholly or in part for the award of another degree.

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CERTIFICATION

We the undersigned certify that this dissertation was written by ASIAGWU, Harriet (Mat. No. PG/13/14/221646) in the Department of Accounting/Banking and Finance, Delta State University, Asaba Campus, having been found to be adequate both in scope and content. This is in partial

fulfillment of the requirements for the award of a Master of Science (M.Sc.) Degree in Banking and Finance.

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DEDICATION

This research work is dedicated to:

God Almighty who made everything possible.

The memory of my beloved father, Joseph Ifeanyichukwu Asiagwu.

My dearest mother Mrs. Veronica Onyebuchibeh Asiagwu.

My ever loving husband Engineer Khuliq Ahmed Jamil.

My princess Javeria Oluchukwu Jamil.

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ABSTRACT

This study examined the impact of financial integration and growth volatility on Nigerian economy. To achieve this research objective, relevant data were sourced for the period spanning 1981-2014 (34years). Data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin, and World Bank Data Base for the period under review. The study adopted ADF unit root test, Johansen co-integration test, and ordinary least square (OLS) regression analysis as the analytical techniques. Ex-Post-Facto research design was used. The variables were real gross domestic product (RGDP) proxy for growth on Nigerian economy as the dependent variable, while degree of openness (DOP), external debt (ED), real effective exchange rate (REX), real inflation rate (RINF) GDP deflator, and

foreign private investment (FPI) as the independent variables proxy for financial integration. The result of the study confirms our apriori expectation. The study shows that there is a positive relationship between RGDP and DOP; and negative relationship between RGDP and ED, REX, RINF and FPI. The coefficient of determination R^2 shows that the estimated model (OLS) has high predictive/explanatory power, the F-statistic indicates that the regression plane was statistically significant, our null hypotheses were rejected since the overall probability level (sign p-value) was less than the critical value/chosen level of significance (0.05). Therefore, financial integration can only boost economy in the short-run in developing countries, Nigeria in particular, but not in the long-run, that is, short-run gain and either no gain or a medium-to long-run pain. The study therefore, recommends that government has to put measures in place to control the outflow of capital from the country to other countries. This is to enable the country reap the benefits of reinvesting profits generated from Nigerian based companies instead of taking such profits outs of the country thereby causing negative growth.

TABLE OF CONTENTS

CHAPTER ONE:

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

International financial integration has lots of advantages for a developing economy like Nigeria. Financial integration is a concept which leads to efficient capital allocation, better governance, higher investment and growth, and risk-sharing. Directly, financial openness affects economic growth through enabling access to foreign financial markets, increasing financial service efficiency and helps in diversification of risk and consumption. Thus, it induces additional capital investment, and fosters macroeconomic discipline.

Neal and Larry, (1990) stated that financial integration believed to look back to the 1690s and was briefly interrupted at the start of the French revolution. Eventually, the 1980s, and 1990s saw an increase in financial integration (Lothian, 2003). Regulatory restrictions on international capital mobility such as capital control, interest rate ceiling and so on, were weakened and removed because such regulatory framework was very costly in the new market environment. To contain the effects of exchange rate volatility, new financial instruments and market were developed.

Frieden (2010) viewed globalization driven structural changes, the choice and implementation of exchange rate policies have to be reconsidered because government/policy makers are highly constrained in the choice between choosing exchange rate and choice are highly dependent on the level of financial integration. For example, advanced countries like Chile, Korea, and Mexico where liberalization has produced a

positive result with the integrated approach (IMF, 2012).

To gain full access, the benefits of accruing from globalization/integration, some countries struggled on how to achieve exchange rate stability, monetary autonomy and financial integration as major economic policies to ensure reduced macroeconomic volatility and stimulate a sluggish economy. The dilemma of international economics and finance suggests that only two of these three policies can be achieve simultaneously (Ghosh et al., 1997; Edison et al., 2002, Aizenman et al., 2008, 2011; Aizenman and Ito, 2012). According to Obadan (2006), Nigeria is one of the nations that operate and managed floating exchange rate system called "dirty float". The increasing level of financial globalization and incidence of financial crisis in recent times has drawn the attention of economists and policy makers to the macroeconomic implications of unrestricted capital flows to developing countries.

Although Neo-classical theory predicts the potential benefits of financial integration, empirical evidence on long term macroeconomic growth remains highly controversial (Prasad et al., 2003). The financial conflict of the 1980s, Latin American and East Asia in the 1990s and Argentina in 2001–2002, are examples of the disruptive effects of fluctuations in international capital flows (Chen and Quang, 2012).

Portfolio equity inflows to the Sub-Saharan African region have improved significantly over the last decade which is an indication of the sub-regional's gradual integration into the global financial market. Countries such as Nigeria, Ghana, Kenya, Zambia, Angola, Senegal, Tanzania, Cote d'Ivoire and South Africa have tapped into global capital markets in recent years (IMF, 2011 and 2013).

For example, Ghana and Nigeria in 2007 and more recently, in 2013 they issued sovereign bonds to raise a total amount of US$1,950 million and US$1,225 million respectively (IMF, 2011; 2013). Similarly, Senegal in 2009 then raised an amount of US$200 million from a sovereign bond issue but as for Zambia, they raised an amount of US$750 million in a similar issue. The search of high investment among international investments have led to new inflows of portfolio equity as Kenya, Nigeria and Uganda, thereby boosting activities on their stock markets (IMF, 2013).

Obasanjo administration's reform programme and the regularization of relation with Paris Club Creditors marked an important step in Nigeria's reintegration into the International Financial Community. Internally, available resources are grossly inadequate to meet the needs for economic development and poverty reduction, even in the unlikely absence of corruption and resource management. Through interaction with advanced wealth creating nations, Nigeria may decide to pull itself out of its vicious circle of poverty.

Example of foreign portfolio investment in Nigeria includes Nigeria's Guaranty Trust Bank Plc (GTB) five-year Eurobond issued to raise $350 million in January 2007. The demand for this bond was high and this was the first time any Nigerian institution, private or public, has approached the international capital markets since the early 1990s. In July 2007, GTB again listed Global Depository Receipts (GDR) on the London Stock Exchange (LSE) in its global offering.

The offering raised $750 million and is the First Nigerian GDR listing on the LSE. On August, 2012, three Federal Government of Nigerian (FGN) bonds (10.50% FGN MAR 2014; 15.10% FGN APR 2017 and 16.39% FGN JAN 2022) were included in the JP Morgan Government Bond Index for Emerging Markets (GBI-EM). The liquidity of the respective FGN bonds, coupled with an improvement in Nigeria's credit rating, attracted portfolio inflows into the bond market. The U.K, United States, Netherlands, South Africa and Mauritius have been the major investor countries in Nigeria.

This interest further increased after finding that the growth effects of output growth volatility differ according to "globalization" variables, like trade and financial integration (Kose, Prasad and Terrones, 2006). It has therefore become increasingly important to indentify the factors affecting output. For developed countries, the empirical literature has been trying to understand why output growth volatility has fallen during the past twenty (20) years.

Kose et al (2009) argue that the financial integration seems to have various impacts in every country and that some prerequisite conditions must be satisfied for beneficial impact to occur. The financial development level is highly relevant and is a threshold condition suggested by their empirical work. Many theoretical works also highlighted the unequal outcomes of the financial openness in different countries in the presence of the financial imperfection (see for example, Guo, 2010).

When the financial market is on imperfect mode, the financial openness will result to be

unfavourable for poor countries, while it will be favourable for the rich ones. The works suggest that, for the beneficial impacts of the financial integration to occur, there is the need to reduce the financial imperfection and improve the financial development.

Dominant economic theory suggests that financial globalization and international financial integration may foster more efficient resource allocation, facilitate risk diversification, increase specialization in production, create technological spin-offs, contribute to the development of the financial system, improve investment rates and boost growth (IMF,2001); Edison, Klien, Ricci and Slok (2002a and 2000b); Henry (2002); King and Levine (1993); Mougani (2001 and 2006); Obstfeld (1994); Prasad et al, (2003) and Stulz (1999).

In acknowledging the existence of these impacts, the industrialized countries have been committed to capital account liberalization policies for over a quarter of a century. According to these authors, many of the positive impacts, observed in these countries are largely due to increased investment opportunities induced by greater openness of capital markets (Mougani, 2012).

Consequently, financial integration theoretically has its advantages and its implications (risks) on the growth and volatility of an economy. Since the financial system of Nigerian economy is internationally integrated, it therefore calls for empirical investigation to be able to ascertain the impact of financial integration on the macroeconomic volatility of the Nigerian economy.

1.2 STATEMENT OF THE PROBLEM

With rapid capital flows revolving around the world, the currency and financial crises in 2007 and 2010 were inevitable. Consequently, some of the developing countries, most especially Nigeria that welcomed excessive capital flows were vulnerable to the financial disturbances. Due to the recent financial crises, there has been an argument debate among both the academics and the practitioners concerning the costs and benefits of financial integration in the economy.

Up to date, this on-going debate about the costs and benefits of financial integration has not yet been settled or moved towards agreement (Kose et al; 2006). These notwithstanding, the excessive capital inflows into Sub-Saharan Africa (SSA) might pose critical barriers as they may counter domestic monetary and exchange rate policies.

Problems such as asset price bubbles and sudden reversals of these inflows as a result of shift in investors' risk appetite may have severe consequences on the economic prospects of SSA countries; as we witnessed in Mauritius and Nigeria between 2007 and 2009 during the global financial crisis. Other critical issues that might arise from the unregulated capital flows in Nigeria are capital flight, contagion and macroeconomic volatilities In view of these tensions, the International Monetary Fund (IMF) in 2005 endorsed the legitimate use of temporary capital controls as part of the policy toolkit to aid countries manage the large inflows of capital into their economy system.

The IMF, (Chen and Quang, 2012) contended that being an advocate of international finance, acknowledges that greater financial globalization if not monitored can result in adverse effects for the global economy. Studying the relationship between financial integration and economic growth is critical for Nigeria, considering that it is a country whose financial industry is getting more integrated into the global economy.

As well, there is need to determine the impact of financial integration on economic growth in Nigeria at the aftermath of the global financial crisis. Hence, the study seeks to investigate whether financial integration has had any impact in stimulating economic growth in developing countries/emerging economics, Nigeria in particular. It therefore, contributes to the literature on the nexus between financial integration and economic growth in Nigeria.

1.3 RESEARCH QUESTIONS

The following research questions are stated as follows:

i. Does degree of openness have any effect on growth on Nigerian economy?

ii. Is growth on Nigerian economy driven by foreign private investment?

iii. Does external debt affect growth on Nigerian economy?

iv. Does inflation have any effect on growth on Nigerian economy?

v. Does exchange rate have any effect on growth on Nigerian economy?

1.4 OBJECTIVES OF THE STUDY

The main objective of this study is to empirically examine the impact of financial integration and growth volatility on the Nigerian economy. The specific objectives are to:

i. Examine the effect of degree of openness on growth on Nigerian economy.

ii. Determine whether growth on Nigerian economy is driven by foreign private investment.

iii. Determine if external debt (foreign debt) affects growth on Nigerian economy.

iv. Examine the effect of inflation on growth on Nigerian economy.

v. Determine the effect of exchange rate on growth on Nigerian economy.

1.5 RESEARCH HYPOTHESES

H_{01}: Degree of openness does not have significant effect on growth on Nigerian economy.

H_{02}: Growth on Nigerian economy is not driven by foreign private investment.

H_{03}: External debt does not have significant relationship with growth on Nigerian economy.

H_{04}: Inflation does not have significant relationship with growth on Nigerian economy.

H_{05}: There is no significant relationship between exchange rate and growth on Nigerian economy.

1.6 SCOPE OF THE STUDY

The study period covered thirty-four (34) years spanning from 1981-2014. Data is sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, and World Bank Data Base for the period under review as secondary sources of data.

Real gross domestic product (RGDP) as the dependent/ explained variable while external debt (ED), real effective exchange rate (REX), real inflation rate (RINF) GDP deflator,

foreign private investment (FPI), and degree of openness (DOP) as the independent/explanatory variable for this study.

1.7 SIGNIFICANCE OF THE STUDY

This study is significant as it provide empirical evidence that financial integration has significantly impacted on economic growth; and therefore, contribute to the literature on the nexus between financial integration and economic growth.

The knowledge from this study will be very useful to Nigeria's economic planners in making projection about the economy. It will also expose factors that affect Nigeria's foreign relations or Nigeria's relations with other countries.

1.8 LIMITATIONS OF THE STUDY

This study is limited to the quality of secondary data sourced. We had no other way of verifying the quality of data produced by CBN statistical bulletin, and World Bank database.

The study is limited by the model specified. It is near impossible to have a 100% R^2 adjusted value. Our model thus, is limited because we cannot include infinite number of variables in the model.

1.9 DEFINITION OF TERMS

Volatility: This is referred to the amount of uncertainty or risk about the size of changes in a security's value. A higher volatility means that a security's value can potentially be spread

out over a lager range of values. This means that the price of security can change dramatically over a short time period in either direction.

Degree of Openness: This is also known as trade openness. It is the sum of a country's total exports and imports as a ratio of its gross domestic product (GDP). That is, a measure of the extent to which an economy depends on trade with other countries or regions, (DOP = $^{X+M}/_{GDP}$).

Openness condones net export of country. Interpretation of the openness index is: the higher the index, the larger the influence of trade on domestic activities; and the stronger that country's economy.

Inflation: it is the growth rate of the consumer price index (CPI) in an economy and is used as a measure of macroeconomic stability and prudent economic management. Inflation as measured by the annual growth rate of GDP implicit deflator shows the rate of change in the economy as a whole.

