FOREIGN DIRECT INVESTMENT DETERMINANTS IN PRE AND Deregulated NIGERIAN ECONOMY

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ENUGU CAMPUS

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SUPERVISOR: ASSOC. PROFESSOR J. U. J. ONWUMERE

FEBRUARY, 2013
DECLARATION

Njogo Bibiana Oluchukwu, a postgraduate student in Department of Banking and Finance with Registration number PG/Ph.D/10/55028 declare that this PhD Thesis is original and has not, to the best of my knowledge, been submitted in part or in full for any other Diploma or Degree of this or any other University.

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ASSOC. PROFESSOR J. U. J. ONWUMERE
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DEDICATION

This work is dedicated to GOD ALMIGHTY. He made my creation possible and Has always directed me in all that I do. He made my admission for this program possible. He protected, guided and directed me.
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**NJOGO, BIBIANA OLUCHUKWU**  
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ABSTRACT

Foreign Direct Investment (FDI) plays an extraordinary and growing role in global business by providing firms with new markets and marketing channels for their products. Incidentally, Nigeria has been a recipient of Foreign Direct Investment (FDI) overtime but the major determinants and their impacts in the growth of the economy have not been fully ascertained. This study sought to: (i) examine FDI determinants (market size, exchange rate, inflation rate and degree of openness) in pre-deregulated Nigerian economy from 1970 - 1985, (ii) examine FDI determinants (market size, exchange rate, inflation rate and degree of openness and natural resources) in deregulated economy from 1986 - 2010, (iii) evaluate a causal relationship between the growth of the Nigerian economy and FDI within the pre-deregulated era (1970 - 1985) and (iv) investigate whether a bi-directional relationship exists between growth of the Nigerian economy and FDI within the deregulated era (1986 - 2010). The study adopted the ex-post facto research design. Annual time series data for 41-years were collated from Central Bank of Nigeria, Statistical bulletin, Federal Office of Statistics and World Bank Handbook of Statistics for the period, 1970-2010. Four major hypotheses were formulated and tested and results revealed that three FDI determinants (Exchange Rate, Inflation Rate and Degree of Openness) in a pre-deregulated Nigerian Economy had negative and non-significant impact on Foreign Direct Investment in the Nigerian Economy, while Market Size had a positive and non-significant impact on Foreign Direct Investment (coefficient of Exchange Rate = -0.15, P = 0.16; coefficient of Inflation Rate = -0.13, P = 0.70; coefficient of Degree of Openness = -4.24, P = 0.057, coefficient of Market Size = 0.46, P = 0.10). One FDI determinant (Market Size) in a deregulated Nigerian Economy had positive and significant impact on Foreign Direct Investment in the Nigerian Economy. Inflation Rate had positive and non-significant impact on Foreign Direct Investment in the Nigerian Economy. Two FDI determinants (Exchange Rate, and Degree of Openness) had negative and non-significant impact on Foreign Direct Investment while One determinant (Natural Resources) had positive and non-significant impact on Foreign Direct Investment. The results showed that there was a positive causal relationship between the growth of Nigerian Economy and Foreign Direct Investment (FDI) within the pre-deregulated era (coefficient of correlation = 0.66, P = 0.16). There was bi-directional relationship between growth of the Nigerian Economy and Foreign Direct Investment (FDI) within the deregulated era (F statistic = 3.46 > P = 0.05). The study recommends, among others that government should issue efficient fiscal policies that would intensify the trade liberalization policy which was initiated under the deregulation programme that started in 1986, so as to increase openness in the economy, and improve on the national business environment. Above all, this research has contributed to knowledge by providing vital information and evidence, while employing modified versions of Soumyanada (2009;2010); Yuko and Nauro (2002); Beatrice and Adolf (2004); Rojid et al (2000); Alan and Saul (2004); Omankhanlen (2011) models on the Nigerian situation. It has added to the enrichment of literature on FDI determinants in a developing country- Nigeria.
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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Foreign Direct Investment (FDI) is a direct investment by a corporation in a commercial venture in another country. Mallampally and Sauvant (1999) define FDI as an investment by multinational corporations in foreign countries in order to control assets and manage production activities in those countries. It plays an extraordinary and growing role in global business by providing a firm with new markets and marketing channels for their products. For a host country or the foreign firm which receives the investment, it provides a source of new technologies, capital, process, products, organizational technologies and modern management practices. All of these are presumed to contribute to economic growth and development in an economy. FDI is important not just for the developing countries but also for developed nations.

To this end, Nigerian authorities have been trying to attract FDI through various reforms. Some of the policies that were put in place to attract FDI include; the deregulation of the economy in the 1980s, the New Industrial Policy of 1989, establishment of the Nigerian Investment Promotion Commission (NIPC) in early 1990s, and the late 1990s, the establishment of the Economic and Financial Crimes Commission (EFCC), and the Independent Corrupt Practices Commission (ICPC). The Nigerian Investment Promotion Commission, (NIPC), was established by Decree number 16 of 1995, during the administration of the late General Sani Abacha. It bills itself as 'the one-stop-shop for exploring and planning foreign investment and new business in Nigeria. The Agency's mandate is to facilitate foreign investments and advocate on behalf of foreign investors in the areas of favourable government policies. The Agency helps to create a friendly investment climate so that investors can see Nigeria as an investment haven. In the case of EFCC and ICPC, The two agencies were established to assist in fighting corruption in Nigeria. Corruption has led to loss of confidence in Nigeria by foreigners, Nigerian citizens at home and abroad due to activities of fraudsters, corrupt public officials and misgovernance. Tackling corruption by the two agencies would lead Nigeria into having valuable economic activities and forestalling foreign investment in the country.
However, from the Business, Trade and Investment Guide (2010 / 2011), it is reported that Nigeria receives the largest amount of Foreign Direct Investments (FDIs) in Africa. FDI inflows have been growing enormously over the course of the last decade for example, from USD 1.14 billion in 2001 and USD 2.1 billion in 2004. Nigeria’s FDI reached USD 11 billion in 2009 (UNCTAD 2009), making the country the nineteenth greatest recipient of FDI in the world. Before then, FDI inflows increased from N786.40 million in 1980 to N2, 193.40 million in 1982, but dropped to N1, 423.50 million in 1985. It later rose from N6, 236.70 million in 1988 to N10, 450.00 million and N55, 999.30 million in 1990 and 1995, respectively. However, the value of FDI fell drastically in 1996 and further rose in 1999 in terms of growth rate, FDI inflows dropped from 95.6 percent in 1971 to -31.20 and -17.23 percent in 1976 and 1984, respectively. In 1985, the FDI growth rate started increasing from 2.75 percent to 182.68 percent in 1986 but dropped in 1987 and 1988, further in 1989. Since the year 2000 up till today, FDI growth has remained positive except in 2001 when the growth rate was -70.00 percent, Central Bank of Nigeria (2010).

While Nigeria is regarded as the self-styled giant of Africa, Rotberg (2008) submits that Nigeria is popularly referred to as the sociopolitical giant of Africa due to its position as the most populous country in Africa and the continent’s largest oil producer. It has an estimated population of over 150 million people. Interestingly, the country is the third largest economy in Africa following South Africa and Egypt and has a privileged position as the sixth largest producer and exporter of crude oil in the world, she also has a large abundance of human and material resources, yet failed to attract enough FDI. This is because of the lifestyles of successive regimes in the country. These regimes consistently failed to invest oil money proceeds back into the country, and have also failed to improve existing social systems and infrastructures, poor work ethics, increasing citizen’s dissatisfaction and disaffection with the government. Other reasons why Nigeria have failed to attract FDI in the country includes political structures and politicians attitudes towards development in the country, corporate and large scale organizational irresponsibility, inadequate funding of the education, neglect of health and other key sectors, neglect of the agricultural and other non-oil productive/manufacturing sectors, continued manufacture of poor quality, fake and substandard goods and services, over dependence on imported goods, poorly regulated
capital and financial market, tribal, ethnic and religious squabbles, homelessness, poverty and hunger, poor maintenance culture, poor planning, lack of security and disregard for human life and property, armed and pen robbery, and others. All these factors when properly handled would help in attracting foreign investors in a country.

In trying to correct all these problems in the country, Nigeria stuck to rather hostile policies for private sector development in general and FDI in particular. The policies are geared towards the investment incentives that would revive the economy, accelerate growth and development and reduce poverty. The federal government of Nigeria has developed a package of incentives for various sectors of the economy making efforts to provide an enabling environment that is conducive to the growth and development of industries, inflow of foreign direct investment (FDI), shield existing investments from unfair competition, and stimulate the expansion of domestic production capacity. In Thandika (2001), study, he opines that Policy makers across the region of Africa have hoped that attracting FDI with the bait of high tariff protection and generous incentives packages would provide the catalyst for a ëlate industrializationí drive.

The World Bank Report (2003) reports that Nigerian government's policy of economic deregulation and liberalization has opened up new windows of opportunity to all investors wishing to invest in the country's economy. In this connection, an interest rate regime supportive of the real sector of the economy as well as an exchange rate that is market determined are the object of government policy. The security of life and property of the citizens are being vigorously pursued with the reorganization and strengthening of the Nigerian police force. In addition, the Nigerian investment promotion council (NIPC) has been strengthened to enable it serve as a one-stop office for clearing all the requirements for investment in the country. The tariff structure is being reformed with a view to boosting local production. Government has also introduced a new visa policy to enable genuine foreign investors to procure entry visa to Nigeria within 48 hours of submission of required documentation. The existing "expatriate quota" requirement for foreign nationals working in Nigeria is in the process of being replaced with "work permit" which will be administered by the Nigerian investment promotion council (NIPC).
Nigeria only cautiously and recently in the mid 1980s, embarked on a reform path-but this was characterized by frequent interruption by political shocks and policy reversals.

Asiedu (2002) reports that during the last 15 years, Nigeria has not managed to attract significant amounts of FDI. And this is because of high investment risks in Nigeria. The FDI environment in Nigeria improved after the deregulation which started from 1986, although it is still less accommodating — sometimes hostile-and inadequate to attract high quality, efficiency-seeking FDI. Nigeria’s FDI framework has successfully catapulted the nation to the top of the investment table in sub-Saharan Africa, but the government is committed to bringing in even more investment.

There was an upsurge of FDI, in the 1980, but Nigeria did not take advantage of it, primarily because of micro economic instability, frequent policy reversals, restrictions on some sectors of FDI and on the repatriation of profit and capital. But in 1986, there was considerable amount of FDI inflow into Nigeria, and this was at the time when some of the restrictions were lifted and infrastructure sectors were opened to private participation (the 1986 adjustment program constitute a bold policy response to attracting foreign investors, and to also correct internal and external imbalance).

Asiedu (2004a) notes that FDI determinants in one region may not be the same for other regions. At the same time, the FDI determinants in a country within a region may be different from one another and from one period to another. Looking at the Nigerian economic growth and development, Ekpo and Umoh (2011) notes, that Nigeria has had a truncated history. They grouped the growth and development of the country into four. That is the pro-oil boom decade (1960–70), the period of the oil boom (1971–1977), the period of stabilization and structural adjustment (1986–1993), and the period of guided deregulation (1994–1998).

Ekpo and Umoh (2001) submit that in the period, 1960–70, the Gross Domestic product (GDP) recorded 3.1 percent growth annually. During the oil boom era, roughly 1970–78, GDP grew positively by 6.2 percent annually—a remarkable growth. Then in the 1980s, the
GDP had negative growth rates. In the period, 1988 – 1997, which constitutes the period of structural adjustment and economic liberalization, the GDP responded to economic adjustment policies and grew at a positive rate of 4.0 percent. Also, in the year after independence, industries and manufacturing sectors had positive growth rates except for the period 1980 – 1988 where industry and manufacturing grew negatively by -3.2 percent and -2.0 percent respectively.

The Nigerian economy performed well during the years after independence and into the initial oil boom years but Nigeria did not take advantage of this to lure FDI into the country. It was after the oil boom, that Nigeria started coming up with some policies to stabilize and deregulate the economy to attract FDI. By deregulation, the Nigerian government tries to remove or simplify government rules and regulations that constrain the operation of market forces. It brings about competitiveness when the forces of demand and supply come into play. And at the same time, the prices of the products involved would also be realistic. It may increase the cost of living, and make the cost of transportation high but it creates job opportunities in a country.

1.2 STATEMENT OF THE PROBLEM
Nigeria has been a recipient of Foreign Direct Investment (FDI) overtime but the major determinants and their impacts in the growth of the economy have not been fully ascertained. This is especially when viewed against the backdrop of foreign direct investment in the country. At the same time even when regarded as a major recipient in Africa, Nigeria is still gambling with mass poverty, very weak manufacturing sector, real sector under development, still a mono culture country and over dependent on oil sector.

The Foreign Direct Investment in Nigeria has not really translated to the growth of the economy and this raises questions as to the key determinants during different ethos notably the pre and post deregulated economy in the Nigerian history. The issue becomes whether the appropriate measures to really attract foreign direct investment are being followed in the country.
It is a known fact that Nigeria is the most populous country in Africa with a population of over 150 million people and also with a GDP that is second only to South Africa’s. Yet, following the period of independence in 1960 to the years of military rules, there were poor economic management of Nigerian resources; also during that time, Nigeria experienced a prolonged period of economic stagnation, rising poverty levels and the decline of its public institutions. Ngozi, and Philip,(2007) reported that the Nigeria’s economic performance in the two decades prior to economic reforms was generally poor. Over the period, 1992 to 2002, the annual GDP had average of about 2.25 percent with an estimated population growth of 2.80 per annum. This implies a contraction in per capital GDP over the years that had resulted in a deterioration of living standards for most citizens. An inflation level which is one of the determinants of FDI inflows were, averaging about 28.94 percent per annum over the same period. Human development is also one of the determinants of FDI inflows, by 1999; most of Nigeria’s human development indicators were worse than, or comparable to that of any other least developed country.

A major challenge for the Nigerian economy was its macroeconomic volatility driven largely by external terms of trade shocks and the country’s large reliance on oil export earnings. According to World Bank report (2003) by some measures, Nigerian economy ranked among the most volatile in the world for the period, of 1960 to 2000. Though, FDI is accepted to be a stimulant to economic growth, most of the empirical research that has been undertaken in this area has used panel data for a number of countries to establish the causal relationships. In the aspect of FDI determinants, the results of studies carried out on the linkage between FDI determinants in a country are not unanimous in their submissions.

The results submitted by some researchers in this field of FDI determinants and the impact of FDI determinants in the Nigerian economy are still not clear. Ekpo (1997), examined the relationship between FDI and some macro economic variables for the period 1970-1994 and discovered that political regime, real income per capita, rate of inflation, world interest rate, credit rating, and debt service explained the variance of FDI inflows to Nigeria. Adutse, (2008) submits that the growth and development of Africa and indeed Nigeria’s economy depends largely on foreign direct investment (FDI) which has been described as the major
carrier for transfer of new scientific knowledge and related technological innovation. During the pre-deregulated era, Nigeria witnessed a lot of tight policies which restricted FDI inflows into the country. But in the era of deregulation, Nigeria witnessed a lot of changes in the economy especially in aspect of infrastructure, financial system, privatization and liberalization of the oil sector and some other sectors of the economy. These necessitated the inflow of FDI in the country. Since 1986, when deregulation started, foreign direct investment in Nigeria has been on the increase therefore making Nigeria the nineteenth greatest recipient of FDI in the world, UNCTAD, (2009)

1.3 OBJECTIVES OF THE STUDY
The Objectives of the study include:

i. To determine the causal factors of Foreign Direct Investment in a pre-deregulated Nigerian economy,

ii. To determine the causal factors of Foreign Direct Investment in a deregulated Nigerian economy,

iii. To ascertain whether there is a causal relationship between the growth of the Nigerian economy and FDI within the pre deregulated era, and

iv. To determine whether there was bi directional causal relationship between growth in the Nigerian economy and Foreign Direct Investment within the deregulated era.