Foreign Private Investment: This is known as the inflow and outflow of foreign investment of a country. This is broken down into country of origin and components. The most important end-product of the analysis is the **Net Capital Flow** which gives a picture of the net inflow or outflow of foreign capital during a given period.

Foreign Debt: External debt is a debt, which a country owes to foreign interest group both official and private. These in other words are debts owed by a country to institutions or countries abroad.

1.10 ORGANIZATION OF THE STUDY

The study is organized into five chapters s follows:

Chapter one is an introduction of the research study. It consist of an overview or background of the study, statement of problems which the study seeks to provide answers to, objective of the study, the significance, research questions, hypotheses formulated for the purpose of the study, scope, limitations of the study and definition of major terms.

Chapter two is a review of relevant literature and empirical review of renowned authors in this field of study.

Chapter three present the methodology upon which the research is based. In this chapter the population and sample size, the sample techniques, methods of obtaining data and the techniques of data analysis are given consideration.

Chapter four consists of a vivid presentation and analysis of data obtained from relevant sources in order to prove or disprove the stated hypotheses.

Chapter five is the last section of the work and it consists of the researcher's findings, conclusions and recommendations.

1.11 SUMMARY

Financial integration is the process through which a country's financial markets become more closely integrated with those in other countries or with those in the rest of the world. This chapter is an overview into the understanding of the benefits of financial integration.

The purpose of the study, problems, research questions and significance of the study has been presented. Hypotheses have also been formulated as well as factors that pose limitations to the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter focuses on conceptual issues, theoretical framework and empirical literature.

The exploitation of economies of scale that can allow firms, in particular those small and medium-sized ones that face credit constraints, to have better access to broader financial or capital markets. Individual risks could also be minimized by integrating into a large market and, at the same time, enhancing portfolio diversification.

In addition, regulatory independence could be enhanced through formal integration, which widens the scope for participation in governing the financial system. Financial institutions operating under the influence of integration arrangements for different economies should adhere to a standardized valuation rule, which not only increase the transparency of individual financial sectors, but also improves the overall stability of financial systems involved.

On the other hand, financial integration could emerge without formal agreements. It might take various forms, such as financial information sharing, foreign participation in domestic banking, insurance and pension fund businesses, direct borrowing of domestic firms in international financial markets and so on. A standard measure of financial integration is difficult to develop.

Three types of empirical analyses are usually employed to measure the degree of financial integration, or simply, financial openness. Frankel and Mac Arthar (1988) use interest rate differentials and forward premium/discount to assess the degree of capital mobility and capital account liberalization. However, due to the difficulty in accurately gauging the magnitude and effectiveness of government restrictions as well as the relatively limited coverage of countries and time periods, these measures remain a persuasive argument.

The second type is the on/off indicator of the existence of rules/restrictions that inhibit cross-border-capital flows. One representative work to employ this dataset is Grilli and Milesi-Ferretti (1995). Quinn (1977) focuses on the International Monetary Fund (MIF)'s restriction measures by reading through its narrative descriptions of capital account restrictions and assigning scores of the intensity of capital restrictions.

Other studies propose restrictiveness measures for a limited number of countries that focus on controls of international sales and purchases of equities only. However, it can be argued that a wide range of factors rather than direct administrative barriers alone could affect cross-border capital movements. For example, they could be a range of polices and circumstances such as the stance of monetary or fiscal policy, the size of policies and circumstances such as the stance of monetary or fiscal policy, the size of the domestic economy, and conditions in the rest of the world and so on.

Therefore, the last types of empirical studies use actual international capital or financial flow or stock to measure financial openness. A popular indicator is the stock of international

assets and liabilities as a percentage of GDP. If the ratio is high, it implies that an economy is financially open to the rest of the world.

Unlike the second type of measure, this openness measure does not just capture the restrictiveness of capital controls, but also the impact of all other factors influencing the level of capital flows, such as the nature of domestic financial markets.

2.1 CONCEPTUAL CONSIDERATION

2.1.1 IMPACT OF FINANCIAL INTEGRATION – GROWTH VS RISK

The impact of financial integration on growth is mixed.

On the one hand, financial integration facilitates risk-sharing and thereby should enhance production specialization, capital allocation, and ultimately, economic growth (Obstfeld, 1994). Given their relatively low endowment of physical capital and inherently greater consumption volatility, developing economies, in particular, seem to have the most to gain from the process of integration.

Some empirical evidences on long-term benefits of financial integration also show that more financially integrated economies have done better, on average, than less financially integrated economies in terms of improvements in per capita income and standard of living. In particular, Edison et al., (2002) and Prasad et al., (2003) examined various dimensions of the causal link between financial integration and growth, and concluded that financial integration generates growth benefits, though with various degrees.

Boyd and Smith (1992), argue that financial integration in countries with weak institutions and policies will induces capital outflows from capital-scarce countries to capital-abundant countries with better institutions. Similarly, empirical studies are inconclusive as to the effect of financial integration on growth.

Some studies give the result that FDI inflows, which could arguably be stimulated by an open financial system, are positively associated with economic growth when countries are sufficiently rick, educated or financially developed (Blomstrom et al., 1994). Quinn (1997) shows that capital account openness is robustly positively correlated with long-run economic growth in 64 countries from 1985 to 1989, whereas Arteta et al., (2001) and Kraay (1998) indicated that capital account liberalization is as likely to hurt as to help growth.

Other than growth, risk diversification is a popular argument for financial deregulation and integration. Nevertheless, the US sub-prime problem and its serious spillover effect have posed far-reaching implications for the international economic order underlying financial globalization. It is proved that the spreading of risk through complex derivatives cannot make the risk disappear, but rather, intensify the problem.

The newly innovated financial products do not reduce but only conceal the real risk involved in underlying assets, and therefore lead to a systemic underestimation of risk. After massive defaults on housing mortgage loans, a full-blown crisis had surfaced in the US economy, followed by the worldwide credit crunch and recession in a financially integrated world.

2.1.2 FINANCIAL INTEGRATION AND MACROECONOMIC VOLATILITY

Eswar et al.,(2007) suggests that developing countries, in particular have not attained this potential benefit. Holding growth constant, higher macroeconomic volatility would normally be associated with an increase in inequality of income, and therefore measures of poverty based on inequality. If the growth benefits are large-as indeed they may well be, although the evidence is clearly very mixed-then of course increased financial integration may increase relative poverty measures in the short-run while reducing absolute poverty measures in the long-run.

One of the potential benefits of globalization is that it should provide better opportunities for reducing volatility by diversifying risks Kose, Prasad, and Terrones (2003). Indeed all these benefits are presumably even greater for developing countries, which are intrinsically subject to higher volatility because they are less diversified than industrial economies in their production structures.

However, recent crises in some more financially integrated countries suggest that financial integration may in fact have increased volatility. It is important to make distinction between output and consumption volatility. In theoretical models, the direct effects of global integration on output volatility are ambiguous.

Irrespective of the effects on output volatility, theory suggests that financial integration should reduce consumption volatility. Access to international financial markets provides better opportunities for countries to share macroeconomic risk and, thereby, smooth

consumption. The basic idea here is that, since output fluctuations are not perfectly correlated across countries, trade in financial assets can be used to delink national consumption levels from the country specific components of these output fluctuations (Obstfeld and Rogoff, 1998). Praad et al. (2004) provided a detailed analytical examination of this issue and show that the gains from consumption smoothing are potentially very large for developing economies.

2.1.3 BENEFITS OF FINANCIAL INTEGRATION

Some of the studies that consider financial development as a beneficial consequence of financial integration are as follows:

Risk sharing

Economic theory predicts that financial integration should have a role on facilitating risk sharing (Jappelli and Pagano, 2008). According to Baele et al. (2004) financial integration provides opportunities for organizations and households to share financial risk and to smooth out consumption inter-temporally. These avenues indicate a strong connection between financial institutions and economic growth (Levine, 1997).

Improved capital allocation

An integrated financial market takes out all forms of impediments to trading of financial assets and capital flow, allowing for the efficient allocation of financial resources for investments and production. In addition, investors will be permitted to invest financially wherever they believe the money will be allocated to the most productive uses.

Economic growth

The literature proposes various mechanisms through which financial integration may affect economic growth. In the neoclassical framework, all effects are generated through capital flows. In the standard model, opening international capital markets generates flows from capital-abundant towards capital-scarce countries, thereby accelerating convergence (hence short term growth) in the poorer countries.

This in turn leads to improved efficiency of financial institutions as financial resources are released for productive activities.

Financial development

According to Hartmann et al. (2007) financial development can be understood as a process of financial innovations, and institutional and organizational improvements in the financial system. Combined, the process have the effect of reducing asymmetric information, increasing the completeness of markets and contracting possibilities, reducing transaction costs and increasing competition.

As described in Levine (1997), financial systems serve some basic purposes. Among others, they are:

(i) lower uncertainty by facilitating the trading, hedging, diversifying and pooling of risk;
(ii) Allocate resources; and
(iii) Mobilize savings.

2.1.4 COSTS AND BARRIERS OF FINANCIAL INTEGRATION

In addition to the potential benefits, financial integration may also generate significant costs.

In a world with imperfect capital markets, integration can make a nation or economy more vulnerable to external macroeconomic shocks and financial crises. Contagion effects, possibly amplified by 'fickleness' and herding behaviour of financial institutions, may actually increase output and consumption volatility, instead of lowering them as the risk-sharing thesholds. The literature [e.g. Edison et al. (2002), Agenor (2003), Baele et al. (2004), Komarek and Komarkova (2008) and ECB (2010)] identified major costs of financial integration:

(i) High degree of concentration of capital flows and lack of access to financing for small countries, either permanently or when they need it most;

(ii) Inadequate domestic allocation of these flows, which may hamper their growth effects and exacerbate pre-existing domestic distortions;

(iii) Loss of macroeconomic stability;

(iv) Pro-cyclical movements in short-term capital flows;

Concentration and Domestic Misallocation of Capital Flows

Historical evidence suggests that periods of 'surge' in cross border capital flows tend to be highly concentrated to a small number of recipient countries. A number of developing countries (particularly the small ones) may simply be 'rationed out' of world capital markets -regardless of how open their financial account is.

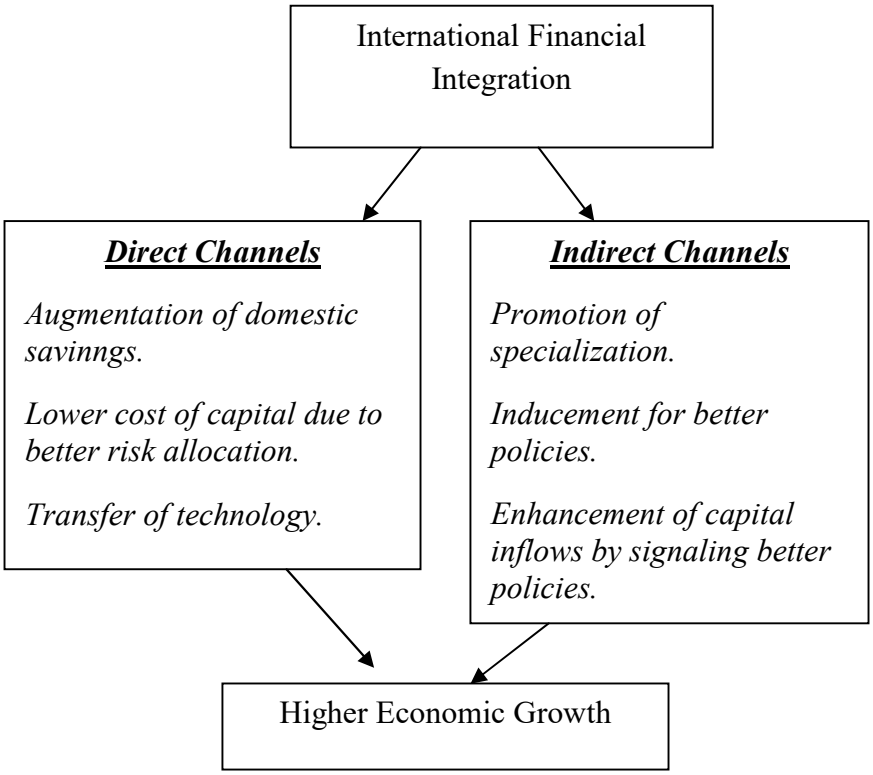
Although the capital inflows that are associated with an open financial account may raise domestic investment, their impact on long-run growth may be limited if such inflows are used to finance speculative or low-quality domestic investments such as investments in the

real estate sector.

2.2 THEORETICAL FRAMEWORK

The standard theory forecast that financial integration can lead to flows of capital from capital-rich economies to capital-poor economies since, in the latter, the returns to capital should be higher. It is not clear, however, how important this nuance is likely to be empirically in studies that look at growth experiences over periods of just two-three decades.

Fig. I: Direct and Indirect Channel of Capital Flow



Source: Prasad, Eswar, Rogoff, Kenneth, Wei, Shannge-Jin, and Kose, Ayhan M.(2003), "Effects of Financial Globalization on Developing Countries: Some Empirical Evidence", International Monetary Fund Publishing (March), p. 24.

DIRECT CHANNELS

Augmentation of domestic savings: North-South capital flows in principles benefit both groups. They allow for increased investment in capital-poor countries while they provide a higher return on capital that is available in capital-rich counties. This effectively reduces the risk-free rate in the developing countries.

Reduction in the cost of capital through better global allocation of risk: International asset pricing models predict that stock market liberalization that improves the allocation of risk (Henry 2000; Stulz 1999a, 1999b). First, increased risk-sharing opportunities between foreign and domestic investors may aid to diversify risks. As capital flows increases, the domestic stock market becomes more liquid, which could later reduce the equity risk premium, thereby lowering the cost of raising capital for investment.

Transfer of technological and managerial know-how: Financially integrated economies seem to attract a disproportionately large share of FDI flows, which have the potential to generate technology spillovers and to serve as a conduit for passing on better management practices.

Stimulation of domestic financial-sector development: It has already been noted that international portfolio flows can increase the liquidity of domestic stock markets. Increased foreign ownership of domestic banks can also generate a variety of other benefits (Levine 1996; Caprio and Honohan 1999). First, foreign bank participation can facilitate access to international financial markets. Secondly, it can help improve the regulatory and supervisory

framework of the domestic banking industry. Thirdly, foreign banks often introduce a variety of new financial instruments and techniques and also foster technological improvements in domestic markets. The entry of foreign banks tends to increase competition, which, in turn, can improve the quality of domestic financial services as well as efficiency.

INDIRECT CHANNELS

Promotion of specialization: However, without any mechanism for risk management, a highly specialized production structure will produce high output volatility and, hence, high consumption volatility. Concerns about exposure to such increases in volatility may discourage countries from taking up growth-enhancing specialization activities; the higher volatility will also generally imply lower overall savings and investment rates. This point will be taken up again in the next section. Here, it should just be noted that risk sharing would indirectly encourage specialization, which in turn would raise the growth rate. This logic is described by Brainard and Cooper (1968), Kemp and Liviatan (1973), Ruffin (1974); Imbs Wacziarg (2003). Among developed countries and across regions within given developed countries, there is indeed some evidence that better risk sharing is associated with higher specialization (Kalemli-Ozcan, Sorensen, and Yosha 2001).

Commitment to better economic policies: International financial integration could increase productivity in an economy through its impact on the government's ability to credibly commit to a future course policies.

Signaling: Bartolini and Drazen (1997) suggest that the removal of restrictions on capital outflows can, through its signaling role, lead to an increase in capital inflows. Many countries, including Colombia, Egypt, Italy, New Zealand, Mexico, Spain, Uruguay, and the United Kingdom, have received significant capital inflows after removing restrictions on capital outflows (Mathieson and Rojas-Suarez, 1993 and Laban and Larrain, 1997). They include an economy's structural features-the extent of financial sector development, institutional quality, and trade integration-and also the macroeconomic policy framework.

A number of more formal models have been developed to analyze the effects of capital account liberalization in economies with limited financial development. Financial development also has a direct impact on macroeconomic stability in financially open economies. This study is geared towards examining financial openness-economic growth nexus in Nigeria.

2.3 EMPIRICAL STUDY

Recent studies on financial integration in Sub-Saharan Africa by Mougani (2012) and Ahmed (2011) have focused on private capital flows and rule-based measures of financial openness respectively, though their findings have been largely inconsistent in relation to the impact, such flow have on growth. Chen and Quang (2012), investigated the particular conditions under which international financial integration is growth-enhancing.

Their explanation of these diverse experiences is very simple. They think that the neoclassical model provides a valid description of the historical period, but appears unstable to explain the contemporary world economy. Their results concluded that those economies

which open themselves to the world economy need at first abolish domestic distortions to reap the benefits of globalization. Lane (2009) investigates the link between international financial integration and Japanese macroeconomic performance.

He then argued that the nature of financial globalization in recent years should be more beneficial than in previous phases, especially with the greater openness and improved health of the domestic financial sector.

Reinhart and Reinhart (2009) analyzed capital inflow bonanzas in 181 counties during 1960-2007. They found that for emerging markets, such bonanzas are associated with higher likelihood of financial and economic crisis.

Osada and Saito (2007), studies the effects of financial integration on economic growth using an international panel data of 83 countries from 1974-2007. They showed that the effects of financial integration on economic growth differ considerably, depending on the type of external assets and liabilities as well as on the characteristics of countries. They also find in general that countries with good institutions and developed financial markets benefit more from financial integration, and countries in West Europe and North America and as well as those in East Asia are more likely to meet these conditions.

Empirical work by Kraay (1998), Edison, Levine, Ricci and Slok (2002), and Fratzcher and Bussiere (2004) have not confirmed a robust long-term impact of financial openness on. Pierre-Olivier and Olivier (2006) find that developing countries do not benefit greatly from international financial integration in a calibrated neoclassical growth model.

Further, they suggest that countries have much more to gain from upgrading their domestic engines of growth and development (Example, by relaxing domestic credit rationing) than from attracting larger quantities of foreign capital per se. Even if capital flows were below the efficient level because of international credit rationing, the potential gains from mitigating this inefficiency might be quite moderate.

Friedrich, Schnable and Zettelmeyer (2010), using the methodology by Rajan and Zingales (1998) based on industry-level data from a sample of low and middle income countries, show that the effect of financial integration on growth is not only statistically significant, but also economically important. The empirical evidence suggests vast heterogeneity across countries, regions, financial factors, and directions of causality.

Thus, this study fills the aforementioned gap by exploring the relationship between five proxies of financial integration and Nigeria's economic growth, using unit root test, co-integration test, ordinary least square regression analysis and granger causality.

2.4 SUMMARY

This chapter gave an insight or reviewed relevant literature and empirical considerations of authors in this field of study.

Various justifications of the authors for financial integration and economic growth were deeply looked into. On the empirical consideration, various authors' write-ups relating to

financial integration and economic growth were looked at. Their methods (That is, methodologies) were considered and their relevance to this project work viewed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

Research methodology is a systematic means or ways of finding an answer to a defined problem. It involves the process of arriving at dependable solution to problems through a well planned and systematic collection of data, analysis and interpretation. It entails designing that necessitates the discovery of facts and the relationship that will make knowledge more effective.

3.1 RESEARCH DESIGN

Asika (1991) defined a research design as the structure of investigation aimed at identifying variables and their relationship to one another. It refers to the approaches, plan or framework of carrying out a research study.

Basically, a research design is the plan, structure and strategy of investigation used to obtain answer to research question.

It can also be seen as the overall scheme of the research and contains things the research proposes to do. It ensures that the required data are collected and that they are collected accurately and economically. That is, it is used as a guide in collecting and analyzing data.

For the purpose of this research and for appropriate collection and analysis of data, ***Ex-Post-Facto*** research design is used. This research design demonstrates the relationship between

the independent and dependent variables. It is a research tool for demonstrating cause and effect relationship by analyzing past occurrences or events and already existing data obtained from the annual reports, (Olannye, 2006).

3.2 POPULATION AND SAMPLE SIZE

This paper attempts to assess the impact of financial integration and growth volatility on the Nigerian economy and the data used are basically time series data covering 1981-2014. Data is sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, and World Bank Database for the period under review as secondary data. ADF Unit Root test, Johansen Co-integration test, Ordinary Least Square (OLS) Regression Analysis and Granger Causality are used as the analytical tool for this study; and the analysis is conducted E-view 0.6

The following variables are to be measured, Real Gross Domestic Product proxy for economic growth as the explained/dependent variable while Degree of Openness, Foreign Private Investment, Real Effective Exchange Rate, Foreign Debt (External debt), and Inflation Rate are proxies for financial integration as the explanatory/independent variables.

3.3 MODEL SPECIFICATION

The chosen economic growth is the Real Gross Domestic Product (RGDP), while Degree of Openness, Foreign Direct Investment, Real Effective Exchange Rate, Foreign Debt (External Debt), and Inflation Rate are for financial integration. Growth volatility on Nigerian economy is a function of financial integration. Therefore, Real Gross Domestic Product is a function of Degree of Openness, Foreign Private Investment, Real Effective

Exchange Rate, Foreign Debt (External debt), and Inflation Rate. That is, RGDP = *f*(DOP, FPI, REX, ED, INF).

The model thus:

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + U$ ……. (1)

Where:

Y = Dependent/Explained Variable

b_0 = Intercept

$b_1 – b_5$ = are the coefficients of the explanatory variables

$X_1–X_5$ = are the independent/explanatory variable

The model is restated as:

$RGDP = b_0 + b_1DOP + b_2 FPI + b_3REX + b_4ED + b5RINF + U$ ……..…… (2)

RGDP = Real Gross Domestic Product

DOP = Degree of openness (+)

FPI = Foreign Private Investment

REX = Real Effective Exchange Rate

ED = External Debt (Foreign Debt) (-)

RINF = Real Inflation Rate (GDP deflator) (-)

U = Stochastic or error term

$b_1 – b_5$ = Coefficients of the explanatory variable (proxy for financial integration)

On apriori, it is expected that the dependent variable should have either a positive or a negative (+/-) relationship with the independent variables.

3.4 SOURCES OF DATA COLLECTION

Data were sourced from the Central Bank Nigeria (CBN) Statistical Bulletin, and World Bank Database for the period under review and the method adopted in the collection of data is secondary sources of data.

3.5 TECHNIQUES OF DATA ANALYSIS

Unit root test, Ordinary least square (OLS) regression analysis, co-integration test, granger causality test and error correction mechanism are to be used to analyze the data.

3.5.1 UNIT ROOT TEST

To avoid inappropriate model specification and to increase the confidence of the results, time series properties of the data are investigated. Although there are a number of methods used to test for stationarity and the presence of unit roots, the method used here is the Augmented Dickey-Fuller (ADF) test. By definition a series is stationary if it has a constant mean and a constant finite variance. On the contrary, a non-stationary series contains a clear time trend and has a variance that is not constant overtime. If a series is non-stationary, it will display a high degree of Persistence.

3.5.2 ORDINARY LEAST SQUARE

The Ordinary Least Square (OLS) technique will be used to investigate the relationship between financial integration and economic growth in Nigeria. Regression model will be adopted to know the effect of financial integration on growth in Nigeria within the period under review. Also, coefficient of determination (R^2), T-statistic, F-statistic, and the Durbin-

Watson test were employed to evaluate the significance of the estimated parameters of the regression model.

3.5.3 COINTEGRATION TEST

Co-integration is a technique used in econometrics for testing the non-stationary of time series variables, the existence of co-integration relate to the existence of a long run equilibrium relationship among a set of non-stationary variables, in this analysis the Johansen test will be employed.

3.5.4 GRANGER CAUSALITY TEST

The granger causality is a statistical hypothesis that is used in ascertaining whether or not a time series data is important in evaluating another, he is of the view that causality in economics can be seen by carrying out a test. This will be used to test the hypotheses which will show the relationship between financial integration and economic growth.

3.5.5. ERROR CORRECTION MECHANISM

The Error Correction Mechanism (ECM) process helps to observe the convergence in the long run as earlier revealed by the co-integration test. The error correction term has the expected negative sign and is significant. It is based on the ordinary least squares coefficient of the lagged dependent variable in an autoregressive distributed lag model with leads of the regressors. The limit distributions of the standardized coefficient and *t*-ratio versions of the ECM tests are obtained and critical values are provided. Finally, we compare their power properties with those of other co-integration tests available in the literature and find the

circumstances under which the ECM tests have a better performance. This technique will be used to test hypotheses to examine if financial integration has significantly affected economic growth as measured by GDP.

3.6 VALIDITY AND RELIABILITY OF DATA

The data obtained and used for this study (project work) were valid and reliable since they were sourced from Government Publications (i.e. secondary source: Central Bank of Nigeria (CBN) Statistical Bulletin, and World Bank Database for the period under review).

3.7 SUMMARY

This chapter gave an insight into the research methodology used to carry out the research study. The variables for the study and as well as the analytical tools has been expressly stated. The source from which the data was obtained was also stated.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

This chapter focuses on the presentation of data, empirical analysis of specified models of the research work, and the interpretation of the estimated results.

The data is analyzed using ADF unit root test, co-integration test, ordinary least square regression and granger causality test a statistical tools and results stated. The hypotheses which have been stated will be tested using the processed data. The results obtained will determine the acceptance or rejection of the hypotheses based on the decision rule.

Augmented Dickey Fuller Unit root test was used to test for the stationarity of each variable. The result of the co-integration test is reported next followed by the result of the ordinary least square. The Johansen co-integration test was used in this study, the Error correction model; and after which the granger causality test was conducted to determine the direction of causality between the variables.