1.4 RESEARCH QUESTIONS
Our research questions derive from the objectives of the study include:

i. What factors determined foreign direct investment in pre deregulated Nigerian economy and to what extent?

ii. Were there factors that determine foreign direct investment in deregulated Nigerian economy and to what extent?

iii. To what extent was there a causal relationship between growth of the economy and foreign direct investment (FDI) within the pre deregulated era?

iv. To what extent was there a bi directional causal relationship between growth of the economy and foreign direct investment (FDI) within the deregulated era?
1.5 RESEARCH HYPOTHESES

The hypotheses of this study are:

i. Causal factors (Market size, Exchange rate, Inflation rate, Openness, Natural resources) are not foreign direct investment (FDI) determinants in a pre-deregulated Nigerian Economy.

ii. Causal factors (Market size, Exchange rate, Inflation Rate, Openness, Natural resources) are not foreign direct investment (FDI) determinants in deregulated Nigerian economy.

iii. There is no causal relationship between the growth of Nigerian Economy and foreign direct investment (FDI) within the pre deregulation era.

iv. There is no bi-directional relationship between growth of the Nigerian economy and foreign direct investment (FDI) within the deregulated era.

These Hypotheses follow largely from the works of (Soumyanada (2009; 2010); Yuko and Nauro (2002); Beatrice and Adolf (2004); Rojid et al (2005); Ben- Taber and Giorgioni (2007); Alan and Saul (2004); Omankhanlen, (2011); Asiedu, (2002, 2006); Olajide, (2010); Obida and Abu, (2010); Anyanwu, (1998); Iyoha (2001); LVNa and Lghtfoot (2006); Isabel (2005); Ewe-Gylee (2001); fungi, lizaka, Lee and Parker (2000); Shatz and Variables, (2000); Khondoker, A.M. (2007; Mehmet, (2002); Fuat and Ekrem, (2002) from which models are specified and improved upon in chapter three of my work.

1.6 SCOPE OF THE STUDY

For the purpose of our study, the Nigerian economy is grouped into two: the FDI determinants in pre (1970 ï 1985) and the deregulated Nigerian Economy (1986 ï 2010). This study covered the periods, 1970-1985 and 1986-2010. These periods were chosen because they were the periods of pre and deregulation in the Nigerian economy. The pre deregulation in the economy was the period when prices of many products were fixed by executive fiat and were driven by related policies. For instance, the exchange rate regime in place was driven by the fixed exchange rate policy. Credit disbursements by banks were driven by credit ceilings along sectoral lines and determined by the central Bank of Nigeria, among other regulation driven policies of government. During this era Nigeria depended on
import not only for equipments and machineries but also for intermediate goods and raw materials including food. It was age of prohibitions in which the economy was almost being choked to death by innumerable regulations. During this period, FDI in Nigeria was relatively low.

The deregulation era started in 1986 driven by the structural Adjustment Programme (SAP), which marked the beginning of economic deregulation and lingering period of liberalization with the objectives of

- Restructuring and diversifying the economic base of the economy and reducing the dependency on oil
- Achieving fiscal balance and reducing the deficit in the balance of payment in the medium term.
- Laying the foundation for non-inflationary growth in the medium and long term. This is also the period of official change in policy direction towards FDI in the country. (See Structural Adjustment Programme Document)

The thrust of the measures for deregulation was to promote competition and efficiency through greater reliance on market forces. During this period of post deregulation, import licensing was abolished. There was partial removal of exchange control, reduction of government borrowings and strengthening of the use of treasury bills as an effective tool of monetary control.

1.7 SIGNIFICANCE OF THE STUDY

The results from this study will allow a re-appraisal of the competing theories of FDI determinants in a country. This study is one of the most important topics, not only in developing countries that need presence of FDI like Nigeria but globally as testified by the number of papers, books and international conferences on this subject that have taken place over the last few years. Also, the subject matter is very important to the Nigerian government now that it has big challenge of reshaping the economy.
The question of the FDI determinants in the pre and post deregulated Nigerian economy is fundamental in the heart of government especially in its quest of attracting foreign investors to come in and invest. It is anticipated therefore, that this study would be a great deal of interest to the following;

- Investors,
- The government,
- The academics,
- The policy makers,
- Researchers,
- The general public and
- Also add to the literature by providing new study evidence on Foreign Direct Investment determinants in the Nigerian economy.

**Investors:** This study is vital for investors in the sense that it would provide information on the determinants of FDI in Nigeria and would also help them to analyze every aspect of their targeted investments in the country.

**Government:** This study plays an important role in shaping, designing and implementing fiscal policies and at the same time would help the government to think about new and better ways of doing things and provides new understandings and discoveries that benefit our society.

**Academics:** This study would impact knowledge to academics in the area of FDI and its determinants in Nigeria.

**Policy makers:** The study would help the policy makers in the country to better plan and address issues and come up with solutions.

**Researchers:** This study would enable the researchers to investigate and understand trends and relationships of variables involved in this study and probably build on it in their studies on FDI determinants.
**General Public:** This study would help to educate the public, help them become more aware of what actually attracts investment in Nigeria.

This study is also different from previous studies in scope in terms of coverage. Therefore, it contributes to the literature by examining the relationship between FDI determinants in the Nigerian economy.

**1.8 OPERATIONAL DEFINITION OF TERMS**

**Recipient Country:** This is a country which receives FDI from foreign investor in a recipient country.

**Host Country:** This is a nation in which representatives or organizations of another state are present because of government invitation and or international agreement.

**Fiscal Balance:** This refers to the amount of money government has from tax revenue and the proceed of assets sold, minus any government spending when the balance is negative. The government has a fiscal deficit when the balance is positive and negative when government has a fiscal surplus.

**Trade barriers:** This is government-induced restrictions on international trade. The barriers can take many forms, including the following: Tariffs, Non-tariff barriers to trade, Import licenses, Export licenses, Import quotas, Subsidies, Voluntary Export Restraints, Local content requirements, Embargo.

**Tariff:** A tariff may be either tax on imports or exports (trade tariff), or a list or schedule of prices for such things as rail service, bus routes, and electrical usage (electrical tariff, etc.).

**Resource seeking FDI:** This is investment focused on extracting or refining natural resources such as petroleum, natural gas, or timber. The investment is seeking access to existing resources, such as Exxon Mobil investing in oil production in the North Sea.
**Nigerian Economy:** The Nigerian economy is one of the most developed economies in Africa. It is a middle-income nation with developed financial, communication and transport sectors. It has the second largest stock exchange in the continent. The petroleum industry is central to the Nigerian economic profile. It is the 12th largest producer of petroleum products in the world. The industry accounts for almost 80% of the GDP share and above 90% of the total exports.

**Natural resources:** These are factors of production that are not man made; they include land, water, air and all the minerals that they contain.

**Exchange Rate:** In finance, an exchange rate (also known as the foreign-exchange rate, forex rate or FX rate) is the rate at which a country’s currency is exchanged for another country’s currency.

**Investment incentives:** These are government schemes aimed at stimulating private sector interest in specified types of capital expenditure, or investment in areas of high unemployment or backwardness. These incentives may take the form of direct subsidies (investment grants) or corporate income tax credits (investment credit) that compensates the investors for their capital costs.

**Inward FDI for an economy:** This can be defined as the capital provided from a foreign direct investor (i.e. the coca cola company) residing in a country, to that economy, which is residing in another country. (i.e. Nigeria’s economy).

**Privatization:** This is a process of selling a public corporation to private shareholders.

**Liberalization:** This refers to the relaxation of previous government restriction, usually in areas of social or economic policy.
**Emerging markets**: This refers to nations with social or business activity in the process of rapid growth and industrialization.

**FDI determinants**: These are causal elements of factors that influence FDI.

**Nigerian Investment Promotion Commission (NIPC)**: This is a Federal Government Agency in Nigeria established to encourage, promote, and coordinate investments in Nigeria. The Agency provides services for the grant of business entry permits, licenses, authorizations and incentives in a One-Stop-Shop and transparent manner to meet the needs of investors.

**SAP**: Structural Adjustment Programmes are economic policies which countries must follow in order to qualify for new world bank and international monetary fund (IMF) Loan that helps then make debt repayment on the older debts owed to commercial banks, government and the world bank. Although SAPs are designed for individual countries but have common guiding principles and features which include export led growth, privatization and liberalization and the efficiency of the market.
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CHAPTER TWO
REVIEW OF RELATED LITERATURE
2.1. MEANING AND THEORIES OF FOREIGN DIRECT INVESTMENT DETERMINANTS.

2.1.1: MEANING OF FOREIGN DIRECT INVESTMENT
Foreign Direct Investment is an investment that involves the injection of foreign funds into an enterprise that operates in a different country of origin from the investor. FDI has further been explained as the long term investment reflecting a lasting interest and control by a foreign direct investor or parent enterprise of an enterprise entity resident in an economy other than that of the foreign investor (International Monetary Fund, 1999). As FDI flows grew in volume and complexity in the 1990s and early 2000s, three new players appeared on the global stage: They are: sovereign wealth funds (SWFs), which were government-controlled entities with the authority to take significant equity stakes in foreign firms; private equity (PE) firms, which resorted increasingly to cross-border acquisitions, and emerging-market multinational enterprises (EMNEs), which ratcheted up their overseas acquisitions and investments.

2.1.2: THEORIES OF FOREIGN DIRECT INVESTMENT DETERMINANTS.
A number of theories have been developed to explain the level and pattern of FDI and these theories are grouped into three schools namely: the dependency schools the modernization schools and the integrative schools.

THE DEPENDENCY SCHOOL
The dependency school, which flourished between the 1960s and 1980s, seeks to achieve more equal wealth, income, and power distributions through self-reliant and collective action of developing nations. Two sets of theories within the dependency school have emerged to explain the causes of underdevelopment and dependency and they are the dependencia / neo-Marxist subschool on the one hand and the structuralist subschool on the other. Dependency theories see the cause of underdevelopment primarily in exploitation by the industrialized nations. The dependency school's major contribution to the FDI field is its focus on the consequences of foreign direct investment in developing countries and its...
critical analysis of Western development paradigms that regard FDI as unequivocally positive. The original dependencia or neo-Marxist subschool states that developing countries are exploited either through international trade which leads to deteriorating terms of trade (an unequal exchange in Marxist terms), or through multinational corporations transferring profits out of developing economies.

The structuralist subschool posits that international centers (industrialized countries) and domestic centers (national capital) extract resources from the peripheries, namely the poor countries or local countryside. This theory does not criticize capitalism outright but rather points out that the peripheries do not gain from capitalism as much as the center does. According to this view, modernization, capitalization, and industrialization are limited to the export sector, causing other economic sectors to deliver according to export needs without reaping the benefits.

THE MODERNIZATION SCHOOL

The modernization school is reflected in the perfect market approach as represented by the neoclassical and other perfect market theories; its imperfect market approach is embodied in industrial organization theory as well as in the theory of the firm and internalization theory. According to the neoclassical approach, interest rate differentials are the main reason for a firm to become a multinational company. In this line of arguments, capital moves from a country where return on capital is low to a place where return on capital is high. This approach is based on perfect competition and capital movement that is free of risk assumptions (Harrison, et al; 2000). The portfolio approach to FDI reacted to this early theory of FDI by emphasizing not only return differentials but also risk (Almayehu, 1999).

The modernization school was developed before the dependency school, and it remains widely influential to the present day. Modernization theorists proclaim that there is a natural order through which countries ascend to what is seen as higher developmental stages. The theorists recommend that developing countries follow in the footsteps of developed countries and overcome endogenous barriers to exogenously motivated development through industrialization, liberalization, and opening up the economy. The ability to
overcome these barriers will depend on how endowed the country is with production factors such as labor, capital, and natural resources.

The modernization school views FDI as a prerequisite and catalyst for sustainable growth and development. For FDI to fulfill its crucial role, economies have to be freed from distorting state interventions and opened to foreign investment and trade. This stance is reflected in the big bang theories (postulating immediate, all-encompassing privatization in Eastern Europe) and structural adjustment norms (transforming economic and political structures to overcome poverty in Latin America and Africa)

THE INTEGRATIVE SCHOOL

The integrative school is represented by the eclectic foreign direct investment paradigm, negotiation theory, and integrative theory. This integrative school attempts to transform categorical thinking on FDI by analyzing it from the perspectives of host countries as well as investors. It integrates those dependency and modernization concepts that are applicable to current FDI analysis. Accordingly, integrative theories account for the multiplicity of heterogeneous variables involved in the FDI process. An integrative FDI theory considers macro-, micro, and meso-economic variables that determine FDI. The macro-level envelops the entire economy, the micro-level denotes firms, and the meso-level represents institutions linking the two, for example government agencies issuing investment policy to enterprises.

What distinguishes integrative FDI theory from its predecessors is that it accords more importance than previous theories to the meso-level, the sphere where macro- and micro-variables meet, and public and private sectors interact. It is in this arena that public policies are established and implemented. Thus, the meso-level is pivotal to the successful implementation of public policies. It is at the meso-level where day-to-day challenges in FDI policy implementation occur and structural rigidities are revealed. Structural rigidities may be expressed in phenomena such as corruption that can be ameliorated through measures such as appropriate training and pay for public servants. Despite its importance, the meso-level, has not received the attention it deserves because theorists are not always aware of the daily challenges that developing countries encounter in implementing economic
and investment reforms. At the same time, policy-makers often hesitate to speak out due to local sensibilities. The present study is rooted in the integrative school.

Other theories includes the eclectic theory of FDI, the internalization theories of FDI, and The Product Life Cycle Theory of FDI

**The Eclectic Theory of FDI**

This theory was developed by John Dunning which is called OLI paradigm. O, L and I refers to ownership advantage, location advantage and internalization conditions, respectively. Operating in a foreign country market has many costs and these costs include failure of knowledge about local market conditions, cultural, legal and many other costs. Therefore, foreign firms should have some advantages that can offset these costs. Ownership advantage is a firm specific advantage that gives power to firms over their competitors. This includes advantage in technology, in management techniques, easy access to finance, economies of scale and capacity to coordinate activities. Location advantages are country specific advantages. Transnational Companies (TNCs) in order to fully reap the benefit of firm specific advantages, they should consider the location advantage of the host country. This includes accessibility and low cost of natural resource, adequate infrastructure, political and macroeconomic stability. As a consequence, the location advantage of the host country is one essential factor that determines the investment decision of TNCs. Internalization is multinational companies ability to internalize some activities to protect their exclusive right on tangible and intangible assets, and defend their competitive advantage from rival firms. All these three conditions must be met before transnational companies open a subsidiary in a foreign country (Soderstein (1992), Laar(2004)).

**Internalization Theory of FDI**

Some transactions are internalized to reduce transaction costs and hence increase profitability. This theory answers the question why production is carried out by the same firm in different locations. One of the reasons of internalization is market imperfection. Market imperfection is anything that interferes with trade. This includes two dimensions of imperfections. First, imperfections cause a rational market participant to deviate from
holding the market portfolio. Second, imperfections cause a rational market participant to deviate from his preferred risk level. Market imperfections generate costs which interfere with trades that rational individuals make (or would make in the absence of the imperfection). Marketing and pricing are what operates here. The difficulty of marketing and pricing know how forces multinational companies to open a subsidiary in a foreign country instead of selling the technology. In addition, a number of problems may arise if an output of a firm is an input to other firm in other country. For instance, if each has a monopoly position, they may get into a conflict as the buyer of the input tries to hold the price down while the firm that produces input tries to raise it. Nevertheless, these problems can be avoided by integrating various activities within a firm rather than subcontracting the activities (Krugman and Obstfeld, 2003).