4.1 DATA PRESENTATION

PERIOD	REAL GROSS DOMESTIC PRODUCT (RGDP) (N'BILLION)	EXTERNAL DEBT (ED) (N'BILLION)	REAL EFFECTIVE EXCHANGE RATE (REX) (%)	REAL INFLATION RATE (RINF) GDP DEFLATOR (%)	FOREIGN PRIVATE INVESTMENT (FPI) (N'BILLION)	TOTAL TRADE (X+M) N'BILLION	DEGREE OF OPENNESS (DOP = X+M/GDP) (N'BILLION)
1981	251.05	2.33	324.6	18.5	137.8	23.9	23.9/251.05 = 0.095 = 0.10
1982	246.73	8.82	333.7	4.8	1,624.9	19.0	19.0/246.73 = 0.077 = 0.08
1983	230.38	10.58	394.0	13.8	556.7	16.4	16.4/230.38 = 0.071 = 0.07
1984	227.25	14.81	546.3	13.3	634.8	16.3	16.3/227.25 = 0.072 = 0.07
1985	253.01	17.30	490.4	5.5	329.7	18.8	18.8/253.01 = 0.074 =0.07
1986	257.78	41.45	266.9	11.6	2,499.6	14.9	14.9/257.78 = 0.058 = 0.06
1987	256.00	100.79	85.2	67.4	680.0	48.2	48.2/256.00 = 0.188 = 0.19
1988	257.41	133.96	85.6	22.9	1,345.6	52.6	52.6/275.41 = 0.191 = 0.19
1989	295.09	240.39	76.2	45.0	-439.4	88.8	888.8/295.09 = 0.301 = 0.30
1990	328.61	298.61	70.8	9.3	-464.3	155.6	155.6/328.61 = 0.474 = 0.47
1991	328.64	328.45	59.9	17.6	1,802.0	211.8	211.8/328.64 = 0.645 = 0.65
1992	337.29	544.26	49.7	68.1	8,269.1	348.8	348.8/337.29 = 1.033 =1.03
1993	342.54	633.14	54.5	26.1	32,994.5	384.4	384.4/342.54 = 1.122 = 1.12
1994	345.23	648.81	100.8	31.0	1,455.6	368.8	368.8/345.23 = 1.068 =1.07
1995	352.65	716.87	160.1	113.1	48,677.1	1,705.8	1,705.8/352.65 = 4.837 = 4.84
1996	367.22	617.32	207.6	32.7	2,731.0	1,872.2	1,872.2/367.22 = 5.098 = 510
1997	377.83	595.93	235.9	1.0	5,731.0	2,087.4	2,087.4/377.83 = 5.525 = 5.53
1998	388.47	633.02	272.4	-5.7	24,079.7	1,589.3	1,589.3/388.47 = 4.091 = 4.09
1999	393.11	2,577.37	70.2	17.1	1,779.1	2,051.5	2,051.5/393.11 = 5.219 = 5.22
2000	412.33	3,097.38	69.9	35.2	3,347.0	2,930.7	2,930.7/412.33 = 7.108 = 7.11
2001	431.78	3,176.29	77.8	-0.3	3,377.0	3,226.1	3,226.1/431.78 = 7.472 = 7.47
2002	451.79	3,932.88	78.1	39.9	8,206.8	3,256.9	3,256.9/451.79 = 7.209 = 7.21
2003	495.01	4,478.33	73.2	11.1	13,055.6	5,168.1	5,168.1/495.01 = 10.440 = 10.44
2004	527.58	4,890.27	74.9	-0.2	19,908.7	6,589.8	6,589.8/527.58 = 12.491 = 12.49
2005	561.93	2,695.07	85.5	22.0	25,881.2	10,047.4	10,047.4/561.93 = 17.880 = 17.88
2006	595.82	451.46	91.5	17.3	41,470.7	10,433.2	10,433.2/595.82 = 17.511 = 17.51
2007	634.25	438.89	89.7	4.8	53,924.8	12,221.7	12,221.7/634.25 = 19.270 = 19.27
2008	672.20	523.25	99.1	10.8	49,456.2	15,980.9	15,980.9/672.20 = 23.774 = 23.77
2009	718.98	590.44	92.1	-4.3	41,429.4	14,087.0	14,087.0/718.98 = 19.593 = 19.59
2010	776.33	689.84	100.0	103.8	Nil	20,175.5	20,175.5/776.33 = 25.988 = 25.99
2011	834.00	896.85	100.3	9.5	Nil	26,232.5	26,232.5/834.00 = 31.454 = 31.45
2012	888.89	1,026.90	111.4	9.3	Nil	24,905.9	224,905.9/888.89 = 28.019 = 28.02
2013	950.11	1,373.58	118.8	5.9	Nil	24,701.4	24,701.4/950.11 = 25.998 = 26.00
2014	67,152.79	1,631.52	127.1	4.7	Nil	23,499.3	23,499.3/67,152.79 = 0.350 = 0.35

Source: Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank Data Base for the period under Review (1981-2014), 2014 is the New GDP (i.e GDP at 2010 Constant Basic Prices while 1981-2013 is GDP at 1990 Constant Basic Prices).

4.2 DATA ANALYSIS

Real Gross Domestic Product: Real Gross Domestic (RGDP) of the economy for 1981 stood at N251.05 billion Naira and decreased in a retrogressive manner from 1982-1984. There was increase in progressive form from 1985-2014.

External Debt: The External Debt (ED) of the country stood at N2.33 billion naira and increased to 1996. But there was a decrease in 1997, there was an increase 1998-2005. Again, another decrease from 2006-2007; Also, there was an increase between 2008-2013, and a decrease in 2014.

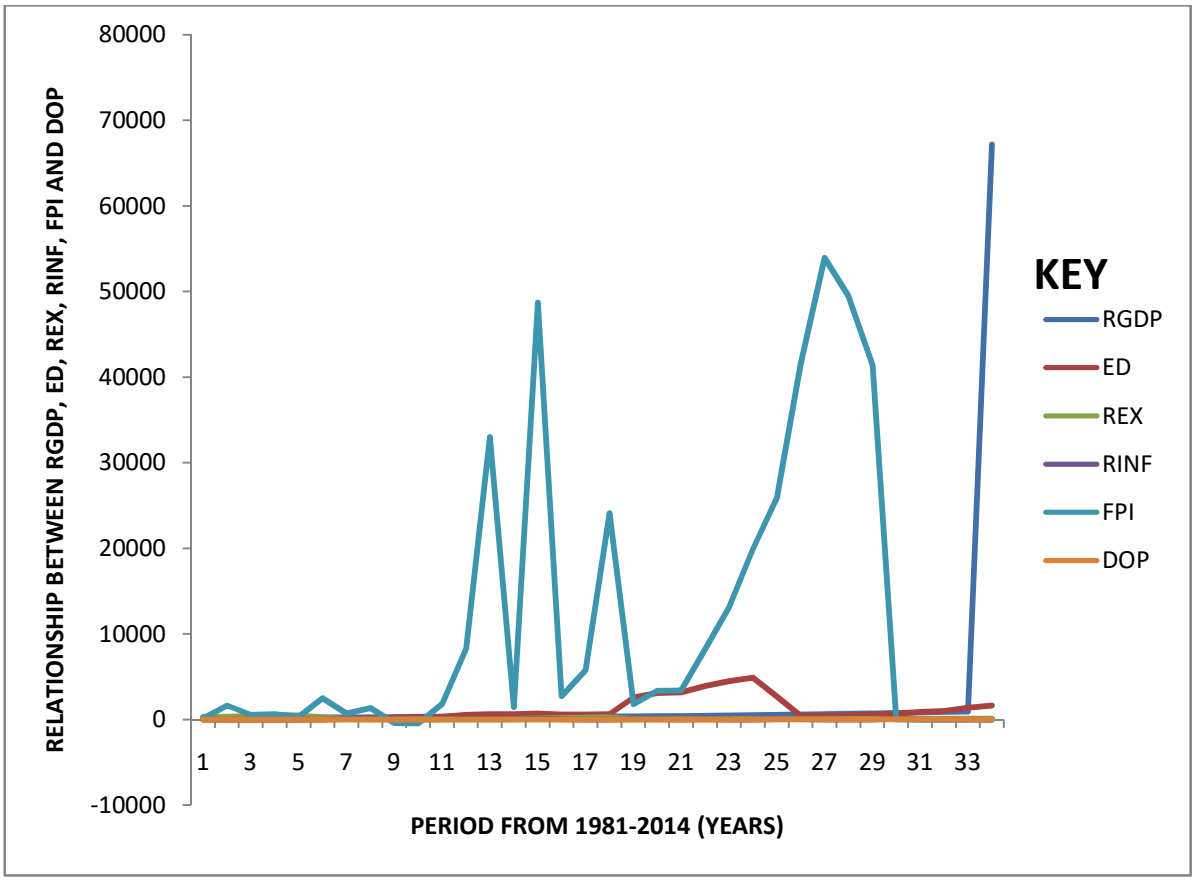
Real Effective Exchange Rate: The Real effective exchange rate (REX) was at N324.60 billion in 1981 and increased progressively till 1986. There was a decrease in 1987 and a slight increase between 1988-1989. Also, there was a decrease in retrogressive form from 1990-1993. There was an increase from 1994-1998 and from 1999-2000 there was a decrease in value; but there was an increase in value from 2001-2006. Again, the value of REX decreased in 2007, another increase in 2008, also, a decrease in 2009, and a progressive increase from 2010-2014.

Real Inflation Rate: The real inflation rate (GDP deflator) of the economy stood at N18.50 billion in1981 and was fluctuating and also exhibited negative values for the period under review.

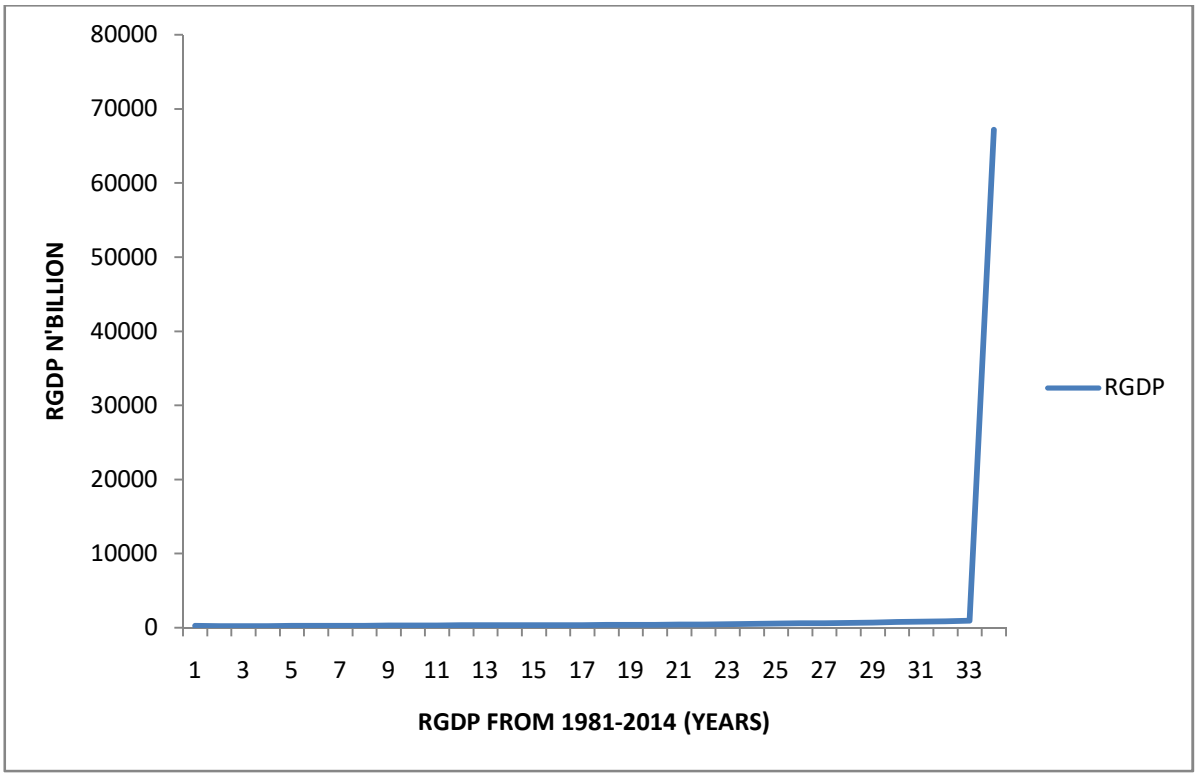
Foreign Private Investment: Foreign private investment (FPI) which also regarded as net capital flow of the economy stood at N137.80 billion naira in 1981 and was fluctuating, and exhibited negative values. But from 210-2014, there were no available data from the central bank of Nigeria (CBN) statistical bulletin.

Degree of Openness: The degree of openness (DOP) is the ratio of total trade to DGP ($^{X+M}/_{GDP}$). This was fluctuating for the period under review (1981-2014).

Graphical representation of the data presented in the table above:

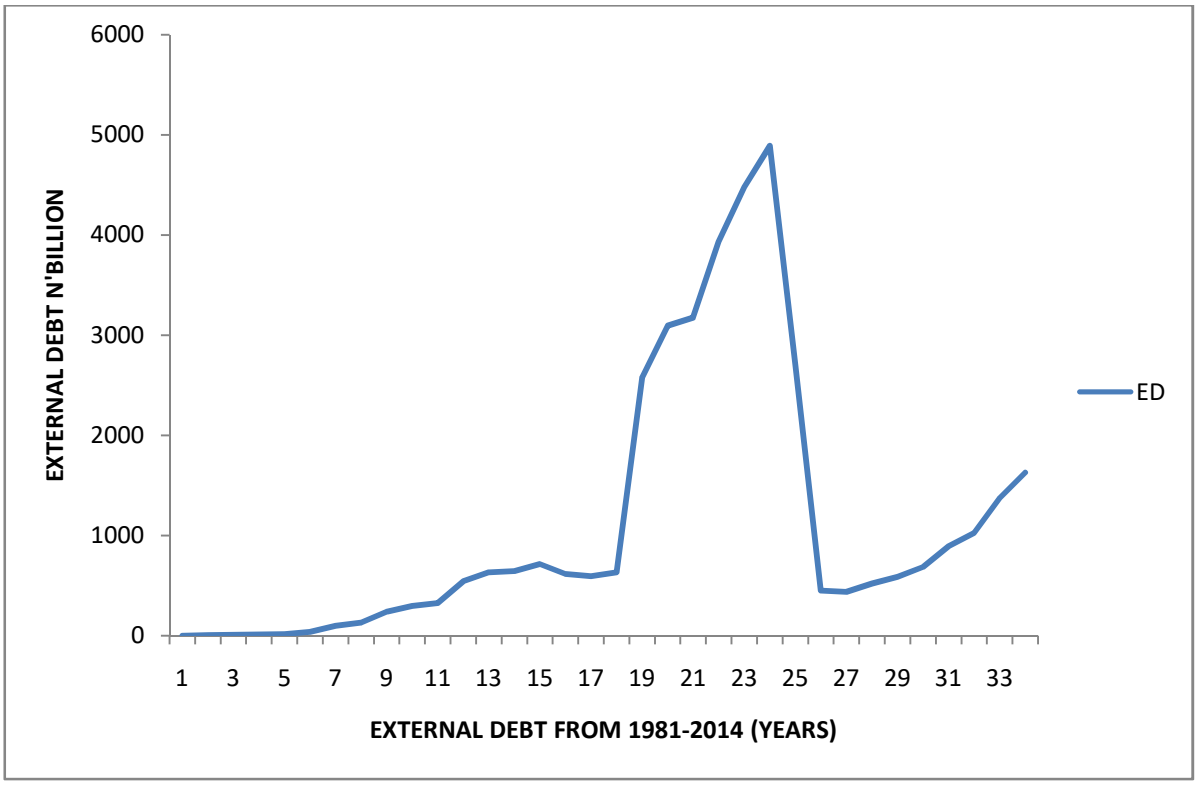


This shows the relationship between real gross domestic product (RGDP) and the independent/explanatory variables {external debt (ED), real effective exchange rate (REX), real inflation rate (RINF), foreign private investment (FPI), and degree of openness (DOP)} which are in naira and rate.

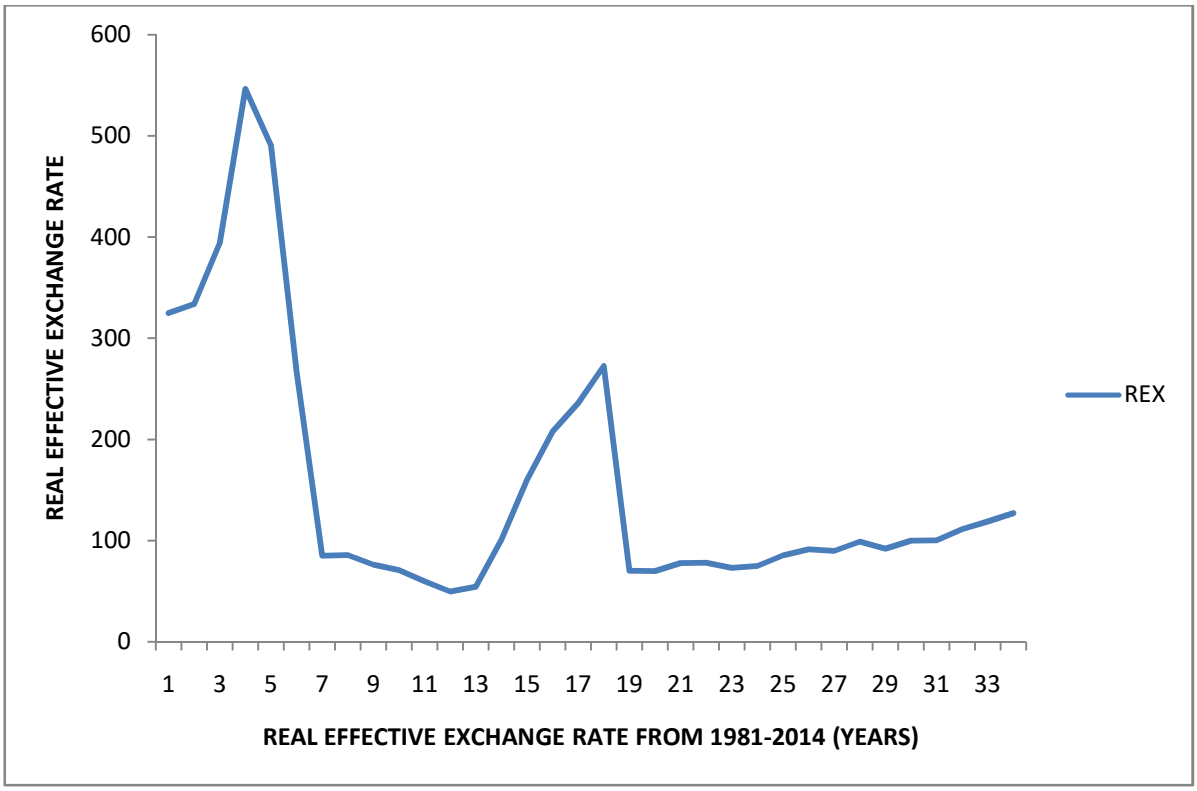


The figures show an apparent growth in the economy over the years. In 1981, RGDP figure is N251.05 billion, but there was a drop in 1982 (246.73billion) through to (N227.25 billion) in 1984. This drop could be attributed to the Easy Monetary Policy period when Nigeria was having excess reserve fund in her SDR up to the tune of $4.1billion and the period 1984-1985, military government was installed in which Expansionary Monetary Circular was issued to finance budget deficit.

From this period thereof, the RGDP witnessed a steady growth through to 2014. Growth rate were positive, suggesting that the economy had indeed experienced growth over the years. Unfortunately, there had been little or no development in Nigeria over this period as depicted by rising inflation, unemployment, misery, hunger and deteriorating infrastructure and quality of life generally.



The government had fiscal deficit all through with in the period under consideration. The country experienced a continuous rise in external debt and got to a peak in 2004 (N4,890.27 billion). Since then debt toll kept fluctuating. The country was salvaged from debts through debt forgiveness by international creditors (Paris club etc) in 2006 during Obasanjo regime and Ngozi Okonjo-Iweala the minister of finance then, hence, the need for fiscal policy improvement.



From 1970-1979 we had Major General M. Mohammed/Obasanjo administration in which they issued nine (9) monetary policies. These monetary circular are easy monetary policy, because these were oil boom MPCs. At this period, Nigeria had excess reserve fund in her SDR up to the tune of $4.1 billion. There was no need to restrict credit expansion.

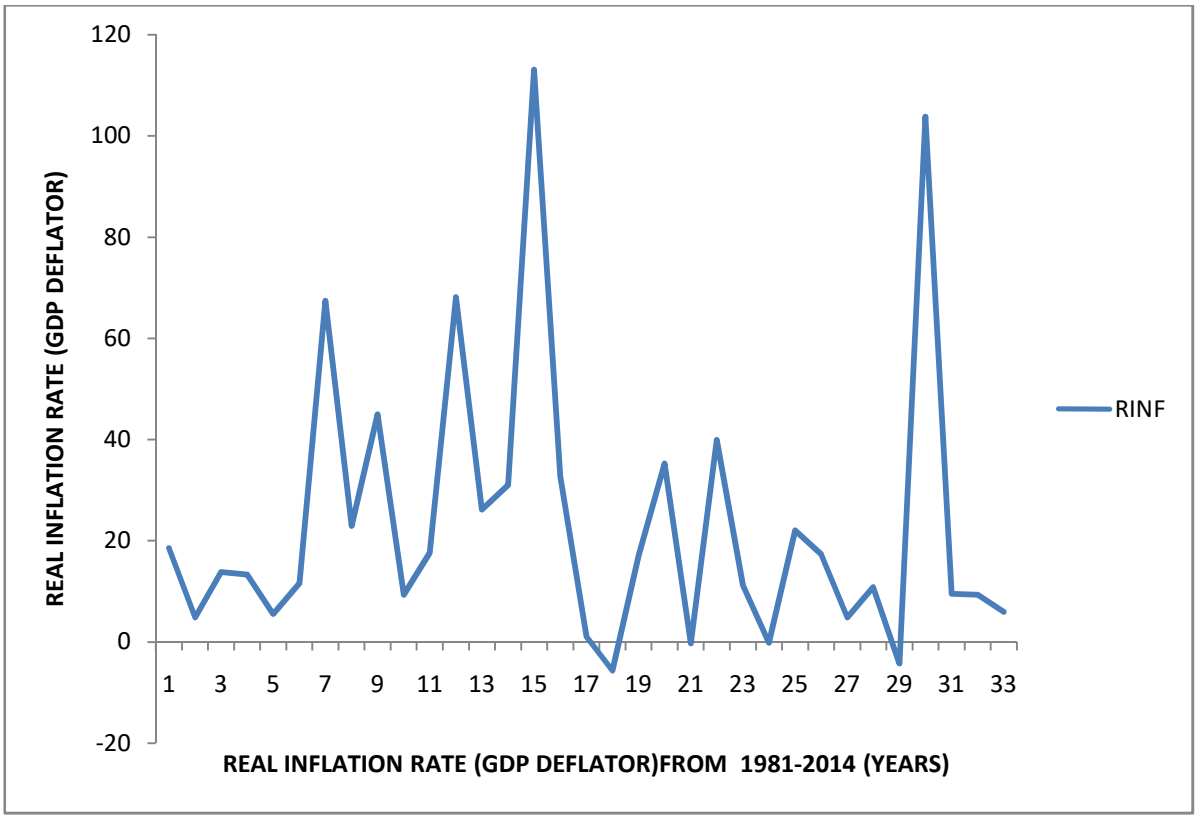
The period 1984-1985, military government was installed in which expansionary monetary circular was issued to finance budget deficit. This government was headed by Major General Buhari/Idiagbon, who felt that consumption was to be moderated and more investment in productive activities.

The period 1986-1990, these were the periods of restrictive monetary policy. The country was heavily indebted to external creditors. There was the need for sufficient liquidity to be

available to preferred sector of the economy. The General Babangida/Rear Admiral Ukiwe/Abacha's military government embarked on programmes such as National Directorate of Employment (NDE), People's bank and so on, which were economic programmes to aid youth and artisans employment.

1990-Date is deregulation, which is known as market base financial system. The market base is commercial oriented and the forces of demand and supply determines the interest rate.

Before SAP, Nigeria had pegged interest rate but under SAP, there were modification of monetary policy which is deregulation of the interest rate, establishment of a market-base foreign exchange (FOREX) system, and the pursuance of a restrictive monetary policy. All of this led to the nature of exchange rate (fluctuation of exchange rate) in Nigeria for the period under review.

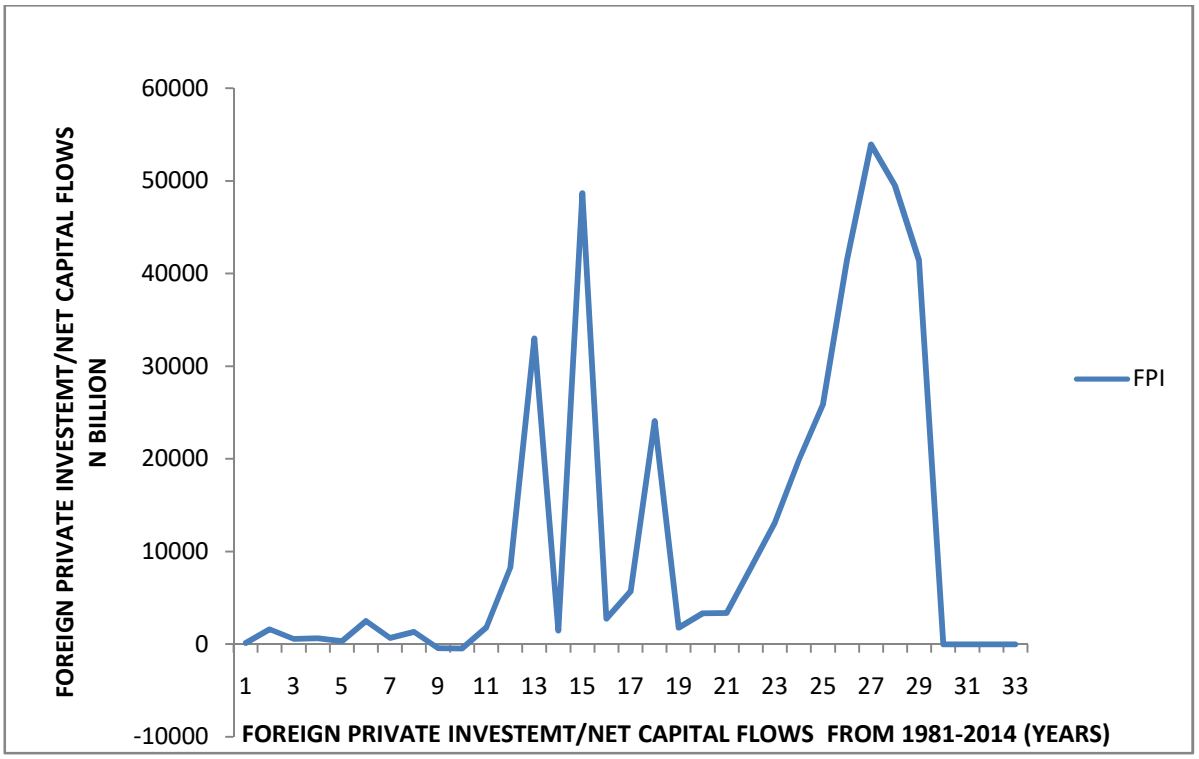


Prior to SAP, it was found empirically that two most important external factors contributory to Nigeria's inflation are rising world export price and falling world output.

The most important domestic or internal causes/factors were increasing government expenditures, rising domestic credit creation and supply bottlenecks such as shortage of raw materials and spare parts. The SAP has worsened the situation.

SAP induced causal factors of inflation in Nigeria. The measures under SAP that have triggered off chronic inflation include: external debt management strategies, second-tier (foreign exchange market) operations, removal of subsidies on petroleum products and fertilizer, privatization and commercialization, trade liberalization, and interest rates deregulation.

The costs of the SAP-induced inflation are of two broad types: (i) redistribution of income and wealth that serve no economic purpose; and (ii) reductions in the level or rate of growth production. A restrictive monetary policy was put in place in order to curtail inflation.



Looking at the figures in table 4.2 with regards to FPI, 1981 shows a figure of N137.8 billion, there was a sharp increase of about N1,624.9 billion in 1982. This could be attributed to the devaluation of the naira as a result of the pressure from the World Bank and other International Financial Institutions on the Nigeria government to attract foreign investments through the devaluation of Nigeria naira against other foreign currencies.