**The Product Life Cycle Theory of FDI**

This theory was first developed by Vernon in 1966. The Vernon’s product life cycle theory is a dynamic theory because it deals with changes overtime. However, it seems that the theory is not confirmed by empirical evidence, as some multinational companies start their operations at home and abroad simultaneously (Chen, 1983). As the demand for a product in a home market increases, the product is standardized. Once the home market is saturated, the product will be exported to other countries. After some time, the firm starts to open subsidiaries in locations where cost of production is lower, when the competition from the rival firms intense and the product reaches its maturity, it automatically increases competition. Dunning, (1993) opines that FDI is a stage in the product lifecycle that follows the maturity stage.

The literature on the FDI determinants in an economy is vast in developed and developing economies. Most of the empirical works on this topic have focused on panel data estimation approach. It has been observed that FDI plays an important trole to the economic development in an economy, but the fact remains that FDI mostly flows towards the developed countries Khondoker, (2007). This signifies that most developing countries fail to attract a handful of FDIs because of lack of large size of their GDPs and high GDP growth rates, better physical infrastructure and business environment. This is a general assumption
of most researchers as even Fuat and Ekrem 2002 have added that the lack of exchange rate and economic stability also hindered efforts to harbor much volume of FDI. Countries seek for FDI because of its innumerable efforts in the economy. First, it influences the production, employment income, price, exports, imports, economic growth, balance of payments and general welfare of the recipient country. It is also probably one of the most significant factors leading to the globalization of international economy. FDI flows into a country, contributes to building strong economic links between industrialized countries and developing countries. It has been observed that the amount of FDI flowing to developing countries increased remarkably in the 1990s and accounts for about 40% of global FDI. This substantial surge in inward FDI flows to developing countries has been largely due to a rapid pace of liberalization movements in these countries (Fuat and Ekem, 2002).

Most Countries, especially the emerging markets strive to attract foreign Direct Investments (FDI) because of its potential positive impact to economic development and integration into the world economy. Nigeria remains under researched on the subject of FDI determinants, and this study provides an in-depth study of FDI determinants in a pre and post deregulated era in Nigeria.

Nigeria has been known to be the biggest recipients of FDI inflows in Africa; theoretically, it has failed to unleash its FDI potential largely for self-inflicted reasons. The country has failed to make progress in attracting FDI despite its immense human and natural resources. The FDI environment in Nigeria has improved, at least relative to the situation in the pre deregulated era (1970 ñ 1985) when there were a lot of regulations and policies on ground. Morisset, (2000) concludes that a better business environment tends to compensate for the lack of natural resources and large domestic markets. Although it is still less accommodating, sometimes hostile and inadequate to attracts high quality, efficiency-seeking FDI in the country at the moment because of insecurity, inadequate infrastructure, corruption, and inconsistent regulations. All deficiencies remain the key elements for the country’s future prospect of attracting more efficiency-seeking FDI.
Empirically and realistically, there has not been a consensus on all the important determinants of FDI in the empirical literature. This is because of different types of FDI inflows in a country which is affected by different factors. The lack of consensus also has to do with the difficulty of getting accurate data (particularly for developing countries) on some of the determinants, such as labour costs and labour quality, investment/regulatory climate degree of openness and natural resources. Beatrice and Adolf (2004) note that natural resources endowments are an important determinant of FDI inflows. At the same time, determinants of FDI in developed and developing countries cannot be grouped together given different economic conditions. There are a few studies that concentrate on region and yet very few on the Nigerian economy. According to the proponents of foreign direct investment, the higher amount of foreign investment a country attracts, the bigger the portion it can take from global production and income, therefore, its national wealth increases (Potdar, and Guraks, 2003). FDI helps in integrating developing economies into the global market and raising capital for investment. FDI serves as an important engine for growth in developing countries through two modes of action. First is through investment made directly as technological support and the establishment of new factories. Borenzstein, De Gregorio, and Lee (1995) in their study, found out that while FDI is an important vehicle for the transfer of technology and a positive contributor to economic growth, its impact is greater than the level of human capital stock in the host economy. Also, UNCTAD, (2005) states that promoting and facilitating technology transfer through foreign direct investment (FDI) has assumed a prominent place in the strategies of economic revival and growth being advocated by policy makers at the national, regional and international levels because it is considered to be the key to bridging the technology and resource gap of developing countries and avoiding further build up of debt.

Second is through investments (excepts for foreign direct investments) made through passive holdings of securities such as foreign stocks, bonds, or other financial assets in a foreign country with a purpose of gaining the highest earnings. In the case of investment in a host country through passive holdings Mwilima (2003) describes FDI as investment made to acquire at least 10% of equity share in an enterprise operating in a country other than the home country of the investor. FDI inflow to West Africa is mainly dominated by inflow to
Nigeria (UNCTAD world investment Report 2006). It also reported that Nigeria’s oil sectors alone receive 90% of the FDI inflow. Kolawole and Henry (2010), notes that the bulk of FDI inflow into the country goes to the oil sector of the economy. The recent improved performance in FDI inflow to Nigeria among others calls for the need to investigate its FDI determinants in the economy.

Beyond Nigeria as a country, Asiedu (2002) submits that worldwide, the foreign direct investment (FDI) is increasing at an extraordinary speed in the 21st century, which begins making Africa different. Also UNCTAD (2007) reports that FDI flows to Africa have been on the increase since 2000.

The recent surge of FDI inflows to Africa during the period 2000-2010, is backed up by positive business environment in the region. This positive business environment is backed up by reforms framework for FDI. Many Africa countries have reform their economic policies, investment laws and also improving financial system. The natural resources and the markets size still remain the common perception that drives FDI inflows into an economy. This perception is also consistent with the UNCTAD (2009) data which show that three largest recipients of FDI namely South Africa, Nigeria and Angola- all are natural resources rich nations. Nigeria is one of the countries in West African richly endowed with natural resources mainly oil and gas, mineral deposit, and vegetations.

The increasingly significant role of FDI in the growth dynamics of country has spurred volume of empirical studies on both developed and developing countries. At the economy-wide level, recent empirical work has also generally tended to find a positive correlation between FDI and economic growth. Taking china as an example, China has some features of Nigeria in terms of market size, natural resources etc. Dees, (1998) in his study, found out that FDI has been important in explaining China’s Economic growth. At the same time, Bloomstrom, lipsy and Zejan (1994) in their study found out that FDI has a significant positive influence on growth rates but the influence seems to be confirmed to higher-income developing Countries.
In Nigeria, after gaining political independence in the 1960s Nigeria was skeptical about the virtues of free trade and investment. Consequently, in the 1970s and 1980s, Nigeria imposed trade restriction and capital controls as part of a policy of import substitution industrialization aimed at protecting domestic industries and conserving scarce foreign exchange reserves. This substantial evidence at inward-looking development strategy discouraged trade as well as foreign Direct Investment (FDI) in Nigeria during the 1970 to 1985. (The pre-deregulation era). Rodrick, (1988) confirmed that this inward-looking development strategy had deleterious effects on economic growth and living conditions in the region. Djankov and Murrel (2002) argued that FDI can accelerate the transition process by forming a basis for more effective corporate governance and by promoting enterprise restructuring, which is crucial to the transition process. The disappointing economic performance of Nigeria in the pre deregulated era, coupled with the globalization of activities in the world economy, led to a regime shift in favour of outward-looking development strategy in the post era which started in 1986 until today. Since then globalization has increased competition for FDI in Nigeria and again, Nigeria is seen as preferred destination for investment in Africa among foreign investors and it is increasingly being recognized that actions by Africa countries would have to be complemented by efforts at the regional and international levels in order to improve the prospects for FDI flows to the region (CCFA, 2003).

In Nigeria at the moment, little has changed since the post deregulation in attracting FDI. It is only the traditional market-related determinants that are still the dominants factors. Among non-traditional FDI determinants, only the availability of local skills has clearly gained importance. Nunnenen Kamp (2002) in his empirical study notes that there is a startling gap between allegedly, globalization induced changes in international competition for foreign direct investment (FDI) and recent empirical evidence on the relative importance of determinants of FDI in developing countries. Most of the previous influential studies on FDI determinants are multi-country studies. However recent evidence on the topic shows that FDI determinants rely on a combination of factors that differs from one region to another and from one country to another. In the same vein, it differs from one period to another.
In recent years, a flurry of studies has emerged seeking explanation for why Sub-Saharan Africa has been relatively unsuccessfully in attracting FDI (Collier and Gunning, 1999; Morisset, 2000; Collier and Patillo, 2000; Bhattacharaya et al, 1996; Jenkins and Thomas, 2002). The conclusion of their studies is the same in spite of their methodologically differences.

2.2. MAIN DETERMINANTS OF FDIs

Foreign Direct Investment determinants have been discussed in a widely read literature. Foreign Direct Investment is classified into two types: market oriented and export-oriented FDIs. And in these two categories, there are a lot of factors that determine the inflow of FDI into a particular country. These factors can be classified into micro determinants and macro determinants. Krugell (2005) and Wang& Swain (1997) have explained the micro-determinants of FDI as FDI that are mainly concerned with those location specific factors that have an impact on the profitability of FDI at firm’s or industry level. The host country characteristics that influence productivity and cost at this micro level include market size and growth, labour costs, tariffs, host government policies and trade barriers. The macro-determinants of FDI are the factors that influence profitability and the choice to invest at an economy-wide level (Krugell, 2005). These are the size and growth of the host market, exchange rates and political stability. These factors are referred to as export oriented in nature and it looks at cost competitiveness. Holland et al (2000) reviewed several studies on determinants of FDI and produced evidence of the importance of market size and growth potential as determinants of FDI. Below are the factors that determine the FDI inflows into a country. This is based on the micro and macro-determinants discussed above and other factors discussed individually on the FDI determination in an economy. There are also some factors in common for both types of FDI. Nigeria is thought to have all these characteristics:

- Market size and growth of the Nigerian Economy
- Natural and human resources endowments—cost and productivity of labour
- Openness to international trade and access to international markets
- Development of the regulatory framework and economic policy coherence.
- Inflation Rate
- Exchange Rate
First, market size and growth has been said to have positive effect on FDI because it directly affects the expected revenue of the investment (Sun et al., 2002), thus it is one of the important determinants that have been used in empirical studies to explain the inflow of FDI to a host country. It has been observed that host countries with larger market size, faster economic growth and higher degree of economic development will provide more and better opportunities for these industries to exploit their ownership advantages and therefore, will attract more market-oriented FDI.

Nigeria is the most populous country in Africa with a population of over 150 million. The annual percentage in the population resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving a country. Wheeler and Moody (1992) in their study indicated that a large market size of a region has a significant and positive effect on attracting FDI. FDIs are likely to be attracted by large market size which allows them to internalize profits from sales within the host countries. FDI in some selected countries like Hong Kong, Macao, Taiwan, Singapore and other Asian countries are included by market size, (Zhao and Zhu, 2002).

Second Natural and Human Resource Endowments
Nigeria has rich resources of labour with average salaries of workers remaining at a relatively low level. With Nigeria's large population, automatically translating to market, skilled manpower, abundant natural resources and a surfeit of entrepreneurial spirit, which are the basics differentiating Nigeria from many other markets in Africa, investors can achieve a whole lot, Corporate Nigeria (2010/2011). It is often argued that the labour cost in determining FDI inflows should be the efficiency wage rate, which is adjusted in line with productivity rather than the absolute wage especially if FDI is export-oriented. In terms of the efficiency wage rate, Nigeria has good advantage as confirmed by empirical research. In terms of oil, Nigeria is rich but in energy (power) Nigeria is experiencing shortage problem. Other major natural resources such as land, iron, coal and other minerals are economically valuable.
available. In respect to Nigeria’s natural and human resource endowment, it has been observed empirically that with the globalisation of the world economy and liberalisation of international trade and the giant stride in technological innovation, the advantage of a cheap labour force has become less important for investors. On the other hand, cheap labour has been said to be one of the determinants of FDI inflow into a country especially in the South East Asian economies (Young 2000; and Majumdar 1980; Tsai, 1995). At the same time, on the other hand, several researchers have also found negative correlation between labour cost and FDI (Sun, et.al; 2002). The quality of human resources endowments is what is required for FDIs inflow in the country.

Third, openness to international trade and access to international markets. Chakrabarti (2001) defines openness to trade as intensity which refers to the ease with which capital can be moved in or out of a country by investors. Since economic liberalization in 1995, Nigeria has had one of the most open regimes in Africa for foreign investors, The Business Trade and Investment Guide (2010). Openness to international trade induces FDIs inflow but at the same time, may have negative influence on domestic industry in terms of competition.

Fourth, Development of the regulatory framework and economic policy coherence. Nigeria has been working hard to improve its reputation abroad, and it has made substantial progress in addressing the issues that have worried outside investors in the past. They have also formulated and implemented a series of preferential policies to encourage international trade. These policies range from restoring the rule of law, and challenging corruption and gratification. Also on ground at the moment is the issue of security. The present government is working hard to handle this with the help of the international community. In 1995, the Nigeria investment promotion commission Act laid out the framework for Nigeria’s investment policy under the act, 100% foreign ownership is allowed in all industries except for oil and gas, where investment is constrained to existing joint ventures or new production-sharing agreements investment from both Nigeria and foreign investors is prohibited in a few industries crucial to national security, the production of arms and ammunition and military uniforms. Investors can repatriate 100% of profit and dividend. The Act set up the Nigeria Investment promotion commission (NIPC) to facilitate and promote investment in
Nigeria. In March, 2006, the NIPC set up on one stop investment centre (OSIC) on its premises in Abuja. OSIC brings together agencies with mandates relating to investment in order to streamline the process of investing in the country.

Fifth, Inflation Rate: Asiedu (2002) notes that the inflation rate is used as a measure of overall macroeconomic stability of a country. A low inflation rate serves as FDI determinants in a country while a high inflation rate can serve as a disincentive on FDI to a country as it increases the user's costs of capital. Inflation reduces private investment by increasing risk, reducing average lending maturities, distorting the informational content of relation prices, and indicating macroeconomic instability (Dornbusch and Reynoso, 1989; Oshikoya, 1994). In Nigeria, the inflation rate is high. This is one of the measures of FDI determinants in a country. Schneider and frey (1995) submit that inflation is frequently used as an indicator of macro economic instability reflecting the presence of internal economic tension and of the inability or unwillingness of the government and central bank to balance the budget and to restrict the money supply.
Sixth, Exchange Rate: Several studies report the effects of changes in the real exchange rate and the terms of trade on investment. These studies generally find that the variability of the real exchange rate is usually more of a disincentive for investment than is the level (Serven and Solimano, 1993; Faruqee 1992)

Source: CIA World Bank Fact book
Seventh, Infrastructure: previous empirical studies have generally focused on the role of host country infrastructures in influencing the FDI inflows. According to Head, (2000), in his study, he demonstrated that FDI inflows is attracted to regions with high levels of final demand for the output, but also to region with high densities of manufacturing activities and extensive transportation infrastructure. Nigeria infrastructure is still not on the high side. There has been tremendous change in the transportation sector. Coughlin, Terza and Arromdee (1991) in their study found out that transportation infrastructure have a positive and significant impact on the location decision of FDI in US. The availability of adequate infrastructure represents the ease of operations in a location for foreign investors and allows foreign investors to move their production materials and products more easily to designated areas. Infrastructure has low productivity levels and the low return to private investment discourages both domestic and foreign investors. Infrastructure ranges from highways and railroads, telecommunication system to institutional development. Deteriorating infrastructural facility, in particular in the area of telecommunication, transport and power
supply, severely hamper the attraction of FDI in labour intensive industries. Anas and Lee, (1996); Jerome, (1999); Ariyo and Jerome (2004) note in their studies that the poor performance of publicly provided infrastructure services in Nigeria has been a subject of considerable discussion. Since the oil boom years of the 1970s, provision of reliable and efficient electricity, telephone, water and transport services has remained elusive in the Nigerian economy. In recent years, the problems in the sector have reached crisis proportion as the collapse of electricity system become prominent and power supply has become increasingly erratic. In recent years, there have been positive developments especially in the telecommunication sector where Nigerians has emerged as the fastest growing mobile market in the world.

Eighth, Investment Incentives: Investment incentives in form of cheaper land cost or lower tax rate are also FDI determinants in a country. FDI inflow in countries with investment incentives could enable investors to achieve low operation cost and high efficiency. In the case of taxation, (Friendman, et. al., 1992; Loree & Guisinger, 1995) in their empirical studies, found out that the rate of corporate taxation as investment incentives has a negative effect on investment decision. Empirically, studies on tax rates have shown lack of consensus on determining factor of FDI inflows. This is because the local government in some countries often implements a variety of investment promotions, such as tax concessions, subsidies, waiving environmental or employment safety standards and relaxing some sort of performance requirements. And again, investment attractions programmes are usually an ongoing effort involving various promotional activities. Also measure of FDI varies from study to study. Hence investment incentives are expected to positively relate to FDI determinants in a country.

2.3. THEORETICAL AND EMPIRICAL ISSUES ON FOREIGN DIRECT INVESTMENT DETERMINANTS

There are several studies that have articulated theoretically and empirically foreign direct investment determinants in a country but very few studies on foreign direct investment determinants in Nigerian economy. Moreover, most theoretical studies in the
literature of FDI location only focused on this issue in the developed countries such as the United States and countries from European Union (EU) (Bartik, 1985; Coughlin, Terza and Arromdee, 1991; Friedman, Gerlowski & Silberman, 1992). Less is understood about the determinants that drive FDI into emerging economies, such as Nigeria, China and Hundai (Batra, 1997; Child & Tse, 2001 and Asiedu, 2002).

Dunning (1981), in his study, argued that foreign direct investment (FDI) is determined by three sets of advantages which direct investment should have both at home and abroad. The first advantage is the ownership, specific one includes the advantage that the firm has over its rivals in terms of its brand name, patent or knowledge of technology, and marketing. This allows firms to compete with the other firms in the markets it serves regardless of the disadvantages of being foreign. The second is the internationalization advantage, that is advantages by own production rather than producing through a partnership arrangement such as licensing or a joint venture. The third and final one is the location-specific advantages which relate to the importance for the firm to operate and invest in the host country and are those advantages that make the chosen foreign country a more attractive site for FDI than the others. For example, firms may invest in production facilities in foreign markets because transportation costs are too high to serve these markets through exports.

Ekpo (1997), in his study on determinants of foreign direct investment in Nigeria examined the relationship between FDI and some macroeconomic variables. The results showed that the political regime, real income per capita, rate of inflation, world interest rate, credit rating, and debt service explained the variance of FDI inflows to Nigeria.

An empirical analysis of the relationship between foreign direct investment and its determinants reveals that the markets size of the host country, deregulation, political instability and exchange rate depreciation, endowment of natural resources and inflation are significant determinants of FDI to Nigeria. Most of the authors, found market size to be positive and significant in attracting FDI among other variables (((Soumyanada 2009), (Yuko and Nauro 2002), Beatrice and Adolf(2004) Asiedu, (2002, 2006) Obadan, 1982,
Soumyananda (2009), in his study of factors attracting FDI to Nigeria, employed market size, exchange rate, inflation rate, openness and natural resources as variables in his study. Using vector error correction model, the results, shows that in the long run, FDI inflow to Nigeria is co-integrated with natural resources outflow, GDP per capita, openness, inflation and foreign exchange rate. Also to be noted here is that the coefficients of error correction of FDI flow and foreign exchange rate are significantly negative whereas that of resources flow and GDP are significantly positive.

Obida, and Abu (2010), in their study found out that market size of the host country, deregulation, political stability, and exchange rate depreciation are the main determinants of FDI in Nigeria. Singh and Jun (1995) and Wheeler and Mody (1992) found out that political risk and administrative efficiency are insignificant in determining FDI. The findings suggest that the bulk of FDI inflow to Nigeria can be explained by resource seeking FDI (Soumyanada 2009).

Asiedu (2002) in her study of determinants of foreign direct investment to developing countries (71 countries ï divided into 32 Sub ï Saharan African Countries and 39 non Saharan African Countries) for the period of 1988 ï 97, found that FDI and trade are compliments, and openness to trade promotes FDI to Sub ï Saharan African Countries and non Saharan African Countries. This is line with (Andre´ 2008; Bénassy-Quéré et al (1999); Botrî and Škuflic (2006); Greenaway et al (2007); Hakro and Ghumro (2997); Onyeiwu and Shrestha (2004)).

FDI plays an important role in promoting economic growth and development, raising a country’s technological level and also creating employment. Basworth, and Collins (1999)
found out that FDI inflows tend to raise a country’s economic growth rate through their positive impact on total factor productivity.

Abu, et.al (2008), using Hausman test specification recommends the use of fixed effects model. In their analysis, they found out that all the explanatory variables as specified in the economic functions are found to be significant in attracting.

Elijah and Festus (2008), examined the effect of exchanged rate volatility and inflation uncertainty on foreign direct investment in Nigeria for the period of 1970-2005. Using the GARCH model, the estimated results indicated that exchanged rate volatility and inflation uncertainty exerted significant negative effect on foreign investment during the period. In addition, the results show that infrastructure development, appropriate size of the government sector and international competitiveness are crucial determinants of FDI inflow to the country.

Globerman and Shapiro (2002), included governance issue in their study but used a pooled ordinary OLS model to assess whether governance and infrastructure influence FDI flows. Their results show that governance and infrastructure are an important determinant of FDI inflows.

Cheng and Kwan (2000), in their study, assume that it takes time for FDI to adjust to equilibrium or desired level. Using OLS model, their result indicates that FDI are mainly driven by the host country’s market, human capital, and infrastructure.

Akinkugbu (2003), in his study found that inflation rate is not significant in the empirical study of the determination of FDI inflows. But in Yang et al, (2000) study, using OLS model, interest rate and inflation were found to be positive and significant to FDI. Other variables such as host GDP, exchange rate and transport costs were not found to be significant at all, while the coefficient on wage rate changes, openness and industrial disputes even had an unexpected sign.
Olajide, (2010), using OLS Estimation in examining foreign direct investment and its determinants in an open economy—Nigeria, found out that Nigerian’s potential market size, the degree of export orientation human capital, providing enabling environment through the provision of infrastructural facilities, and macroeconomic stability are important determinants of FDI flows. Also, government consumption expenditure, openness to international trade and human capital are complementary to economic growth.

Isabel (2005), in her work, using OLS model found out that market size makes Australia a more attractive place to invest and FDI is driven by longer term considerations and its determinants could not be fully explained by any single theoretical model.

Roberta and Claudio (2002) analysed Italy relative disadvantage by focusing on FDI determinants. Their results show that comparing the FDI determinants endowments of the European countries, Italy ranks low for competitiveness in terms of employee’s social security contribution. And that in order to reduce this gap, it should improve on its location specific advantages.

Bruce (2005) surveyed the recent burgeoning literature that empirically examines the foreign direct investment (FDI) decisions of multinational enterprises (MNES) and the resulting aggregate location of FDI across the world and submits that the empirical literature on determinants of FDI is still young enough that most hypotheses are still up for grabs. Thus, it is perhaps not surprising that Chakrabarti (2001) in his empirical analysis finds that most determinants of cross-country FDI are family fragile strategically.

Agnes, et.al. (2005) explored the FDI based on the institutions of the host country for 52 countries, 45 of which are either emerging or in transition and found out that Bad institutions are suspected to reduce inward FDI, hence reducing the scope for economic converge.

LVNa and Lightfoot (2006) analyses the determinants of FDI on both the country and regional level through the extensive review of past research studies as well as through
the development of a multiple model and provide evidence that GDP that proxies for the market size and potential is shown to be a big attraction for FDI. Labour quality and the progress of reform or the degree of openness are also important determinants of the distribution of FDI.

Addison and Heshmati (2003), in their study of FDI determinants in 182 countries explored the determinants of FDI flows in developing countries using estimation method and pooled OLS. They found that both democracy and ICT have significant and positive effects on FDI, leading them to conclude that developing countries should receive more support to democratize and set up ICT equilibrium trap. They also find that the impact of the variance of inflation is weekly significance for a pooled model. In Europe and central Asia and MENA countries, it shows negative sign but shows positive sign for Latin America.

Behreiz and Mastafa (2011), by estimating a panel data econometric model, the determining factors of foreign direct investment (FDI) in 32 developing countries over the period of 1990–2007. According to the econometric results in the main model, technology and internet have positive effects on FDI inflows in developing countries.

Karunaratne and Tisdell (1998), in their study of globalization and multinational foreign direct investment in Australia, found variable like openness to be positive and significant to FDI.

Another FDI determinant is the exchange rate. It has been observed that country with weak currency attracts FDI inflows. If the exchange rate of a country depreciates, it attracts FDI since foreign firms may merge with or acquire domestic industries. Masayki and Ivohasinam, (2005). Also, Benassyï Quere et al 2001 are of the opinion that effects of the level of exchange rates on FDI inflows are rather ambiguous. Goldberg and Kolstad (1994) in their study found out that exchange rate variability serves as an impediment to FDI inflow between United States and Canada, Japan and United Kingdom. According to Ahmet (1996), the movement in the exchange rate between the Turkish Lira and the Deutschemark, and interest rate affects inflows of Deutschemark into the Turkish economy. Also Elijah
(2006) found out that inflation and real exchange affects FDI negatively in the short and long run respectively.

Empirically, Rojid, Seetanah, Ramessur and Sannasse (2008) in their study on various potential determinants of FDI discovered that all the explanatory variables as specified in the econometric functions are seen to be significant elements in attracting FDI in Africa and are in line with recent empirical evidences. Also, Development Business (1999) in its survey cites large market size, political and macroeconomic stability, GDP growth, regulatory environment, and the ability to repatriate profits as the five most important factors affecting FDI. In the FDI confidence index, the United States was ranked first, followed in descending order by Brazil, China, the United Kingdom, Germany, Poland, France, Mexico, Spain and so on. Heavy manufacturers remain mostly interest in the large emerging markets, such as Brazil, China, India, Mexico and Poland. Ewe-Gylee (2001) in his study finds that market size, infrastructure quality, political stability, economic stability, and free trade stability and free trade zones are important for FDI, while results are mixed regarding the importance of fiscal incentives, the business/investment climate, labour cost, and openness. Investigation of both the short run and long run locational determinants of FDI,

Bende-Nabende and Slater (1998), under the broad categories of cost related, Investment environment improving and other macroeconomic factors found out that the short-run dynamics indicate European investment in the Thai manufacturing sector has been more responsive to the macroeconomics factors. The long-run dynamics on the other hand suggest that European investment has been more responsive to the investment environment improving factors.

Dar, Presley and Malik (2004) examined the causality and long term relationship between FDI, economic growth, and other socio-political determinants and observed that there is an evidence of relationship between FDI and economic growth. Their paper considers economic growth, exchange rate and level of interest rate, Unemployment, and political stability as determinants of the FDI inflows for Pakistan over the period 1970-2002.
Asiedu (2006) also examined the determinants of FDI to Africa. She suggests that low inflation and efficient legal system promote FDI but corruption and political instability have the opposite effect. At the same time Asiedu (2002, 2006) explored the impact of natural resources, market size, host country’s investment policy, corruption and political instability on FDI flow. Obadan (1982) in his study, using least squares technique on annual data for 1982-1974 supports the market size hypothesis confirming the role of protectionist policies (tariff barriers). The study suggests that factors such as market size, growth and tariff policy should be considered when dealing with policy issues relating to foreign investment to the country. In the same issue of market size as one of the major determinants of FDI, Anyanwu (1998) in his study of the economic determinants of FDI in Nigeria confirmed the positive role of domestic market size in determining FDI inflow into the country. He also noted, that the abrogation of the indigenization policy in 1995 significantly encouraged the flow of FDI into the country and that more effort is required in raising the nation’s economic growth so as to attract more FDI.

Iyoha, (2001) in his economic study of the main determinants of foreign investment in Nigeria, examined the effects of microeconomic instability and uncertainty, economic size and external debt on foreign direct investment inflows. The result shows that market size attracts FDI to Nigeria whereas inflation discourages it.

Dinda, (2008) using time series econometric technique on annual data of Nigeria, examines the effect of the country’s natural resource export, along with openness, market size and microeconomic risk variables like inflation and foreign exchange rate on FDI inflow during 1970-2006. The findings suggest that in long run, market size is not the significant factor for attracting FDI to Nigeria, it contradicts the existing literature.

Transport costs are found to be positively related to FDI. Branard (1997) found this to be true while Ekholm (1998) finds cost to be only weakly related to FDI. The mixed results are expected to the extent that horizontal FDI are stimulated by higher transport cost while vertical FDI benefits from lower transport. Generally, low labour cost attracts FDI. Feenstra and Hanson (1997) in their study notes that low labour cost has a large impact on U.S owned
assembly plants in Mexico. But Mody, Dasgupta, and Sinha (1998) show different results. They found out that labour costs are not an attractor of Japanese FDI. In the issue of government incentives this should be positive but the empirical results, however are mixed. Reuber, et. al. (1973) did not find incentives to be important. They also noted that many previous studies had found mixed results. It is discovered that incentives that result in excessive revenue loss may actually generate expectations of future tax hikes and discourage FDI. Also Shah (1995) similarly suggest that tax incentives may simply shift tax revenues from host developing countries to foreign treasuries without providing any special benefit to the foreign investors, meanwhile UNCTC (1991) and Wood ward and Rolfe (1993) in their studies discovered that tax incentives have a positive influence on FDI.

Some developing countries have different FDI determinants because of the nature of their economies. Ben-Tahee and Giorgioni (2007) in their study showed that trade openness and foreign market are not significant for FDI in-flows to Maghreb countries, while other determinants such as growth in market size and existing stock of FDI are significant and carry expected signs. Yuko and Nauro (2002) in their study investigated the determinants of foreign direct investment inflows in the transition economies between 1990 and 1998 using market size and resource abundance as variables in their work, they argued that different types of FDI are motivated by different factors - the market-seeking FDI and the resource-seeking FDI. The market-seeking FDI goes to countries with large local market while resource-seeking FDI goes to countries with abundant natural resources. Using OLS model, their first result indicates that FDI into transition economies are mainly driven by the host country’s market, availability of skilled workers (or the level of human capital),external liberalizati on the quality of the bureaucracy and sufficient infrastructure. They also found out that the more liberalized the trade regimes is, the more FDI they attract, and that availability of skilled labor and the rule of law are also contributing factors influencing FDI flows. Ries and Swenson (1995) finds that industry level agglomeration benefits play an important role in the location choice of Japanese manufacturing plants in the U S.

Marcelo and Mario (2002) using econometric model based on panel data analysis for 38 developing countries (including transition economies) for the period of 1995 – 2000 period
and concluded that FDI is correlated to level of schooling, economy's degree of openness, risk and variables related to microeconomic performance like inflation, risk and average rate of economic growth.