Same can be seen in 1986, the government of Babangida was at the pick of discussion with the IMF on loan package. Part of it was the devaluation of the naira to attract foreign investment, as such, the naira was lowered against other foreign currencies to attract FPI. Also, after the debate in 1986, in 1987 the conditionalities of IMF were accepted mostly on the side of accepting the devaluation. Hence, in 1988 there was sharp inflow of FPI to the turn of N1,345.6 billion.

Subsequently, there was a drop, even to a negative of three digits for 1989 and 1990. This drop is largely attributed to insecurity, lack of democratic political will from the military administration and the corrupt state of the nation at that time.

However, in 1991 the coast was becoming clearer that a democratically elected government will be put in place, hence, an increase in 1991, 1992 and tremendously in 1993.

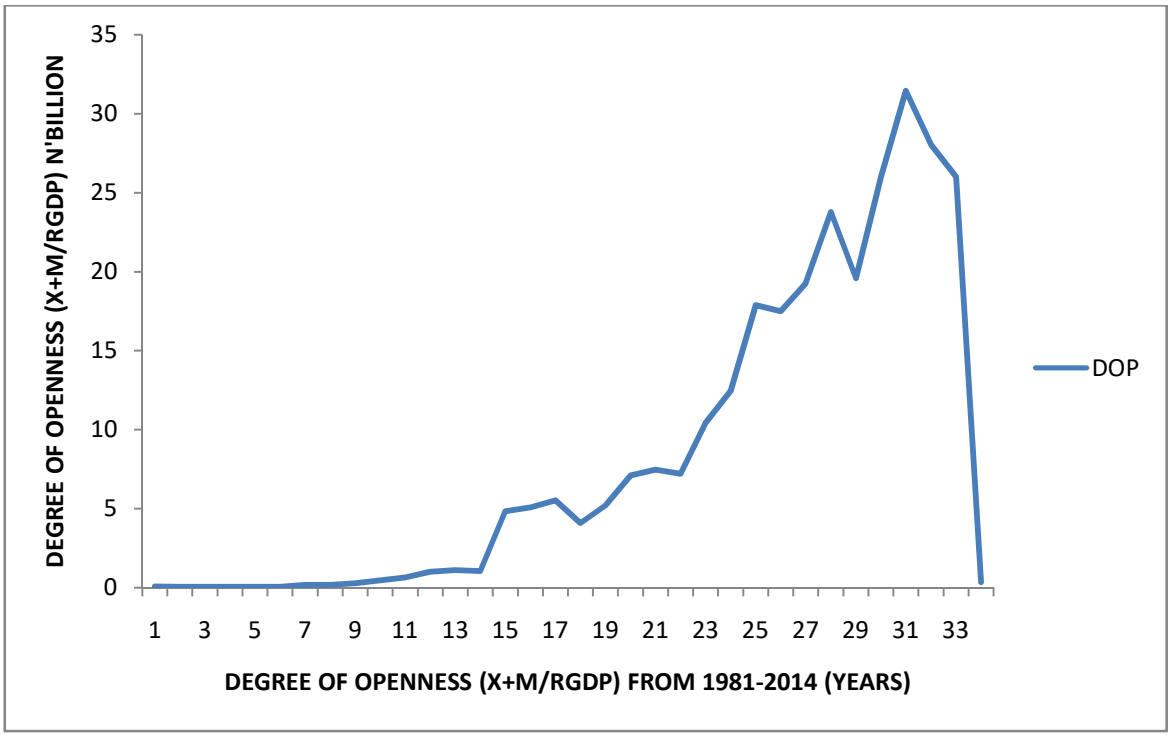
This view and the political tarrem started gathering momentum and foreign investors were willing to invest in the Nigeria economy mostly in the oil and banking sectors. This brought about the 1994 of N1,455.6 billion and grew to N48,677.1 billion in 1995 as a result of the "little" calmness that came into the country when Abacha stepped –in to replace the interim government of Chief Shonekan.

From this period, a fairly growth was seen in the FPI figures, except in 1999 when N1,779.1 billion was recorded. The year 1999, actually witnessed to the coming into power of the third republic in Nigeria.

A close look at the figures from this period shows the benefits of various legislations that were passed to attract FPI through various palliative measures that were put in place to make the naira lowered to other currencies. Other measures include; security, good investment environment, low tax and profit remittance laws, and removal of other bottle necks requirement that hitherto the coming of military regime.

In 2008, the FPI dropped to N49,456.3 billion from N53,924.8 billion in 2007; subsequently, there was a drop in 2009 to N41,429.4, these drops were as the result of the effect world economic down turn (global economic meltdown). This affected the FPI in a negative light, hence, the drop.

Although, figures for subsequent years were not obtained (not available in the CBN statistical bulletin) but there is a feeling that the growth is a continuous one.



Degree of openness is a measure of the extent to which an economy depends on trade with other countries or regions. It is the sum of a country's total exports and imports (total trade) as a ratio of its gross domestic product.

The figures show an apparent growth over the years. In 1981, DOP figure is N0.10 billion but there was a drop from 1982-1986. This drop could be attributed to the excess reserve fund in Nigeria's SDR that was up to the tune of $4.1 billion during easy monetary policy period. Also, between 1981-1983 was restrictive trade policy regime and 1984-1986, the economy had highly restrictive trade policy which could also contributed to the drop in DOP.

The introduction of SAP in 1986 brought in liberalization scheme such that a comprehensive tariff structure was adopted. It was characterized by the abolition exchange

controls on all current transactions, disbanding of market/commodity boards, removal of price controls placing excise duties on some items while removing them on others, reintroduction of import duty surcharge, introduction of duty free raw materials and intermediate products for manufactures of exportable (processing to take place within $1^1/_2$ years), refunding of import duties on raw materials for exports, reduction of import prohibition list. Since 1987, there had been an increase in DOP with little fluctuation.

The degree of openness (DOP) in the Nigeria showed that the economy had an increased participation in world trade, which increased the index of openness.

4.3 DECISION RULE

Sign P-value: If the Sign P-value is greater than the chosen level of significance (> 0.05), we accept the null hypothesis but if not (< 0.05), we accept the alternative.

4.4 INTERPRETATION AND ANALYSIS OF RESULT

UNIT ROOT TEST

The test for stationarity is done using the augmented dickey fuller (ADF) unit root test. To determine whether there is a presence of unit root or the series are stationary we investigated the time series characteristics of the variables (RGDP, ED, REX, RINF, FPI, and DOP). A variable is said to be stationary when it has no unit root which is denoted in literature as 1(0). A non-stationary variable can have one or more unit root and it is denoted by 1(d), d is the number of unit root that the variable possesses and by implication, the number of unit roots that the variable must be differenced in order to make it stationary.

Table 4.4:1 SUMMARY OF ADF UNITROOT TEST

Variables	**ADF Test Statistics**	**Mackinnon Critical Value @ 5%**	**No. of Time Difference**	**Remark**
RGDP	3.156100	-2.960411	1(1)	STATIONARY
ED	-2.356365	-2.960411	1(1)	STATIONARY
REX	-1.858773	-2.957110	1(0)	STATIONARY
RINF	-5.636894	-2.957110	1(0)	STATIONARY
FPI	-3.107440	-2.957110	1(0)	STATIONARY
DOP	0.252087	-2.957110	1(0)	STATIONARY

Source: Extracted from E-View 6 Output Result.

As depicted in the table above, RGDP and ED are stationary at first difference 1(1), while REX, RINF, FPI and DOP are stationary at order 1(0) respectively. This means that the variables are stationary at their respective level.

COINTEGRATION TEST AND ERROR CORRCTION MODEL

Having established stationary of the variables, we determine the existence of a long-run equilibrium relationship among the variables in the model. To realize this, the study employed the Johansen Co-integration technique. The co-integration results of the variables are presented.

Table 4.4.2: Johansen Co-integration Rank Test Result

RANK	TRACE STATISTIC	5% CRITICAL VALUE
0	116.1717	95.75366
1	65.14595	69.81889
2	37.53035	47.85613
3	21.90579	29.79707
4	7.747883	15.49471
5	0.169951	3.841466

Source: Extracted from E-View 6 Output Result

Trace test indicates non-cointegrating equations at 0.05 level.

*denotes rejection of the hypothesis at 0.05 level.

The result of the Johansen co-integration test presented above indicates non-cointegration equations. The result therefore, does not confirm the existence of co-integration among the variables.

Consequently, we can conclude that there is no existence of a long-run relationship between financial integration and growth volatility on Nigerian economy.

ORDINARY LEAST SQUARE REGRESSION RESULT

The result of the ordinary least square estimation is presented below:

Table 4.4.3: OLS Model

Dependent Variable: RGDP
Method: Least Squares
Date: 07/09/16 Time: 13:24
Sample (adjusted): 1981 2013
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	323.7570	24.56399	13.18014	0.0000
DOP	19.59941	0.895728	21.88098	0.0000
ED	-0.001941	0.006486	-0.299224	0.7671
FPI	-0.000690	0.000490	-1.406947	0.1709
REX	-0.172343	0.074934	-2.299934	0.0294
RINF	-0.311423	0.298942	-1.041749	0.3068
R-squared	0.959681	Mean dependent var		448.0997
Adjusted R-squared	0.952215	S.D. dependent var		204.8097
S.E. of regression	44.77107	Akaike info criterion		10.60397
Sum squared resid	54120.13	Schwarz criterion		10.87606
Log likelihood	-168.9655	Hannan-Quinn criter.		10.69552
F-statistic	128.5325	Durbin-Watson stat		1.354230
Prob(F-statistic)	0.000000			

Source: E-view 6 Output Result.

Recall that the specified model is:

RGDP = b0 + b1DOP +b2FPI + b3REX + b4ED + b5RINF + U

Thus, using the absolute values of all the variables, the estimated parameters of the short-run regression model is:

RGDP = 323.7570 +19.59941DOP + (-0.00194)ED + (-0.000690)FPI + (-0.172343)REX

+ (-0.311423)RINF + U

RGDP = 323.7570 + 19.59941DOP -0.001941ED -0.000690FPI -0.172343REX -0.311423RINF

+ U

The estimated model shows that there exist positive relationship between RGDP and DOP (Degree of Openness) of the economy. While negative relationship exists between RGDP,

ED, FPI, REX and RINF. The estimated result revealed that a unit change in degree of openness (DOP) will boost economic activities in Nigeria by value of 19.59941 percent (%). Likewise, a one percent (1%) change in external debt (ED), foreign private investment (FPI), real effective exchange rate (REX) and real inflation rate (RINF) will retard growth by 0.001941, 0.000690, 0.172343, and 0.311423 percent respectively.

The coefficient of determination (R^2) which measures how well the sample regression line fits the data is considered high, that is $R^2 = 0.959681$ which is 95.9681. This implies that about 95.97% of the regression model was explained by the independent/explanatory power while 4.03% was unexplained and has been taken care of by the stochastic disturbance term or error term U.

The Durbin-Watson statistic shows that there is presence of autocorrelation or seriel correlation in the residual as its value of 1.35, approximately 1.4 which is less than the Durbin-Watson value of 2 ($1.4 < 2$).

The F-statistic of the regression output stood at 128.5325. This implies that the regression plane is statistically significant.

Comparing Sign P-values with the chosen level of significance (0.05), it is observed that P-values (0.0000; 0.0294) for DOP and REX respectively are less than the chosen level of significance (0.05); hence, our null hypothesis one (H_{01}) which states that degree of openness does not have significant effect on growth on Nigerian economy and null

hypothesis two (H_{02}) which states that there is no significant relationship between exchange rate and growth on Nigerian economy are rejected. While, the P-values (0.7671, 0.1709 and 0.3068) for ED, FPI and RINF respectively are greater than the chosen level of significance (0.05), hence, our null hypotheses H_{02}, H_{03} and H_{04} which states that growth on Nigerian economy is not driven by foreign private investment; external debt does not have significant relationship with growth on Nigerian economy; and inflation does not have significant relationship with growth on Nigeria economy were accepted. But for the overall level of significant, the Pro(F-statistic) 0.000000 is less than the chosen level of significance (0.05); hence, our null hypotheses one to five (H_{01}, H_{02}, H_{03}, H_{04} and H_{05}) are rejected and the alternative hypotheses accepted.

4.5 SUMMARY

The objective of this study is to empirically examine the impact of financial integration on growth volatility on Nigerian economy. Hypotheses were tested and the result from OLS regression analysis revealed that there is a positive relationship between RGDP and DOP and a negative relationship between RGDP and ED, REX, RINF and FPI respectively.

The coefficient of determination R^2 = 95.97% showed that the estimated model has high explanatory/predictive power. The F-statistic 128.5325 indicates that the regression plane is statistically significant. The Durbin-Watson statistic 1.35, approximately 1.4 indicates the presence of autocorrelation in the model specified.

It was observed that DOP and REX were significant at their individual level of significance, since their p-values (0.0000 and 0.0294) were less than 0.05 chosen level of significance/critical value, while the p-values (0.7617, 0.1709 and 0.3068) for ED, FPI and RINF respectively were greater than 0.05 critical value/chosen level of significance. But for the overall level of significance, the Pro(F-statistic) 0.000000 is less than 0.05 chosen level/critical value, hence, our null hypotheses were rejected and alternative accepted.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter is the concluding part of this study. It focuses on discussion of findings, conclusion, recommendations and contribution to knowledge.

The major task in this paper is to investigate the impact of financial integration and growth volatility on Nigerian economy using recent econometric tool such as ADF Unit Root Test for stationarity, Co-integration for long-run effect and Ordinary least square (OLS) for short-run effect. First, we began with the analysis of time series with stochastic non-stationary components by analysing the unit root properties of the relevant series.