The direct investment into a country is being determined by specific assets that compensate the initial disadvantage faced by foreign firms in relation to local firms. Hymer (1976). Also Markusen and variables (1995) developed a model along the same line, comparing the importance of multinational firms to foreign trade. Another line of studies of the determinants of FDI is based on the idea of transaction cost internalization (see Buckley and Casson, 1996 and 1981 and Buckley, et.al; 2002). They are the first to develop this hypothesis, starting with the idea that the intermediate product markets are imperfect, having higher transaction costs, when managed by different firms.

Caves (1996) opines that the rational for increased efforts to attract more FDI stems from the belief that FDI has several positives effects. There is a high level of FDI inflows. And this high level of FDI inflows is an affirmation of the economic policies that the policy makers have been implementing as well as a stamp of approval of the future economic health of that country (see Ramkishen et al 2008; Lemi and Asefa (2001).

Muhammad and Eatza (2009) analyses a range of host country characteristics using panel data on 72 countries for the period 1970–2008, keeping in view the endogeneity problem of the chosen host country's characteristics, shows that gross domestic product (GDP), economic growth, and per capita income positively affect FDI. Furthermore, they find that remittances have a significant and positive impact on FDI.

Estimating a cross-sectional economic model, Demirhanand and masca (2008), explored the determinants of FDI inflows in 38 developing countries for the period of 2000–2004 and they found out that the positive and significant factors affecting FDI include income per growth rate, telephone main lines, and degree of openness.
In addition, the FDI and growth studies are open to a number of criticisms. First, an important critique has to do with causality: does FDI lead to greater productivity and overall economic growth, or are these prerequisites for attracting FDI? Dua and Rasheed (1998) finds that an unidirectional positive Granger causal impact on inward FDI flows (both approval and actual), thus inferring that economic activity is an important determinant of attracting FDI inflows in India, shaukat 2005; Tseg and Zebreg (2002) also reported similar questions regarding causality between market, size/growth and magnitude of FDI inflows in the case of China.

More recent studies on determinants of FDI emphasized that since the contribution of FDI to domestic capital formation is quite small, growth led FDI is more likely to boost economic growth than FDI led growth (Athreye and kapur (2001). Resimini (2002) Bevan and Esterin (2000).

Although, it has been argued that political instability in the host country could discourage the inflows of FDI, most empirical studies support this argument, some empirical evidence suggested that political factors plays an insignificant role in firms decision to invest abroad (Zhang 2002; Adereoso and Wei 2003; Wei and Liu 2001,)

Tang, Selvanathan and selvanthan (2008) explored the causal link between FDI, domestic investment and economic growth in china between 1988 and 2003 using the multivariate VAR and ECM. There results indicate that there is bidirectional causality between domestic investment and the economic growth while there is a single directional causality from FDI to domestic investment and economic growth.

Ahmed and Malik (2009) in their analysis of the factors that affect FDI, domestic investment, and growth, using a panel dataset for 35 developing countries for the period of 1970–2003 found out that the effect of FDI on economic growth is insignificant while the effect of domestic investment is positive and highly significant, implying that it has a complementary relationship with FDI. And this positive and significantly effect is supported

Artige and Nicolini (2005) analyzed the determinants of FDI inflows for a group of European regions. Their result show that region FDI inflows rely on a combination of factors that differs from one region to another. Researchers by Carr, Markusen and Maskus (2001) and Begstrand and Egger (2007) have developed theoretical model of multinational enterprise (MNE's) foreign investment decisions that suggest additional possible factors that determine FDI pattern.

Eicher, Helfman and Lenkosko (2010), in their study on determinations of FDI flows, focused on the static cross country FDI patterns, which has been the focus of most previous studies because it connects directly to the main general equilibrium theories of multinational firm behavior.

Bruce (2011) in his empirical studies of bilateral foreign direct investment (FDI) activity show substantial differences in specification with little agreement on the set of covariates that are (or should be) included.

Alan and Saul (2004), using a panel data set of bilateral flows of foreign direct investment (FDI) from western countries, mainly in the European Union (EU), to Central and Eastern European ones. In their work, the simple correction coefficient between the risk measure and FDI is positive and significant, even though the risk effect becomes insignificance of the simple correlation declines over time and it becomes insignificant by the final period.

And finally, Carolyn and Lynne (2002) in their study on factors determining the form and volume of private foreign direct investment in Southern Africa found out that FDI is one element linking Southern Africa to the global economy. The result is not isolated however; as it has also been found on trade flows (see Brun et al 2002, as well as Didier and Head, 2004).
2.4. FOREIGN DIRECT INVESTMENT INFLOWS IN DEVELOPING COUNTRIES

One major challenge for developing countries is to remain attractive for FDI in the Crisis, especially for such investment that serves their long-term development goals and enhances competitiveness (eg. Investment in areas such as infrastructure, agriculture, sustainable energy and technology).

According to the UNCTAD 2008-2010 world investment prospect Survey, conducted April-June 2008, 40 percent of the respondent companies already mentioned at that time that the financial instability had a "negative" or very negative impact on their investment expenditures and programmes.

UNCTAD (2009) reported that the year 2008 marked the end of a growth cycle in international investment that started in 2004 and saw world foreign direct investment (FDI) inflows reach a historic record of $1.9 trillion in 2007. The impact of economic crisis varies widely, depending on region and country, with consequences for the geographic pattern of FDI flows. One has to keep in mind that the present situation is very different from that of the previous major financial Crisis of the 1997 which is the Asian Crisis which originated in developing countries (See UNCTAD, 1998a) and this has a significant negative influence on FDI inflows in a number of countries.

The preliminary results of world investment prospects survey 2009-2011 (WIPS) conducted by UNCTAD, also show that developed economics in Europe and North America-which still host the major share of world FDI flows and stocks have so far been the most affected by the reduction in these international investment programmes. The sources of FDI have emerged, especially from the South. Countries from the south are emerging economies and countries well endowed with natural resources are becoming a growing source of FDI, either through the internationalization strategies carried out by their TNCS or through the investment activities of their sovereign wealth funds (SWFS).

UNCTAD (2008b) reported that the long-term FDI potential of SWFS is high. According to some estimates the total value of assets of SWFs could have fallen by 25-30 percent in 2008.
In contrast, net flows of portfolio capital and other private capital flows (bank loans) to developing countries, already in sharp decline in 2008 are all expected to be negative in 2009 (IMF, 2008). In Nigeria, the foreign Direct Investment (FDI) inflow declined to $6.1 billion in 2010 as against $8.28 billion in 2009 (Daily trust 2011). This indicates that global FDI inflows rose modestly to $1.24 trillion in 2010 compared to $1.18 trillion in 2009. According to UNTAD (2010), FDI inflows will reach $1.4 - $1.6 trillion or the pre-crisis level in 2011. They are expected to rise further to $1.7 trillion in 2012 and reach $1.9 trillion in 2013. Today, the FDI story of Nigeria is dominated by the oil industry. It was not always so at independence in 1960 when there were widespread of FDI presence in the economy. Policies design thereafter, narrowed the scope for FDI and decades of political instability, economic mismanagement. And also, the endemic corruption further reduced Nigeria’s ability to attract and retain FDI. This was compounded by a relentless deterioration of the country’s spite of increased public revenues generated by the oil sector. The return of democracy in 1999 has created the opportunity for economic renewal and an associated broader base of FDI. To reap the benefits of FDI, the Nigerian government undertook ambitions measures with a view to improve the investment climate.

Between 1970 and the mid-1990s, Nigeria as the primary destination of FDI inflows to Africa accounted for more than 30 percent of all FDI inflows to the continent. UNTAD (2009). This is largely a result of its oil attractiveness. However, in 2007, notwithstanding the booming oil industry, Nigeria accounted for only about 160 percent of total FDI inflows to Africa. Its leading role in terms of attracting FDI started eroding due to the surge of FDI inflows to other oil-rich countries, such as Angola and Sudan. Another factor is the improved FDI performance of other large African counties such as Egypt and South Africa, which was successful in attracting FDI in divers sectors of their economies.

2.5. FOREIGN DIRECT INVESTMENT INFLOWS IN NIGERIA:
There is the view that FDI tends to be larger in countries that are riskier financially, underdeveloped and institutionally weak, (Hausamann and Fernandez-Arias, 2000). In 1960 to 1970, Nigeria depended highly on foreigners for investment in the country and, that was why FDI was viewed as a vehicle for political and economic domination of Nigeria.
Influenced by this, the Nigerian government policy thrust decided to limit foreign investment in the country through the Nigerian Enterprises Promotion Decree (NEPD) Promulgated in 1972 and was amended in 1977. The NEPD that was established was also known as indigenization policy. Its aim was geared towards regulated inflows of FDI in Nigeria during the period, also during this period only 60% FDI stake holding was allowed by foreigners. This resulted in a decline in foreign investment and slowed down the pace of economic activities in all sectors of the economy in Nigeria.

In Nigeria, 1986 marked the beginning of deregulation era. In an attempt to create a suitable friendly environment for investment and growth in economy, the Nigerian government introduced the structural adjustment programme (SAP) in July 1986. The programme incorporated trade and exchange reforms reinforced by monetary and fiscal measures that enabled diversification in the economy’s mono-export base. The implementation of SAP was expected to bring about improvement in the economy more especially in the sharp exchange rate depreciation which was expected to discourage importation and make export-oriented multinational gain on their investment. During this period, Nigerian economy recorded wide fluctuation in exchange rate and inflation rate uncertainly heightened up till the 2010. After the introduction of SAP, there were intense political conflicts in the country and this paralyzed every sphere of the Nigerian economy. This development limited the achievements of the reform programme under SAP. This era was characterized by the era of military rule in the country. The return of democracy on May 29, 1999 raised hopes of redressing socio-economic damages of the military rule.
Fig 3: FDI inflows to Nigeria 1970-2010

From the Figure 4 above, it presents the FDI inflows in Nigeria during the Pre and Post Deregulation era in Nigeria (1970-1985 and 1986-2010). During this periods, Nigeria witnessed greater foreign direct Investment (FDI) inflows starting from the Pre Deregulation Era N121.60m and declined in 1973 to N192.60m. It later increased in 1975 and declined in 1976. But starting from the Deregulation Era, FDI inflows increased tremendously to N2,499.60 million in 1986 and declined in 1987 and peaked at N1,345.00 million in 1988. Later half of the 1990s, the annual net flow of FDI into Nigeria increased and dropped in 1999 up to 2002. Then in 2003 it increased again, continuously up to 2009 and dropped by 78.1% in 2010.
2.6. SECTORAL ANALYSIS

In the 1970s, the oil boom attracted tremendous FDI in the mining and querying sector, but in late 1970s and early 1980s the oil glut together with the global economic recession significantly affected the flow of investment into all sectors in Nigeria. Despite the general decline, manufacturing sector benefited from FDI inflows as it accounted for the largest proportion of cumulative FDI for many years between 1978 and 1988. This continued until the early 1990s, when the rising share of the mining and querying sector again broke it. Although data on the sectoral allocation are inconsistent, at the beginning of 1990s the primary sector accounted for only a little over 30% of the total FDI stock in Nigeria, while manufacturing attracted almost 50% and services close to 30%. The stock of FDI in the manufacturing sector compared favourably with the mining and querying sector as it averaged about 32% for 1970-2001. The sector only recorded below this average in the 1970-1985, periods.
Table 1: Sectoral Composition of FDI in Nigeria, 1970-2009. (% Distribution of Total)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mining &amp; Quering</th>
<th>Manufacturing</th>
<th>Agriculture</th>
<th>Transport &amp; communication</th>
<th>Building &amp; Construction</th>
<th>Trading &amp; Business</th>
<th>Miscellaneous Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>19970-1974</td>
<td>51.2</td>
<td>25.1</td>
<td>0.9</td>
<td>1.0</td>
<td>2.2</td>
<td>16.9</td>
<td>2.7</td>
</tr>
<tr>
<td>1975-1979</td>
<td>30.8</td>
<td>32.4</td>
<td>2.5</td>
<td>1.4</td>
<td>6.4</td>
<td>20.4</td>
<td>6.1</td>
</tr>
<tr>
<td>1980-1984</td>
<td>14.1</td>
<td>38.3</td>
<td>2.6</td>
<td>1.4</td>
<td>7.9</td>
<td>29.2</td>
<td>6.5</td>
</tr>
<tr>
<td>1985-1989</td>
<td>19.3</td>
<td>35.3</td>
<td>1.4</td>
<td>1.1</td>
<td>5.1</td>
<td>32.6</td>
<td>5.2</td>
</tr>
<tr>
<td>1990-1994</td>
<td>22.9</td>
<td>43.7</td>
<td>2.3</td>
<td>1.7</td>
<td>5.7</td>
<td>8.3</td>
<td>15.4</td>
</tr>
<tr>
<td>1995-1999</td>
<td>43.5</td>
<td>23.6</td>
<td>0.9</td>
<td>0.4</td>
<td>1.8</td>
<td>4.5</td>
<td>25.3</td>
</tr>
<tr>
<td>2000-2004</td>
<td>34.7</td>
<td>27.6</td>
<td>1.9</td>
<td>1.1</td>
<td>7.1</td>
<td>7.6</td>
<td>26.0</td>
</tr>
<tr>
<td>2004-2009</td>
<td>22.6</td>
<td>40.7</td>
<td>0.7</td>
<td>2.1</td>
<td>2.2</td>
<td>8.2</td>
<td>23.9</td>
</tr>
</tbody>
</table>

SOURCE: Based on figures from CBN’s Statistical Bulletin (Various Issues).

During the 40 years period (1970-2009), Agricultural, transport and communication and building and construction remained least attractive to host FDI in Nigeria, jointly, they accounted for about 7.5% of the stock of FDI in Nigeria. The share of miscellaneous services presents two episodes: prior to 1990, the share of the average has jumped to about 20%, thus, the average for the entire period was about 11%. Ebuetse, (2000) submits that many sectors were forbidden to FDI, if not private companies in general and also, the military governments built up an empire of more than a thousand state-owned enterprises, the vast majority of them permanently making losses (Harseh 2000; Ariyo and Jerome, 2004).
2.7. FOREIGN DIRECT INVESTMENT AND GROWTH IN NIGERIA

Nigeria have come to see FDI as a source of economic development and modernization and as well as income growth and source of employment in an economy. Therefore, promoting and attracting FDI has therefore become a major component of development strategies for Nigeria. The role of FDI as a source of capital has become increasingly important not only because of the belief that it can help to bridge the savings-investment gap but also because it can assist in the attainment of millennium Development goal targets. It contributes to growth in substantially manner by making up for domestic capital shortfalls, provide technology, managerial skills, facilitate access to foreign markets and generate both technological and efficient spillovers to local firms. Abimbola, (2010), in his study, points out that the benefits of FDI vary with respect to the level of openness and quality of human capital in developing countries and Holger and Greenaway, (2004) assert that, there is a considerable evidence that Foreign direct investment can effect growth and development by complementing domestic investment and by facilitating trade and transfer of knowledge and technology. It has been observed generally by most developing countries that foreign direct investment is attached with great importance especially in the growth of an economy. And because of this, Nigeria tries to attract greater volume of this important potential resource.

Ajayi (2000), in his study of what Africans need to do to benefits from globalization, notes that Africa, like many other developing regions of the world, needs a substantial inflows of external resources in order to fill the savings and foreign exchange gaps and leaping itself to sustainable growth levels in order to eliminates its pervasive poverty. This really made some African countries which Nigeria is one of them to reform their economic policy, investment laws and improve on its financial system in order to attract more FDI. Though, in some studies, some authors in their studies discovered that FDI is not only important to developing countries. It is equally important to developed countries for economic development. According to Ayanwale (2007), the developing countries see foreign direct investment as an important element in their strategy for economic development. In order to attract more foreign direct investment for economic development, countries comes up with some promotional measures like mergers and acquisitions through privatisation to lure FDI into their economy. Kyaw (2003) submits that mergers and acquisitions including private-to-
private transactions as well as acquisitions through privatization which increased significantly in developing countries because an increasingly important vehicle for FDI. In UNCTAD (2008) report, it was that the increase in FDI inflows largely reflected relatively high economic growth and strong corporate performance in many parts of the world. This is also observed by some researchers in the field of the role of foreign direct investments in a country.

The Nigeria economy is a mixed economy marked with a reasonably developed financial system, legal, communications, transport and entertainment sectors. It is ranked 31st in the world in terms of GDP (PPP) as of 2009 Wikipedia, (2011). From 2003 to 2007, Nigeria attempted to implement an economic reforms program called the National Economic Empowerment Developing Strategy (NEEDS). The purpose of the NEEDS was to raise the country’s standard of living through a variety of reforms, including macroeconomic stability, deregulation, liberation, privatisation, transparency and accountability. Oil continues to dominate the public finance and foreign exchange resources in Nigeria. Asiedu (2003), in her study, opines that the level of FDI attracted by Nigeria is mediocre compared with the resource base and potential need. Most of the foreign investment in Nigeria is geared towards Oil and gas sector. Amadi (2002) asserts that with oil as the main sources of foreign exchange, which is a one-product monoculture economy, must be continuously deficient in investment capital. In the work of Markusen and Venables (1999), of the analysis of the effect of foreign firms on the developing of domestic firms in the industrial sector, it was discovered that foreign companies compete with domestic producers while creating additional demand for domestically produced intermediate goods through linkages with local suppliers.

In giving attention on the foreign direct investment and economic growth in an economy, researchers have various findings. In line with the impact of foreign direct investment in a country, many studies have been conducted, in some, results do not give conclusive evidence of the impact of foreign direct investment on the economy of developing countries, see Samuel, (2009) Sylvester (2005); Lumbila(2005) and Ndikumana and Verick (2008).
The work of this researchers shows that foreign direct investment has significant positive effect on economic growth while the works of Fry, (1993); Hermes and Lensink,(2003) and Dutt shows that FDI does not have positive effects on economic growth. While some others work are still not yet clear on if FDI brings growth in a country or not. Samuel, (2009), asserts that FDI is necessary for economic growth but not a sufficient condition for economic growth while Ayanwale (2007) notes that the relationship between FDI and economic growth is yet unclear. He further stressed that, recent evidence shows that the relationship may be country and period specific.

From Musila and Signe (2006) work, they submitted that foreign direct investment (FDI) is a major component of capital flow for developing countries. They further stressed that its contribution towards economic growth is widely argued, but most researchers concur that the benefits out weight its cost on the economy. Also, Mc Aleese (2004) in his work states that, FDI embodies a package of potential growth enhancing attributes such as technology and access to international market. He continued by asserting that, the host country, in order to benefit from this must satisfy certain preconditions in order to absorb and retain these benefits and not all emerging markets possess such qualities.

Interestingly, the potential contribution of foreign direct investment (FDI) to economic development and integration into the world economy is now widely recognized. It assumed prime importance in the wake of declining concessional aid, which has created a preference for long-term and more stable financial inflows. Zein.,(2006), in his study discussed two notable theories which are - classical theory and product theory. The classical theory is that theory that claims that Foreign direct investment and multinational corporations are vital to economic growth and therefore contributes to development in the host countries through several channels which include the following; the transfer of capital, advance technology equipment and skills, improvement in the balance of payments, the expansion of tax base, foreign exchange earnings, creation of employment, infrastructural development and the integration of the host economy into international markets.
Shiro (2005) in his study, submits that foreign direct investment is therefore suppose to serve as means of augmenting Nigeria’s domestic resources in order to carry out effectively, her development program and raise the standard of living of her people. Ajayi (2006) opines that FDI stimulates domestic investment and the total investment in the country is enhanced. Also Carkovic and Levine (2002) note that FDI produces externalities in the form of technology transfer and spillovers. Foreign direct investment according to Abdul and George (2003) has potentially desirable features that affect the quality of growth with significant implications for poverty reduction. FDI also generates revenue and support the development of safety net for the poor countries. Klein et al (2001). According to Odi (1997), foreign direct investment is viewed as a major stimulus to economic growth in developing countries. Its ability to deal with two obstacles, namely: shortage of financial resources and technology and skills, has made it the centre of attention for policy-makers in low-income countries in particular.

FDI is very important in any developing country because it reduces the difference between the desired gross domestic investment and domestic savings. According to Adegbite and Ayandi (2010), FDI helps to fill the domestic revenue-generation gap in a developing economy, given that most developing countries government do not seem to be able to generate sufficient revenue to meet their expenditures needs. Jenkin and Thomas (2002) assert that FDI is expected to contribute to economic growth not only by providing foreign capital but also by crowding in additional domestic investment.

Nigerian need for foreign direct investment (FDI) is born out of the under developed nature of the country’s economy that essentially hindered the pace of her economic development.

There are three main channels through which FDI can bring about economic growth in an economy. First is that FDI is expected to be growth enhancing by augmenting domestic savings in the process of capital accumulation.

Second, through technological transfer, FDI is the main conduit through which technological transfer takes place, and this leads to an increase in factor productivity and efficiency in the
utilisation of resources which leads to growth. De Gregorio (2003) notes that FDI may allow a country to bring in technologies and knowledge that are not readily available to domestic investors, and in this way increase productivity and growth throughout the economy. Also, Luiz and Mello (1999) submits that, although FDI is expected to boost long-run growth in the recipient economy via technological upgrading and knowledge spillovers, their result revealed that the extent to which FDI is growth enhancing depends on the degree of complementarities and substitution between FDI and domestic investment.

Third, FDI leads to increase in exports as a result of increased capacity and competitiveness in domestic production. Markusen and Venables, (1999) note that other channels identified in which FDI bolstered growth included higher export in host country and increased backward as well as forward linkages with affiliates to multinationals. Eknisan (2004), in his study discovered that export has a positive and statistically significant effect on growth. There are reasons for firms investing across national boundaries. These reasons include the following:

1. Natural resources seeking investment: This aims to exploit the natural resources endowments of countries, for example most of the FDI in Nigeria are geared towards extracting oil in the country.
2. Market-seeking investment, This aims to access new markets that are attractive as a result of their size for growth.
3. Efficiency-seeking investment: This aims to take advantage of special features in a certain area such as the costs of labour, the skills of the labour force and the quality and efficiency of the infrastructure.
4. Strategic-asset seeking investment: This is oriented towards man-made assets, as embodied in a highly-qualified and specialized workforce, brand names and images, shares in particular markets etc. Increasingly, such FDIs takes the form of cross-border Mergers and Acquisitions, whereby a foreign firm takes over the entire or part of a domestic company that is in possession of such assets.
Some studies on the relationship between foreign direct investment and economic growth particularly on developing countries suggest that FDI has a positive impact on economic growth but this also depends on some crucial factors such as human capital base in the host country, the trade regime and the degree of openness on the economy (Balasubramanyam et al. 1996 and 1999, Baliamoune 2002 and Boreszterim, et. al.(1998.). FDI has both cost and benefits. Based on this notion, Tendon (2002), argued that multinational enterprises are in business to make profit and not for development. Shatz and Venables (2000) suggested two main reasons why a firm would want to become a multinational one. According to them, the first reason is to better serve the local market and the other is to get lower-cost inputs. For FDI to serve local markets, it is often being referred to as "horizontal" or "market-seeking". This is FDI which involves building duplicate plants in a foreign location to supply the market there. The motive behind this is to reduce the cost involved in supplying the market (tariff or transport costs) or to become more competitive in other ways like proximity to the market and also being able to respond to changing local circumstances and preferences. In this case FDI tends to replace exports if the costs of market access through exports are higher than the costs of setting up a local plant and doing business in a foreign environment.

Second reason is that FDI getting lower-cost inputs is being referred to as vertical or "production cost minimizing" FDI. This vertical or production cost minimizing FDI involves the slicing of the vertical chain of production and consequent relocation of part of this chain in a low-cost location. Example of VFDI is the production of electronic good, say in Asia, in which many other component part and final sale might take place elsewhere, say in USA, Europe or Africa. Vertical FDI is also being referred to as what is what is called "raw material seeking" FDI since the inexpensive inputs that could be primary commodities or raw materials are in a specific Location. However, both horizontal and vertical FDI may tend to cluster in certain location, (sometime referred to as "Agglomeration") perhaps, because of linkage among projects, creating incentive to locate close to other firms.

FDI is pro-consumption and pro-import and negatively related to gross domestic investment, Adelegan (2000). At the same time, Akinlo (2004) notes that foreign capital has a small and
not statistically significant effect on economic growth in Nigeria. In world of investment, economic theory provides us with many reasons why FDI may result in enhanced growth performance of the host country. Joysri, (2009) in his study, found statistically significant long run positive, but marginal impact of FDI inflow on GDP growth in India while comparing the two most important benefits of and costs of foreign direct investment. However, there is no universal agreement among the empiricists about the positive association between FDI inflows and economic growth.

Epirically, the studies of Djankov and Hoekman (2000), Damijan, et. al. (2001), Konings (2001), Castellani and Zanfei (2002) and Zukowska- Gagemann (2002) and Zukowska- Gagemann(2002) show that some studies observe a positive impact of FDI on economic growth, and others detected a negative relationship between the two variables. For example, the findings of FDI and growth by Ndikumana and Verick (2008), Andreas (2006) and Lumbila (2005) show that FDI has a positive significant effect on economic growth while the findings of Akinlo, 2004: Ayanwale(2007): De Mello, (1999) and Longani and Razin (2003) show negative or a non significant effect of FDI on economic growth. Also, the work of Bengoa and Sanchez-Robles (2003) shows that FDI is positively correlated with economic growth, but host countries requires human capital, economic stability and liberalised markets in order to benefit from long-term FDI inflows while Durham (2004) in his study fails to identify a positive relationship between FDI and economic growth. He suggested that the effects of FDI are contingent on the absorptive capability of host countries.

Extending the scope of this study to other developing countries, Basu and Guaniglia, (2007) empirically conducted a study of a sample of 119 developing countries for the period of 1970-1999 using the Generalised methods of moments (GMM), result revealed that FDI enhances both educational inequalities and economic growth in developing countries. Also Hyun, (2006) used a sample of 59 developing countries in his study for the period of 1984-1995, using ordinary least square (OLS) method concluded that FDI has positive effect on economic growth. Johnson, (2006) also used ordinary least square (OLS). In his empirical analysis of 90 developed and developing countries for the time period of 1980-2002 and
concluded that FDI inflows accelerate economic growth in developing countries. Borensztein et al (1998) in their study, finds that FDI raises growth, but only in countries where the labour force has achieved a certain level of education. Alfaro, et. al. (2004) drew attention to financial markets as they finds that FDI promotes economic growth in economies with sufficiently developed financial market. Also, Balasubramanyam et al. (1996) in their study, observe trade openness as being crucial for realization of the potential growth impact of FDI.

Although, it may seen natural to argue that foreign direct investment (FDI) can convey great advantages to host countries, Hanson, (2001) argues that evidence that FDI generate positives spillovers for host countries is weak, also Gorg and Greenwood,(2002) in a review of micro data on spillovers from foreign owned to domestically owned firms, concludes that the effects are mostly negative.

Laura (2003), using cross-country data for the period 1981-1999, found that total FDI exerts an ambiguous effect on growth of an economy. She further asserts that foreign direct investment in the primary sector, however, tend to have a negative effect on growth, while investment in manufacturing sector is positive and evidence from the service sector ambiguous. Blomstrom, Globerman and Kokko, (2002) notes in the study that there appears to be good evidence that FDI efficiency spillovers exists, although this is not a strong consensus on the associated magnitudes. In the study of FDI and growth, some of these mentioned above demonstrated that there is growing evidence that FDI enhance technological change through technology diffusion. Moreover, Lensink and Morrissey (2001) opines that FDI do not only contributes to imports of more efficient foreign technologies, it also generates technological spillover for local firms.

Furthermore, Adeolu (2007) investigated the empirical relationship between non-extractive FDI and economic growth in Nigeria using augmented growth model via the ordinary least squares finds that FDI in Nigeria contributes positively to economic growth. In respective of this, the empirical linkage between FDI and economic growth in Nigeria is yet unclear, despite numerous studies that have examined the influence of FDI on Nigeria’s economic...
growth with varying outcomes (Odozi, 1995; Adelegan 2000; Oyinlola, 1995; Oseghale and Amonkhienan, 1987; Akinlo; 2004). Ogiogio (1995) reports negative contributions of public investment to GDP growth for reasons of distortions. But, Obinna (1983), Brown 1962 and Aluko reported positive linkage between FDI and economic growth in Nigeria. At the same time, the study of Ariyo (1998) on the investment trend and its impact on Nigeria’s economic growth over the years found out that only private domestic investment consistently contributed to raising.

All most all the countries in African region depend very much on FDI for so many reasons. Some of which are amplified by Asiedu (2001). She demonstrated in most of her studies on FDI that FDI contributes growth in developing countries. Also, in the studies carried out by (Sjoholm, 1999; Obwona, 2001, 2004) it noted that the preference for FDI stems from its acknowledged advantages. And this makes the African countries to improve on their business climate in order to attract FDI. Concerning Nigeria as a country ,Asiedu (2003) points out that the level of FDI attracted by Nigeria is mediocre compared to foreign direct investment in other emerging countries. On the basis of this, government have often provides special incentives to foreign firms to set up companies in their countries. The economic rationale for offering special incentives to attract FDI frequently derives from the belief that foreign investment produces externalities in the form of technology transfers and spillovers Carkovic and Lavine (2002). Meanwhile De Gregorio (2003), while contributing to the debate on the importance of FDI, notes that FDI may allow a country to bring in technologies and knowledge that are not readily available to domestic investors, and in this way increases productivity growth throughout the economy. Bengos and Sanchez-Robles (2003) assert that even though FDI is positively correlated with economic growth, host countries require minimum capital, economic stability and liberalized markets in order to benefit from long-term FDI inflows. Interestingly, the level of economic development may not be the main enabling factor in FDI growth nexus.

Samuel, (2007) examines the relationship between foreign direct investment (FDI) and economic growth and measuring the gross domestic product (GDP) finds out that gross domestic product causes foreign direct investment and that the contribution of FDI to
economic growth is significant. Nadiri (1993) finds positive and significant effects from U.S sourced FDI on productivity growth of manufacturing industries in France, Germany Japan and United Kingdom. Equally, Ariyo (1998) in his study, found out that only private domestic capital consistently contributed to raising GDP growth rates during the period of 1970-1995.

Hapiyaremya and Ziesemer (2006) in a study of SSA Countries found that the overall level of capital investment does not seem to significantly affect economic growth because most of the capital was in the primary sector. Similarly, Adelegan (2000) who explored the seemingly unrelated regression model to examine the impact of FDI on economic growth in Nigeria found out that FDI is pro-consumption and negatively related to gross domestic investment. Also, Both (Romer, 1986, Lucas 1988) in their study submits that FDI also influences long run variables such as research and development (R & D) and human capital.

Finally, the study of Lumbila (2005) using a panel analysis to study the impact of foreign direct investment on economic growth in 47 African countries between 1980 and 2000 found that FDI exerts a significant positive effect on economic growth.