5.1 DISCUSSION OF FINDINGS

Here, we will discuss the results of the analyses in chapter four one after the other.

ADF UNIT ROOT TEST:

This is known as stationary test. From table 4.5:1, RGDP and ED are stationary at first difference 1(1), while REX, RINF, FPI and DOP are stationary at order 1(0) respectively. This means that the variables are stationary at their respective level.

COINTEGRATION TEST AND ERROR CORRCTION MODEL:

Having established stationary of the variables, we determine the existence of a long-run equilibrium relationship among the variables in the model. Trace test indicates non-

cointegrating equations at 0.05 level, while *denotes rejection of the hypothesis at 0.05 level.

The result of the Johansen co-integration test presented in table 4.5:2 indicates non-cointegration equations. The result therefore, does not confirm the existence of co-integration among the variables.

Consequently, we can conclude that there is no existence of a long-run relationship between financial integration and growth volatility on Nigerian economy.

ORDINARY LEAST SQUARE (OLS) REGRESSION RESULT:

Thus, using the absolute values of all the variables, the estimated parameters of the short-run regression model from table 4.5:3,

RGDP = 323.7570 + 19.59941DOP -0.001941ED -0.000690FPI -0.172343REX -0.311423RINF

+ U

The estimated model shows that there exist positive relationship between RGDP and DOP (Degree of Openness) of the economy. The estimated result revealed that a unit change in degree of openness (DOP) will boost economic activities in Nigeria by value of 19.59941 percent (%). Likewise, a one percent (1%) change in external debt (ED), foreign private investment (FPI), real effective exchange rate (REX) and real inflation rate (RINF) will retard growth by 0.001941, 0.000690, 0.172343, and 0.311423 percent respectively.

The coefficient of determination (R^2) which measures how well the sample regression line fits the data is considered high, that is, $R^2 = 0.959681$ which is 95.9681. This implies that about 95.97% of the regression model was explained by the independent/explanatory power while 4.03% was unexplained and has been taken care of by the stochastic disturbance term or error term U.

The Durbin-Watson statistic showed that there is presence of autocorrelation or seriel correlation in the residual as its value of 1.35, approximately 1.4 which is less than the Durbin-Watson value of 2 ($1.4 < 2$).

The F-statistic of the regression output stood at 128.5325. This implies that the regression plane is statistically significant.

Comparing Sign P-values with the chosen level of significance (0.05), it is observed that P-values (0.0000; 0.0294) for DOP and REX respectively are less than the chosen level of significance (0.05); hence, our null hypothesis one (H_{01}) which states that degree of openness does not have significant effect on growth on Nigerian economy and null hypothesis two (H_{02}) which states that there is no significant relationship between exchange rate and growth on Nigerian economy are rejected. While, the P-values (0.7671, 0.1709 and 0.3068) for ED, FPI and RINF respectively are greater than the chosen level of significance (0.05), hence, our null hypotheses H_{02}, H_{03} and H_{04} which states that growth on Nigerian economy is not driven by foreign private investment; external debt does not have significant relationship with growth on Nigerian economy; and inflation does not have significant

relationship with growth on Nigerian economy were accepted. But for the overall level of significant, the Pro(F-statistic) 0.000000 is less than the chosen level of significance (0.05); hence, our null hypotheses one to five (H_{01}, H_{02}, H_{03}, H_{04} and H_{05}) are rejected and the alternative hypotheses accepted.

5.2 CONCLUSION

The results and findings of this study revealed that financial integration has significant impact on economic growth in Sub-Saharan Africa (SSA)/developing countries, Nigeria in particular but only in the short-run, since there was no existence of long-run relationship between financial integration and growth of Nigerian economy.

This study confirms the validity of the theoretical work by Gourinchas and Jeanne (2002) which implies that financial liberalization yields only a one-off benefit for economies in the short-term, which subsequently return to their long-term growth path. Also, McKinnon and Pill (1999) argued that, in the short-run, improved access to foreign capital may lead to "over borrowing", that is, an investment boom, and thus, temporarily higher growth.

However, this initial bubble may be followed by a severe bust, financial crisis and economic contraction as the boom becomes unsustainable. Hence, countries opening up their financial market may experience a boom and higher growth in the short-run, followed by a recession and a temporary "bust" in the medium-term, and may reap the full gain from liberalization only in the very long-run. The theoretical arguments by McKinnon and Pill (1997, 1999) therefore imply a short-run gain and either no gain or a medium-to long-run pain from

financial liberalization. The study equally confirm this through the results of the OLS is in agreement to the short-run.

Also, the results and findings of this study corroborated the findings of other studies in similar areas such as the empirical work by Kraay (1998), Edison, Levine, Ricci and Slok (2002), and Fratzcsher and Bussiere (2004) which did not confirm a robust long-term impact of financial openness on growth. Their results support Rodrik (1998) who concluded that capital controls are essentially uncorrelated with long-term economic performance.

Again, this study is in agreement with the work of Friedrich, Schnable and Zettelmeyer (2010), using the methodology by Rajan and Zingales (1998) based on industry-level data from a sample of low and middle income countries, it shows that the effect of financial integration on growth is not only statistically significant, but also economically important.

Also, the study being on the Nigeria emerging market follows the findings of Friedrich et al (2010) that emerging Europe market conforms with the neoclassical growth theory, which predicts that openness to foreign capital should allow countries to grow faster towards their steady state income levels. This suggests that political integration can considerably increase the benefits of financial integration.

Furthermore, the results suggest that financial integration works best when accompanied by a process of political integration with more advanced countries. In this vein, Nigeria should

copy from the European model as stated by Friedrich et al (2010) that it can be replicable elsewhere.

The study therefore, concludes that financial integration promotes economic growth in the short-run, in that in the neoclassical framework, all effects are generated through capital flows. In the standard model, opening international capital markets generates flows from capital- abundant towards capital-scarce countries, thereby accelerating convergence (hence, short-term growth) in the poor counties.

5.3 RECOMMENDATIONS

Based on the findings and conclusion of this research work, the study therefore, recommends that:

There should be adoption of direct channels which include augmentation of domestic savings through diversification of production base to enhance export sector, reduction in the cost of capital through better global allocation of risk, development of financial sector and enhance technical know-how.

Also, the indirect channels associated with promotion of trade specialization and inducement for better economic policies for example, appropriate exchange rate, and monetary and fiscal policies (Levine 1996, Kalemi-Ozcan, Sorensen 2003), should be adopted in order to increase financial flow that can enhance growth and reduce inflation. Also, the issues of socio-economic, religious and political instability should be re-examined.

Government has to put measures in place to control the outflow of capital from the country to other countries. This is to enable the country reap the benefits of reinvesting profits generated from Nigeria's based companies instead of taking such profits channeled outside the country thereby causing negative growth.

Incentives should be put in place to encourage inflow of funds into the country through favourable trade practices. This gives confidence to trade partners outside the country and boost trade and economic growth.

5.4 CONTRIBUTION TO KNOWLEDGE

This work examined the impact of financial integration and growth volatility on Nigerian economy. This work contributed to knowledge specifically by using external debt (ED), real effective exchange rate (REX), real inflation rate (RINF), foreign private investment (FPI), degree of openness (DOP) and real gross domestic product (RGDP) as the variables to know the relationship between financial integration and economic growth in Nigeria during the specified period. This goes further than most other studies did in this area.

The study uses data for a 34-year period to examine the relationship between financial integration and growth volatility.

The study holds a unique model to examine the relationship between financial integration and growth volatility [The study employs the model of other authors but introduces foreign private investment (FPI) as a new variable (independent)].

While other studies related financial integration to growth, this study relates it to growth volatility.

Also, compared to the previous studies, this study was able to show that the degree of openness as a mutually independent variable if properly channeled can lead to economic growth.

5.5 SUGGESTION FOR FURTHER STUDY

This study suggests that the impact of policy combination of financial integration and monetary independency in Nigeria be examined by future researchers.

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5.7 APPENDIX

EXTRACTED EFFICIENCY PARAMETERS (1981-2014)

obs	RGDP	ED	REX	RINF	FPI	DOP
1981	251.0500	2.330000	324.6000	18.50000	137.8000	0.100000
1982	246.7300	8.820000	333.7000	4.800000	1624.900	0.080000
1983	230.3800	10.58000	394.0000	13.80000	556.7000	0.070000
1984	227.2500	14.81000	546.3000	13.30000	634.8000	0.070000
1985	253.0100	17.30000	490.4000	5.500000	329.7000	0.070000
1986	257.7800	41.45000	266.9000	11.60000	2499.600	0.070000
1987	256.0000	100.7900	85.20000	67.40000	680.0000	0.190000
1988	257.4100	133.9600	85.60000	22.90000	1345.600	0.190000
1989	295.0900	240.3900	76.20000	45.00000	-439.4000	0.300000
1990	328.6100	298.6100	70.80000	9.300000	-464.3000	0.470000
1991	328.6400	328.4500	59.90000	17.60000	1802.000	0.650000
1992	337.2900	544.2600	49.70000	68.10000	8269.100	1.030000
1993	342.5400	633.1400	54.50000	26.10000	32994.50	1.120000
1994	345.2300	648.8100	100.8000	31.00000	1455.600	1.070000
1995	352.6500	716.8700	160.1000	113.1000	48677.10	4.840000
1996	367.2200	617.3200	207.6000	32.70000	2731.000	5.100000
1997	377.8300	595.9300	235.9000	1.000000	5731.000	5.530000
1998	388.4700	633.0200	272.4000	-5.700000	24079.70	4.090000
1999	393.1100	2577.370	70.20000	17.10000	1779.100	5.220000
2000	412.3300	3097.380	69.90000	35.20000	3347.000	7.110000
2001	431.7800	3176.290	77.80000	-0.300000	3377.000	7.470000
2002	451.7900	3932.880	78.10000	39.90000	8206.800	7.210000
2003	495.0100	4478.330	73.20000	11.10000	13055.60	10.44000
2004	527.5800	4890.270	74.90000	-0.200000	19908.70	12.49000
2005	561.9300	2695.070	85.50000	22.00000	25881.20	17.88000
2006	595.8200	451.4600	91.50000	17.30000	41470.70	17.51000
2007	634.2500	438.8900	89.70000	4.800000	53924.80	19.27000
2008	672.2000	523.2500	99.10000	10.80000	49456.20	23.77000
2009	718.9800	590.4400	92.10000	-4.300000	41429.40	19.59000
2010	776.3300	689.8400	100.0000	103.8000	0.000000	25.99000
2011	834.0000	896.8500	100.3000	9.500000	0.000000	31.45000
2012	888.8900	1026.900	111.4000	9.300000	0.000000	28.02000
2013	950.1100	1373.580	118.8000	5.900000	0.000000	26.00000
2014	67152.79	1631.520	127.1000	4.700000	0.000000	0.350000

Augmented Dickey-Fuller Unit Root Test on RGDP

Null Hypothesis: RGDP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.156100	1.0000
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP)
Method: Least Squares
Date: 07/09/16 Time: 13:06
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(-1)	0.067722	0.021458	3.156100	0.0038
D(RGDP(-1))	0.280752	0.199168	1.409625	0.1697
C	-12.76708	6.591547	-1.936887	0.0629

R-squared	0.722889	Mean dependent var	22.68968
Adjusted R-squared	0.703095	S.D. dependent var	20.86721
S.E. of regression	11.37033	Akaike info criterion	7.791658
Sum squared resid	3619.965	Schwarz criterion	7.930431
Log likelihood	-117.7707	Hannan-Quinn criter.	7.836894
F-statistic	36.52122	Durbin-Watson stat	1.808485
Prob(F-statistic)	0.000000		

Augmented Dickey-Fuller Unit Root Test on ED

Null Hypothesis: ED has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.356365	0.1619
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ED)
Method: Least Squares
Date: 07/09/16 Time: 13:43
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ED(-1)	-0.193592	0.082157	-2.356365	0.0257
D(ED(-1))	0.484352	0.163563	2.961252	0.0062
C	246.8984	144.0652	1.713796	0.0976

R-squared	0.295172	Mean dependent var	44.02452
Adjusted R-squared	0.244827	S.D. dependent var	711.4055
S.E. of regression	618.2163	Akaike info criterion	15.78332
Sum squared resid	10701360	Schwarz criterion	15.92209
Log likelihood	-241.6415	Hannan-Quinn criter.	15.82856
F-statistic	5.862998	Durbin-Watson stat	1.847830
Prob(F-statistic)	0.007467		

Augmented Dickey-Fuller Unit Root Test on REX

Null Hypothesis: REX has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.858773	0.3466
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(REX)
Method: Least Squares
Date: 07/09/16 Time: 13:44
Sample (adjusted): 1982 2013
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
REX(-1)	-0.176457	0.094932	-1.858773	0.0729
C	21.29617	19.37357	1.099238	0.2804

R-squared	0.103274	Mean dependent var	-6.431250
Adjusted R-squared	0.073383	S.D. dependent var	72.64574
S.E. of regression	69.92947	Akaike info criterion	11.39331
Sum squared resid	146703.9	Schwarz criterion	11.48492
Log likelihood	-180.2930	Hannan-Quinn criter.	11.42368
F-statistic	3.455037	Durbin-Watson stat	1.265283
Prob(F-statistic)	0.072895		

Augmented Dickey-Fuller Unit Root Test on RINF

Null Hypothesis: RINF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.636894	0.0001
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RINF)
Method: Least Squares
Date: 07/09/16 Time: 13:45
Sample (adjusted): 1982 2013
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RINF(-1)	-1.034578	0.183537	-5.636894	0.0000
C	24.54282	6.778937	3.620453	0.0011

R-squared	0.514363	Mean dependent var	-0.393750
Adjusted R-squared	0.498175	S.D. dependent var	41.01740
S.E. of regression	29.05655	Akaike info criterion	9.636827
Sum squared resid	25328.50	Schwarz criterion	9.728435
Log likelihood	-152.1892	Hannan-Quinn criter.	9.667192
F-statistic	31.77457	Durbin-Watson stat	1.986862
Prob(F-statistic)	0.000004		

Augmented Dickey-Fuller Unit Root Test on FPI

Null Hypothesis: FPI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.107440	0.0360
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FPI)
Method: Least Squares
Date: 07/09/16 Time: 13:43
Sample (adjusted): 1982 2013
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FPI(-1)	-0.487174	0.156777	-3.107440	0.0041
C	6001.363	3312.333	1.811823	0.0800

R-squared	0.243498	Mean dependent var	-4.306250
Adjusted R-squared	0.218281	S.D. dependent var	17211.10
S.E. of regression	15217.17	Akaike info criterion	22.15870
Sum squared resid	6.95E+09	Schwarz criterion	22.25031
Log likelihood	-352.5392	Hannan-Quinn criter.	22.18906
F-statistic	9.656181	Durbin-Watson stat	2.274835
Prob(F-statistic)	0.004106		

Augmented Dickey-Fuller Unit Root Test on DOP

Null Hypothesis: DOP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.252087	0.9718
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DOP)
Method: Least Squares
Date: 07/09/16 Time: 13:09
Sample (adjusted): 1982 2013
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DOP(-1)	0.011279	0.044741	0.252087	0.8027
C	0.718279	0.556334	1.291093	0.2065

R-squared	0.002114	Mean dependent var	0.809375
Adjusted R-squared	-0.031149	S.D. dependent var	2.356371
S.E. of regression	2.392789	Akaike info criterion	4.643258
Sum squared resid	171.7631	Schwarz criterion	4.734866
Log likelihood	-72.29212	Hannan-Quinn criter.	4.673623
F-statistic	0.063548	Durbin-Watson stat	2.235215
Prob(F-statistic)	0.802693		

Johansen Cointegration Test

Date: 07/09/16 Time: 13:46
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDP DOP ED REX FPI RINF
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.807179	116.1717	95.75366	0.0010
At most 1	0.589683	65.14595	69.81889	0.1115
At most 2	0.395902	37.53035	47.85613	0.3229
At most 3	0.366634	21.90579	29.79707	0.3038
At most 4	0.216864	7.747883	15.49471	0.4927
At most 5	0.005467	0.169951	3.841466	0.6802

Trace test indicates 1 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 *	0.807179	51.02570	40.07757	0.0020
At most 1	0.589683	27.61560	33.87687	0.2318
At most 2	0.395902	15.62456	27.58434	0.6974
At most 3	0.366634	14.15791	21.13162	0.3522
At most 4	0.216864	7.577931	14.26460	0.4232
At most 5	0.005467	0.169951	3.841466	0.6802

Max-eigenvalue test indicates 1 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 Cointegrating Coefficients (normalized by b'*S11*b=I):

RGDP	DOP	ED	REX	FPI	RINF
-0.033556	0.757983	4.07E-05	-0.007981	-1.73E-05	0.017760
0.015203	-0.246678	-0.000305	-0.005591	-2.42E-05	-0.056510
-0.015390	0.291489	-0.000200	-0.002040	-7.28E-05	-0.009290
-0.010575	0.143655	0.000768	-0.001895	-7.56E-06	0.009745
0.019597	-0.413554	-0.000316	-0.003318	-1.40E-05	0.017300
-0.039786	0.585446	-0.000339	-0.009565	1.79E-05	-0.027448

Unrestricted Adjustment Coefficients (alpha):

D(RGDP)	7.955065	0.806802	-1.115032	0.668239	-3.281545	-0.215569
D(DOP)	-0.486491	0.032107	-1.057801	0.616994	-0.042776	-0.022374
D(ED)	-5.421350	-11.70451	26.55331	-221.1309	88.29808	-32.04753
D(REX)	38.89298	11.18093	-10.33548	9.118668	14.80263	2.052069
D(FPI)	-1319.930	5845.583	4842.058	5168.542	1138.507	-218.0859
D(RINF)	-6.962877	17.71558	-8.212542	-1.636562	-5.599414	0.198186

1 Cointegrating Equation(s): Log likelihood -1060.783

Johansen Cointegration Test

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	DOP	ED	REX	FPI	RINF
1.000000	-22.58882	-0.001212	0.237846	0.000517	-0.529260
	(0.66225)	(0.00294)	(0.03367)	(0.00025)	(0.20916)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.266937
	(0.06208)
D(DOP)	0.016325
	(0.01403)
D(ED)	0.181917
	(4.19341)
D(REX)	-1.305080
	(0.37357)
D(FPI)	44.29112
	(100.210)
D(RINF)	0.233644
	(0.20676)

2 Cointegrating Equation(s): Log likelihood -1046.975

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	DOP	ED	REX	FPI	RINF
1.000000	0.000000	-0.068186	-1.912242	-0.006964	-11.84661
		(0.03979)	(0.45682)	(0.00323)	(2.78390)
0.000000	1.000000	-0.002965	-0.095184	-0.000331	-0.501016
		(0.00179)	(0.02055)	(0.00015)	(0.12525)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.254672	5.830781
	(0.06788)	(1.46871)
D(DOP)	0.016813	-0.376672
	(0.01540)	(0.33333)
D(ED)	0.003978	-1.222041
	(4.60284)	(99.5952)
D(REX)	-1.135100	26.72211
	(0.40102)	(8.67727)
D(FPI)	133.1594	-2442.462
	(100.434)	(2173.17)
D(RINF)	0.502967	-9.647788
	(0.18168)	(3.93108)

3 Cointegrating Equation(s): Log likelihood -1039.163

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	DOP	ED	REX	FPI	RINF
1.000000	0.000000	0.000000	-1.253306	0.007805	-3.785249
			(0.50585)	(0.00397)	(3.12147)
0.000000	1.000000	0.000000	-0.066531	0.000311	-0.150487
			(0.02246)	(0.00018)	(0.13862)
0.000000	0.000000	1.000000	9.663759	0.216590	118.2255
			(6.97845)	(0.05472)	(43.0621)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.237511	5.505760	0.000301
	(0.07297)	(1.55133)	(0.00067)
D(DOP)	0.033092	-0.685010	0.000182
	(0.01418)	(0.30153)	(0.00013)
D(ED)	-0.404682	6.517969	-0.001966
	(4.98346)	(105.941)	(0.04585)

D(REX)	-0.976035	23.70943	0.000240
	(0.42601)	(9.05638)	(0.00392)
D(FPI)	58.63937	-1031.053	-2.807783
	(101.107)	(2149.39)	(0.93027)
D(RINF)	0.629360	-12.04166	-0.004046
	(0.18464)	(3.92523)	(0.00170)

4 Cointegrating Equation(s): Log likelihood -1032.084

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	DOP	ED	REX	FPI	RINF
1.000000	0.000000	0.000000	0.000000	0.020913	5.796409
				(0.00602)	(4.58202)
0.000000	1.000000	0.000000	0.000000	0.001007	0.358153
				(0.00029)	(0.22189)
0.000000	0.000000	1.000000	0.000000	0.115515	44.34501
				(0.03562)	(27.1010)
0.000000	0.000000	0.000000	1.000000	0.010459	7.645106
				(0.00290)	(2.20967)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.244578	5.601756	0.000814	-0.066992
	(0.07527)	(1.56882)	(0.00155)	(0.01847)
D(DOP)	0.026568	-0.596375	0.000656	0.004692
	(0.01368)	(0.28506)	(0.00028)	(0.00336)
D(ED)	1.933715	-25.24863	-0.171892	0.473548
	(4.79068)	(99.8485)	(0.09880)	(1.17557)
D(REX)	-1.072463	25.01937	0.007247	-0.369116
	(0.43365)	(9.03819)	(0.00894)	(0.10641)
D(FPI)	3.983484	-288.5651	1.163930	-41.82298
	(94.6497)	(1972.71)	(1.95190)	(23.2258)
D(RINF)	0.646666	-12.27676	-0.005303	-0.023627
	(0.19049)	(3.97021)	(0.00393)	(0.04674)

5 Cointegrating Equation(s): Log likelihood -1028.295

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	DOP	ED	REX	FPI	RINF
1.000000	0.000000	0.000000	0.000000	0.000000	-24.10349
					(7.86649)
0.000000	1.000000	0.000000	0.000000	0.000000	-1.081384
					(0.37432)
0.000000	0.000000	1.000000	0.000000	0.000000	-120.8068
					(47.0012)
0.000000	0.000000	0.000000	1.000000	0.000000	-7.308497
					(3.77850)
0.000000	0.000000	0.000000	0.000000	1.000000	1429.703
					(432.840)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.308886	6.958853	0.001852	-0.056104	-3.54E-05
	(0.07722)	(1.61315)	(0.00153)	(0.01801)	(0.00014)
D(DOP)	0.025730	-0.578685	0.000670	0.004834	8.06E-05
	(0.01513)	(0.31614)	(0.00030)	(0.00353)	(2.7E-05)
D(ED)	3.664078	-61.76468	-0.199806	0.180565	-0.001120
	(5.23538)	(109.369)	(0.10404)	(1.22129)	(0.00919)
D(REX)	-0.782378	18.89768	0.002567	-0.418233	-0.000468
	(0.45878)	(9.58409)	(0.00912)	(0.10702)	(0.00081)
D(FPI)	26.29462	-759.3995	0.804014	-45.60068	-0.526153
	(104.200)	(2176.79)	(2.07081)	(24.3075)	(0.18298)

Johansen Cointegration Test

D(RINF)	0.536935	-9.961096	-0.003533	-0.005047	0.000381
	(0.20398)	(4.26115)	(0.00405)	(0.04758)	(0.00036)

Dependent Variable: RGDP
Method: Least Squares
Date: 07/09/16 Time: 13:24
Sample (adjusted): 1981 2013
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	323.7570	24.56399	13.18014	0.0000
DOP	19.59941	0.895728	21.88098	0.0000
ED	-0.001941	0.006486	-0.299224	0.7671
FPI	-0.000690	0.000490	-1.406947	0.1709
REX	-0.172343	0.074934	-2.299934	0.0294
RINF	-0.311423	0.298942	-1.041749	0.3068

R-squared	0.959681	Mean dependent var	448.0997
Adjusted R-squared	0.952215	S.D. dependent var	204.8097
S.E. of regression	44.77107	Akaike info criterion	10.60397
Sum squared resid	54120.13	Schwarz criterion	10.87606
Log likelihood	-168.9655	Hannan-Quinn criter.	10.69552
F-statistic	128.5325	Durbin-Watson stat	1.354230
Prob(F-statistic)	0.000000		

Pairwise Granger Causality Tests
Date: 07/09/16 Time: 12:49
Sample: 1981 2014
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DOP does not Granger Cause RGDP	31	0.50245	0.6108
RGDP does not Granger Cause DOP		2.38138	0.1123
ED does not Granger Cause RGDP	31	0.29816	0.7447
RGDP does not Granger Cause ED		0.13751	0.8722
FPI does not Granger Cause RGDP	31	0.03384	0.9668
RGDP does not Granger Cause FPI		0.00988	0.9902
REX does not Granger Cause RGDP	31	0.53344	0.5929
RGDP does not Granger Cause REX		3.58686	0.0421
RINF does not Granger Cause RGDP	31	0.29569	0.7465
RGDP does not Granger Cause RINF		0.95523	0.3978
ED does not Granger Cause DOP	31	1.56793	0.2276
DOP does not Granger Cause ED		1.24608	0.3042
FPI does not Granger Cause DOP	31	3.11021	0.0615
DOP does not Granger Cause FPI		0.39723	0.6762
REX does not Granger Cause DOP	31	0.55273	0.5820
DOP does not Granger Cause REX		0.22670	0.7987
RINF does not Granger Cause DOP	31	1.67738	0.2065
DOP does not Granger Cause RINF		2.00827	0.1545
FPI does not Granger Cause ED	31	0.12883	0.8797
ED does not Granger Cause FPI		4.40835	0.0225
REX does not Granger Cause ED	31	0.16091	0.8522
ED does not Granger Cause REX		0.32945	0.7223
RINF does not Granger Cause ED	31	0.15801	0.8547
ED does not Granger Cause RINF		0.53023	0.5947
REX does not Granger Cause FPI	31	0.68086	0.5150
FPI does not Granger Cause REX		0.42084	0.6609
RINF does not Granger Cause FPI	31	0.48971	0.6183
FPI does not Granger Cause RINF		0.39504	0.6776
RINF does not Granger Cause REX	31	0.42370	0.6591
REX does not Granger Cause RINF		0.89481	0.4209

Dependent Variable: RGDP
Method: Least Squares
Date: 07/12/16 Time: 13:43
Sample (adjusted): 1981 2013
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	323.7570	8.74E-14	3.70E+15	0.0000
DOP	19.59941	3.19E-15	6.15E+15	0.0000
ED	-0.001941	2.31E-17	-8.41E+13	0.0000
FPI	-0.000690	1.75E-18	-3.95E+14	0.0000
REX	-0.172343	2.67E-16	-6.46E+14	0.0000
RINF	-0.311423	1.06E-15	-2.93E+14	0.0000
ECM	1.000000	6.85E-16	1.46E+15	0.0000

R-squared	1.000000	Mean dependent var	448.0997
Adjusted R-squared	1.000000	S.D. dependent var	204.8097
S.E. of regression	1.59E-13	Sum squared resid	6.60E-25
F-statistic	8.81E+30	Durbin-Watson stat	0.802466
Prob(F-statistic)	0.000000		