2.8. THE NIGERIAN ECONOMY
The economy of Nigeria is middle income, mixed economy, emerging market with well developed financial, legal, Communications, transport and entertainment sectors. (Wikipedia 2011). As at 2009, Nigeria is ranked 31st in the world in terms of GDP (PPP). Its emergent, though currently underperforming manufacturing sector is the second largest on the continent, producing a large proportion of goods and services for the West Africa.

Nigeria has been hindered by years of mismanagement; the economic reforms of the past decade have put Nigeria back on track towards achieving its full economic potential. Nigeria GDP at purchasing power parity more than doubled from $170.7 billion in 2005 to $374.3 billion in 2010, although estimates of the size of the informal sector (which is not included in official figure) put the actual numbers closer to $520 billion. At the same time, the GDP per capital doubled from $1200 per person in 2009 to an estimated $2,500 per person in
2009 (again with the inclusion of the informal sector, it is estimated that GDP per capital hovers around $3,500 per person). Nigeria is the largest economy in West Africa Region and 3rd Largest economy in Africa (behind South Africa and Egypt), and on track to becoming one of the top 30 economics in the world in the early part of 2011.

In 2005 the Nigerians inflation rate was estimated at 15.6 percent. Agriculture accounts of 26.8% of GDP and two third of employment. And this made Nigeria rank twenty fifth worldwide and first in Africa in farm output in 2009. In Industry, Nigeria ranks 44th worldwide and third in Africa in factory output. The oil boom of the 1970s led Nigeria to neglect its strong agricultural and light manufacturing bases in favour of an unhealthy dependence on crude oil. In terms of services, Nigeria ranks 63rd worldwide and fifth in Africa in services output. This is because of low power and telecom density which has crippled the growth of the sector.

Although the Nigerian decaying infrastructure and a poor regulatory environment prevents foreign investors from coming into the country for investment, companies interested in long term investment and joint ventures, especially those that use locally available raw materials, will find opportunities in the large national market. One of the most salient features of Nigeria’s economy in that since 1980, it has not grown: the GDP per capita in 2006 was almost the same as it was in 1980. Khondoker (2007) in his study found out that countries with larger GDP and high GDP growth rates maintain business friendly environment with abundant modern infrastructural facilities, such as internet; and can successfully attract FDI, on the other hand, significantly affect economic growth of an economy.
Fig. 4: Nigeria’s GDP at Constant Basic Price 1970 - 2010.

Source: Authors Calculation.

2.9 SUMMARY OF REVIEW OF RELATED LITERATURE OF FDI DETERMINANTS IN PRE AND DEREGULATED NIGERIAN ECONOMY

Many studies on this topic confirm that, causal factors to be examined in this study, that is the (market size, exchange rate, inflation rate, openness, natural resource) significantly encouraged the inflow of FDI into the country. In some studies, it shows that market size attracts FDI while inflation discourages FDI in a host country.

In Nigeria, it has been observed that, the rate of FDI inflow is low despite incentives been offered to foreign investors. Many Foreign investors are adamant to come to Nigeria. This may not be unconnected to the lingering problem, the Boko Haram issue that is constituting general insecurity in the country at the movement and of course the pervasive indiscipline that is becoming the order of the day in the Nigerian economy.

Some researchers agreed that the market size is the major determinants of FDI inflow into a host country (see Haile and Asseja, 2005; Metwally, 2004; Moosa, 2008, Fuat and
Ekram, 2002). This is because, it enable the investors to make profit but it is also observed by some market speculators in Nigeria that what makes foreign investors to come in a country is a sophisticated stock exchange market that is highly developed. This is one of the issues that deters the foreign investors in Nigeria. Apart from the issues mentioned above, Soludo (1998) maintained that it is not profitability of investment today that attract investors to invest, but how long will the profit remain fairly stable overtime. From the statement, is seen that stable social political and economic environment lures FDI inflows into a country. Once an environment is volatile, an investor prefers to wait or invest in a project of short term in nature. In the deregulated era in Nigeria, the causal factors (market size, exchange rate, inflation rate, openness, natural resources) and of course the deregulation and political instability introduced, shows expected positive effect on FDI but is expected that low inflation promotes FDI but political instability have negative effect on FDI.

Identified variables relevant to this study are as follows:

1. Market size
2. Exchange rate
3. Inflation rate
4. Natural resources
5. Degree of openness.

Market Size

Soumyananda (2009), in his study of factors attracting FDI to Nigeria, employed all the variables listed above in his work (market size, exchange rate, inflation rate, openness and natural resources). Using vector error correction model the results shows that in the long run, FDI inflow to Nigeria is co-integrated with natural resources outflow, GDP per capita,
openness, inflation and foreign exchange rate. Also to be noted here is that the coefficients of error correction of FDI flow and foreign exchange rate are significantly negative whereas that of resources flow and GDP are significantly positive. This suggests that in short run, if there is any disturbance in the economy, FDI and foreign exchange rate returns to the long run equilibrium path whereas resource flow and GDP do not come back to its long run equilibrium path. The result also shows that inflation rate affects FDI inflows in Nigeria in short run. FDI inflow increases directly with rising inflation in Nigeria, and GDP and FDI and also openness have significant impact on resource outflow. At the same time, inflation rate significantly reduces real GDP. Natural resources flow significantly affect inflation rate, which follows autoregressive structure.

Yuko and Nauro (2002) in their study of the location determinants of foreign direct investment in transition economies used market size and resource abundance as variables. In their work, they argued that different types of FDI are motivated by different factors - the market-seeking FDI and the resource-seeking FDI. The market-seeking FDI goes to countries with large local market while resource-seeking FDI goes to countries with abundant natural resources. Using OLS model, their first result indicates that FDI into transition economies are mainly driven by the host country’s market, availability of skilled workers (or the level of human capital), and sufficient infrastructure. The natural resources dropped out because of its invariance over time in the data set after taking first-differences. The estimated model for Yuko and Nauro (2002) analysis followed the model proposed by Cheng and Kwan (2000). They assume that it takes time for FDI to adjust to equilibrium or desired level.

In Iyoha, (2001), his study examined the effects of macroeconomic instability and uncertainty on private investment inflows, the result of the study shows that market size attracts FDI in Nigeria whereas inflation discourages it. Anyanwu (1998) study of the economic determinants of FDI in Nigeria also confirmed the positive role of market size in determining FDI inflows into the country. Asiedu (2002) finds that natural resources, openness, market size, foreign exchange and inflation are major determinants of FDI inflow for whole of Africa.
Beatrice and Adolf (2004) in their study of determinants of FDI inflows to African countries using a panel data estimation approach also found out that population size, which proxies the market size is attracting FDI inflows. In their study, they found out that the practical and rational way of expanding the market size is to integrate economies of individual countries into regional blocks.

All other researchers (Asiedu, 2002, 2006; Obadan, 1982; Anyanwu, 1998; Iyoha, 2001; LVNa and Lghtfoot, 2006; Isabel, 2005; Ewe-Gylee, 2001; fungi, lizaka, Lee and Parker, 2000; Billington, 1999; Shatz and Variables, 2000; Dees, 1998; Branard, 1997; Loree and Guisinger, 1994) on determinant of FDI in a country found market size to be positive and significant.

Exchange rate and Inflation rate,
As for the risk variables (exchange rate and inflation rate), Alan and Saul (2004), in their work, the simple correction coefficient between the risk measure (ie exchange rate and inflation rate) and FDI is positive and significant, even though the risk effect becomes insignificance of the simple correlation declines over time and it becomes insignificant by the final period. They found out that the important influences of FDI inflows into a country to be unit labor cost, gravity factors, market size and proximity. In Obida, and Abu (2010); Elija and Festus 2008; Akinkugbu (2003), Dar, Presley and Malik (2004), inflation rate and exchange rate affects FDI positively. This result is contrary to result of Elija (2006); Goldberg and Kolstad (1994) where inflation and exchange rate affects FDI negatively. But in Addison and Heshmati (2003). Inflation rate and exchange rate affects FDI negatively in Europe and central Asia and MENA countries but shows positive sign for Latin America.

Natural Resources
Supporting the presence of resource - seeking FDI, Rojid et al 2005 in their study of determinants of FDI, using Hausman test specification, found the abundance of natural resources to be positive and significant. This is in line with Asiedu (2002, 2006), Yuko and Nauro (2002) Dinda, (2008), Cheng and Kwan (2000), Soumyanada 2009, (Yuko and
Nauro 2002), where natural resources is also considered as one of the major determinants of FDI inflow for whole of Africa. Openness had a positive impact on FDI and the size of the domestic market, stock of human capital, though to a large extent as witnessed by the size of their respective coefficients, played a positive role.

Degree of Openness
Ben- Taber and Giorgioni (2007), in their study of the determinants of foreign direct investment, focuses on to Arab Maghreb Union (AMU) countries between 1990 ï 2006. Using simultaneous-equation regressions for panel data, the result show that trade openness is not significant to FDI flows to Maghreb countries. This result is contrary to Rojid et al 2005; Asiedu, (2002); Karunaratne and Tisdell, (1998); Marcelo and Mario (2002), where openness had a positive and significant impact on FDI. Other determinants such as growth in market size and existing stock of FDI are significant in Ben-Taber and Giorgioni (2007) study and carry the expected signs. Inflation, show negative and significant sign too. And exchange rate show positive and significant sign.


As for whether FDI has brought growth to Nigeria, FDI is very important in any developing country because it reduces the difference between the desired gross domestic investment and domestic savings.

Ajayi, (2000) asserts that Africa needs substantial inflows of external resources in order to fill the savings and foreign exchange gaps and leaping itself to sustainable growth levels in order to eliminate its pervasive poverty. Ayanwale, (2007), also is in support of this. In line
with the impact of foreign direct investment in a country, many studies have been conducted, in some, results do not give conclusive evidence of the impact of foreign direct investment on the economy of developing countries. But in the work of Samuel, (2009) Sylvester (2005); Lumbila (2005) and Ndikumana and Verick (2008), their results shows that foreign direct investment has significant positive effect on economic growth.


But in the works of De Mello, (1999) and Longani and Razin (2003); (Odozi, 1995; Fry, (1993); Adelegan 2000; Oyinlola, 1995; Oseghale and Amonkhienan, 1987; Akinlo; 2004). Ogiogio (1995); Hermes and Lensink,(2003), results, shows negative or a non significant effect of FDI on economic growth. Also, Durham (2004) in his study fails to identify a positive relationship between FDI and economic growth. He suggested that the effects of FDI are contingent on the absorptive capability of host countries.

All most all the countries in African region depend very much on FDI for growth in the country.

Samuel, (2007) examines the relationship between foreign direct investment (FDI) and economic growth and measuring the gross domestic product (GDP) finds out that gross domestic product causes foreign direct investment and that the contribution of FDI to economic growth is significant. Nadiri (1993) finds positive and significant effects from U.S
sourced FDI on productivity growth of manufacturing industries in France, Germany Japan and United Kingdom. Equally, Ariyo (1998) in his study found out that only private domestic capital consistently contributed to raising GDP growth rates. Adelegan (2000) and Lumbila (2005), also, found that FDI exerts a significant positive effect on economic growth.

NOTE: In this study, we follow recent empirical work, particularly (Soumyanada (2009; 2010); Yuko and Nauro (2002); Beatrice and Adolf (2004);(2007); Alan and Saul (2004);Rojid et al (2005); Ben- Taber and Giorgioni (2007),Omankhanlen, (2011);Asiedu, (2002, 2006;Ayanwale, (2007); Iyoha (2001); LVNa and Lghtfoot (2006); Isabel (2005); Ewe-Gylee (2001); fung, lizaka, Lee and Parker (2000); Shatz and Variables, (2000); Olajide, (2010); Obida and Abu, (2010); to investigate the foreign direct investment determinants in pre and deregulated Nigerian economy.
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CHAPTER THREE
RESEARCH METHODOLOGY

3.1. RESEARCH DESIGN
A research design is concerned with turning the research questions into a testing project and it has its positive and negative sides. The research design has been considered as a "blueprint" for research, dealing with at least four problems: what questions to study, what data are relevant, what data to collect, and how to analyze the results. According to Onwumere (2009), a research design is a kind of blueprint that guides the researcher in his or her investigation and analysis. He further stressed that it is a format which the researcher employs in order to systematically apply the scientific method in the investigation of problems. Research design is also the structuring of investigation aimed at identifying variables and their relationship to one another Asika, (2006).

This study employs the ex post facto research design. This is the type of research involving events that have already taken place (Onwumere, 2009). The data already exist as no attempt would be made to control or manipulate relevant independent variable. It aims at determining and measuring the relationship between one variable and another or the impact of one variable on another

3.2. NATURE AND SOURCES OF DATA
Annual secondary data of the variables are used and they include ,total inflows for foreign direct investment and its potential determinants (market size, degree of openness, natural resources, exchange rate and inflation rate).all these variables were collected from the central Bank of Nigeria- Statistical bulletin (various issues), Federal office of statistics, World Bank handbook of statistics(see the web site for details :http://stats.unctad.org/handbook)for the period 1970-2010, The unit of measurement for all the variables is the naira. This study follows a systematic time series economic approach of testing whether nature of time series data are stationary or non-stationary in order not to obtain spurious result before using any econometric technique.
3.3. SPECIFICATION OF MODELS

3.3.1: PRELUDE

The study is largely quantitative and builds on existing studies and methodologies. The analytical procedures adopted in this study to test the hypotheses are discussed below and these include: A multiple regression model, unit root test, the co integration and granger causality test. All these models are used in order to avoid a number of challenges in a econometric studies. Some of these challenges include the issue of subjectivity and bias of response. It is usually difficult incorporating these challenges into econometric model.

In this study, the researcher followed (Soumyanada (2009; 2010); Yuko and Nauro (2002); Beatrice and Adolf (2004);Ben- Taber and Giorgioni (2007); Rojid, et. al.(2005);Alan and Saul (2004), Omankhanlen (2011)model, but in a modified version. The study employs a multiple regression model to estimate the relationship between foreign direct investment and its potential determinants.

The estimated models used for analysis by some of the researchers are as follows:

For Soumyanada (2009; 2010), we have

\[ FDI = \beta_0 + \beta_1\text{marksize} + \beta_2\text{exchrate}_t + \beta_3\text{infrate}_t + \beta_4\text{opennes} + \beta_5\text{natresources} \] ..................(1)

where:
\[ FDI = \text{foreign direct investment} \]
\[ \beta_0 = \text{Constant} \]
\[ \text{marksize} = \text{market size} \]
\[ \text{exchrate}_t = \text{exchange rate} \]
\[ \text{infrate}_t = \text{exchange rate} \]
\[ \text{openness} = \text{degree of openness} \]
\[ \text{natresources} = \text{natural resources} \]

For Yuko and Nauro (2002), the estimated model for their analysis followed the model proposed by Cheng and Kwan (2000). They assumed that it takes time for FDI to adjust to equilibrium or desired level. The basic equation estimated here is:

\[ Y_{t+1} = aY_{t+1} + BX_{1t} + Y_{t} \] ..................(2)
\[ v_{it} = n_i + u_{it} \]

Where,

- \( Y_{it} \) is the stock of FDI in Country \( t \) in year \( t \)
- \( X_{it} \) is a vector of other explanatory variables such as market size, labour cost, labour quality, resource abundance, infrastructure, policy variables and business operating conditions; and
- \( V_{it} \) is an error term that includes the unobservable country-specific attributes, \( n \).

For Beatrice and Adolf (2004), the model they estimated is linear, and is as follows:

\[
F{DI}_{it} = \beta_0 + \mu_1 + \beta_1 POP_{it} + \beta_2 GCONSGDP_{it} + \beta_3 DEMOC_{it} + \beta_4 COLLAPSE_{it} + \beta_5 INDUSTRY_{it} + \beta_6 TELL_{it} + \beta_7 AIDPC_{it} + \epsilon_{it} \tag{3}
\]

where:

- \( FDI \) = foreign Direct Investment
- \( \beta_0 \) = Constant
- \( \mu_1 \) = Recipient effects
- \( POP \) = Population (market size)
- \( GCONSGDP \) = government consumption as a percentage of GDP
- \( DEMOC \) = democracy
- \( COLLAPSE \) = collapse (standing for total collapse of government)
- \( INDUSTRY \) = industry value added as a percentage of GDP
- \( TELL \) = Telephone mainlines per 1,000 people
- \( AIDPC \) = aid per capita
- \( \epsilon_{it} \) = Error term

For Ben-Taber and Giorgioni (2007), the model they estimated is linear, and is as follows:

\[
F{DI}_{it} = \beta_0 + \mu_1 + \beta_1 POP_{it} + \beta_2 GCONSGDP_{it} + \beta_3 DEMOC_{it} + \beta_4 COLLAPSE_{it} + \beta_5 INDUSTRY_{it} + \beta_6 TELL_{it} + \beta_7 AIDPC_{it} + \epsilon_{it} \tag{4}
\]

where:

- \( FDI \) = foreign Direct Investment
- \( \beta_0 \) = Constant
- \( \mu_1 \) = Recipient effects
- \( POP \) = Population (market size)
- \( GCONSGDP \) = government consumption as a percentage of GDP
For Rojid et al (2005), the estimated model for this is as follows:

\[ FDI^{it} = f(RES^{it}, SIZE^{it}, WAGE^{it}, XMGDP^{it}, SER^{it}, POL^{it}) \]...

where:
- \( FDI \) = foreign direct investment
- \( RES \) = Neural resource
- \( SIZE \) = Market size
- \( WAGE \) = Labour cost
- \( XMGDP \) = Human capital
- \( TAX \) = corporate Tax
- \( POL \) = Political instability

Alan and Saul (2004), the estimated model is as follows:

\[ FDI_{ij} = f(GDP_j, GDP_{ij}, \text{distance}_{ij}, \text{trade}_{ij}, UL_{ijC}, r_{ij}, \text{risk}_{ij}) \]...

where:
- \( FDI_{ij} \) = foreign direct investment
- \( GDP_j \) = represents the size of the source (host) country
- \( \text{distance}_{ij} \) = is measured by the distance between the capital cities of country I and country j in kilometers
- \( \text{trade}_{ij} \) = measures the openness of the host country
- \( r_{ij} \) = measures the interest rate differentials between the source and host countries
- \( UL_{ijC} \) = is unit labour costs in the host country
- \( \text{risk}_{ij} \) = captures a vector of institutional, legal, and political factors in the host country

For Omankhanlen (2011), we have

\[ GDP \hat{=} f(FDI) \]...

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3.3.2. HYPOTHESES AND MODEL SPECIFICATIONS

This study attempts to investigate the validity of the following four hypotheses presented in this study:

**Hypothesis One:** Casual factors (market size, exchange rate, inflation rate, openness, and natural resources) are not foreign direct investment (FDI) determinants in a pre deregulated Nigerian economy.

In this study, we employ a multiple regression model by adopting (Soumyanada (2009; 2010) to estimate the causal relationship between foreign direct investment and its potential determinants in a pre deregulated Nigerian Economy. The estimated model is:

\[
FDI = \beta_0 + \beta_1 \text{marksize} + \beta_2 \text{exchrate}_t + \beta_3 \text{infrate}_t + \beta_4 \text{opennes} + \beta_5 \text{natresources} \\
\]

(8)

The modified version of this model for this hypothesis is thus presented below:

\[
FDI = f(GDP, EXCHRAT, INFRAT, DOP, NRX) \\
\]

(9)

where:

- \( FDI \) = Foreign Direct Investment
- \( GDP \) = the GDP per capital, which reflects the income level of the whole economy.
- \( EXCHRAT \) = exchange rate of the host country\'s currency
- \( INFRAT \) = inflation rate which is frequently used as an indicator of macroeconomic instability
- \( DOP \) = trade openness which is the sum of exports and imports as a percentage of GDP in the previous period.
NRX = the country's natural resources flow. This is defined as the ratio of Nigeria's natural resources export (NRXn) to the world resource export (NRXw), i.e. NRX = NRXn / NRXw. NRX.

NOTE: NRX is a share of the world resource exports. Inflation rate and foreign exchange rate represent the macroeconomic risk in the open economy.

Here, the model expresses Foreign Direct Investment (FDI) as a function of the market size of host country (GDP), exchange rate of the host country's currency (EXCHRAT), inflation rate (INFRAT), Openness of the economy for foreign trade (DOP) and natural Resources (NRX). Expressing the model further, we have

\[ FDI = \beta_0 + \beta_1 GDP + \beta_2 EXCHRAT + \beta_3 INFRAT + \beta_4 DOP + \beta_5 NRX + \mu \]  

\[ (10) \]

where:
\[ \beta_0, \beta_1, \beta_2, \beta_3, \beta_4 \text{ and } \beta_5 \text{ are coefficients or elasticities} \]
\[ \mu = \text{The disturbance term} \]

Here, we expect FDI to be positively related to the host country's market size, openness of the economy to foreign trade, and Natural resources; while exchange rate and inflation rate are expected to be negatively related to FDI.

**Hypothesis Two:** The Causal factors (market size, exchange rate, inflation rate, openness, natural resources) are not Foreign Direct Investment (FDI) determinants in deregulated Nigerian Economy.

In examining the determinants of FDI in deregulated Nigerian Economy, we employ Soumyanada (2009; 2010) and Beatrice and Adolf (2004). The model Beatrice and Adolf(2004), estimated is linear, and is as follows:

\[ FDI_{it} = \beta_0 + \mu_1 + \beta_1 POP_{it} + \beta_2 GCONSGDP_{it} + \beta_3 DEMOC_{it} + \beta_4 COLLAPSE_{it} + \beta_5 INDUSTRY_{it} + \beta_6 TELL_{it} + \beta_7 AIDPC_{it} + \epsilon \]  

\[ (11) \]
The general form of the model estimated for this hypothesis in a modified version is:

\[ FDI = f(GDP, EXCHRAT, INFRAT, DOP, NRX) \]………………………………………………………….(12)
\[ FDI = \beta_0 + \beta_1 GDP + \beta_2 EXCHRAT + \beta_3 INFRAT + \beta_4 DOP + \beta_5 NRX + \mu \]…………………..(13)

where:
\[ \beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \text{and} \beta_5, \text{are coefficients or elasticities} \]
\[ \mu = \text{The disturbance term} \]
\[ GDP = \text{the GDP per capita} \]
\[ EXCHRAT = \text{the exchange rate} \]
\[ INFRAT = \text{the inflation rate} \]
\[ DOP = \text{Degree of openness} \]
\[ NRX = \text{natural resources} \]

**Hypothesis three:** There is no causal relationship between the growth of Nigerian Economy and foreign direct investment (FDI) within the pre deregulation era.

The model for this hypothesis is fashioned after models used by Omankhanlen, (2011), and Ayanwale (2007) in their study. The researcher adopted their models and modified it. Ayanwale (2007) identifies two main hypotheses on the influence of FDI on economic growth namely; the modernization hypotheses and the depending hypotheses. In his study, the modernization hypotheses points that FDI promotes economic growth by providing external capital and through growth, it spreads the benefits throughout the economy, while the depending thought insist that there is deleterious long term impact of FDI on growth.

The estimated model of Omankhanlen (2011), is:
\[ GDP = f(FDI) \]……………………………………………………………………………………………..(14)

Hence, following the theoretical discussion above and Omankhanlen, (2010) model stated, the modified version of it for this study is:
\[ \beta_0, \beta_1, \Delta \]
\[ \Delta \ln \text{RGDP} = \beta_0 + \beta_1 \Delta \ln \text{FDI} + \mu \] 

where:

\( \ln \) = the natural logarithm

RGDP = the real gross domestic product (A proxy for growth)

\( \beta_0 \) = the constant term \( \beta_1 \) is the slope while

\( \beta_1 \) = the slope while in error term

FDI = foreign Direct investment.

**Hypothesis Four:** There is no bi-directional causal relationship between growth of the Nigerian economy and foreign direct investment (FDI) within the deregulated era?

Here, the Yuko and Nauro (2002) model was used for the testing. The basic equation estimated here is:

\[ Y_{1t} = \alpha Y_{n-i} + \beta X_{1t} + \gamma \mu \] 

The modified version of this model for this hypothesis is thus presented below:

\[ \text{FDI} = f(\text{GDP}) \]

Ideally, all the data stated in FDI determinants are required for analysis but due to limitations in getting data on some of them, this study is confined with the following:

**FDI:** FDI in a host country is captured by the total inflows of FDI into Nigeria and this comprises the equity capital, reinvested earnings and other capital (mainly intra company loans)

**Market size:** the variable that has been widely used to proxy market size is the GDP Chakrabarti 2001. The GDP in this study represents the GDP at current basic prices.
**Degree of openness:** This is measured as the ratio of export and import to GDP. It is also termed as trade intensity. Trade intensity refers to the ease with which capital can be moved in or out of a country by investors.

**Exchange rate:** This is the rate at which the naira is converted to the US dollar. A country with relatively weak currency attracts than one with strong currency.

**Inflation rate:** The rate of inflation refers to the changes in the general price level, Asiedu (2002) notes that it is used as a measure of overall macroeconomic stability of a country. High inflation rate increases the users cost of capital therefore serves as disincentive to FDI in a country.

**Natural Resources:** This is defined as the ratio of Nigeria natural resources export (NRXn) to the world resources export (NRXw).

### 3.4. TECHNIQUES OF ANALYSIS

**3.4.1: ORDINARY LEAST SQUARE REGRESSION ANALYSIS**

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

OLS technique may be applied to single or multiple explanatory variables and also categorical explanatory variables that have been appropriately coded. In single explanatory variables, the relationship between a continuous response variable (Y) and a continuous explanatory variable (X) may be represented using a line of best-fit, where Y is predicted, at least to some extent, by X. If this relationship is linear, it may be appropriately represented mathematically using the straight line equation 'Y = a + βx'.
For the multiple explanatory variables additional variables are added to the equation. The form of the model is the same as in a single response variable (Y), but this time Y is predicted by multiple explanatory variables (X1 to X3).

\[ Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \]

The interpretation of the parameters (a and β) from the above model is basically the same as for the simple regression model, but the relationship cannot be graphed on a single scatter plot. \( a \) indicates the value of Y when all values of the explanatory variables are zero. Each \( \beta \) parameter indicates the average change in Y that is associated with a unit change in X, whilst controlling for the other explanatory variables in the model. Model-fit can be assessed through comparing deviance measures of nested models. For example, the effect of variable X3 on Y in the model can be calculated by comparing the nested models

\[ Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \]
\[ Y = a + \beta_1 X_1 + \beta_2 X_2 \]

The change in deviance between these models indicates the effect that X3 has on the prediction of Y when the effects of X1 and X2 have been accounted for (it is, therefore, the unique effect that X3 has on Y after taking into account X1 and X2). The overall effect of all three explanatory variables on Y can be assessed by comparing the models

\[ Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \]
\[ Y = a \]

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

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

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

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

Variables such as inflation, interest rates, exchange rate and unemployment rate appears to be persistent and are frequently modeled as units root process. Unit roots technique is usually used to examine whether the series for two variables are stationary or not. Macroeconomic time series are usually not stationary. In most such series are made stationary by calculating logarithms or taking first or second differences. There are many tests used to determine stationary but in this study, the stationary of the variables will be tested by using Augmented Dickey-fuller unit root test.

3.4.3. COINTEGRATION TEST.

Cointegration is a statistical property of time series variables. In a situation where two or more series are individually integrated (in the time series sense) but some linear combination of them has a lower order of integration, then the series are said to be cointegrated. According to (C T Eviews 2010), Cointegration refers to a scenario where linear combination of non stationary variables is stationary. For these non-stationary time series variables, there is a possibility of estimation by differencing in cases where the differences are stationary. For estimation of the co-integrating relationship to be undertaken, it requires that all the time series variables in the model be integrated of order one I(1). The next step after recognizing the order of integration of the variables as I (1) or above is to test whether the variables in question can co-integrate or not.

The three main methods for testing for cointegration are: The Engle-Granger two-step method (null: no cointegration, so residual is a random walk), The Johansen procedure, Phillips-Ouliaris Cointegration Test available with R (null: no cointegration).
There are two common methods for testing co-integration and estimating the relationship among cointegrated variables namely the Engle-Granger (1987) Two Step Procedure and Johansen’s (1988) maximum likelihood method. In the Engle-Granger two-step procedure, variables entering the co-integrating vector are tested for integration of the order, I (1). Thus, the first step in this procedure is pre-testing the variables for their order of integration. The second step is estimating the long-run equation relationship and obtaining the residual. The third step is testing whether the residual is stationary. If the residual is stationary, then the variables are said to be co-integrated, i.e., they do have long run relationship. The final step is estimation of the error correction model (ECM) including the lagged value of the residual as the explanatory variable. The ECM model is estimated to see the short run relationship between the variables. The Johansen maximum likelihood method is an alternative to the Engle-Granger Two Step Procedure. This procedure is a multivariate generalization of the Dickey-Fuller test.

It has being observed that unit root tests have limited power to distinguish between a unit root and a close alternative and because of this, the pure units root assumption is typically based on convenience rather than on story theoretical or empirical facts. Most econometricians believe that near-integrated process, which explicit allow for a small (unknown) deviation from the pure unit root assumption be more appropriate in a way to describe many economic time series, see Elliott, (1998) and Stock (1991). Common practice among econometricians is to test whether nature of time series data are stationary or non-stationary in order not to obtain spurious result before using any econometric technique. Considering that all the variables are non-stationary and integration of order one or 1 (1), and also these is a co-movement between FDI and natural resources and other FDI determinants then Co-integration technique would also be appropriate format to investigate the short and long causality in error correction model (ECM). Johnsen (1988) approach provides the number of Co-integration equation among the variables. The error correction model (ECM) is among the Co-integration equations. It is useful for short run dynamics with long run equilibrium relationship. These are several techniques for ECM in the existing literature. In this study, sophisticated econometrics techniques like Vector Error Correction
Model (VECM) which is used for empirical investigation of the determinant of FDI in short and long run would be used. The VECM is more useful in Multivariate framework.

3.4.4. GRANGER CAUSALITY TEST

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

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

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

Lack of Causality:
This means that there is no relationship among variables, therefore no causality. In this case, in order to apply Granger causality test, the series that belong to variables should be
stationary. Therefore, it is necessary to make test, the series that belong to variables should be stationary. Gujaranti (1995) submits that recent studies have shown that the conventional F-test for determining joint significance of regression-derived parameters, used as a test of causality, is not valid if the variables are non-stationary and the test statistics does not have a standard distribution.

In this study, Granger causality test would be applied in order to determine the presence of the relationship among variables and its direction. The Granger causality test (Granger, 1969) is carried out by using the following equations:

\[ Y_t = \beta_0 + \beta_1 X_t + \mu \]

\[ X_t = \gamma_0 + \gamma_1 Y_t + \mu \]

According to Tari (2005), the equation suggests that if the addition of the information about the variables x to the model contributes to the estimate of the variables y, the variable x is the cause of the variable y. Here equation 5 shows a causality relationship from x to y and the equation 6 from y to x. Analyzing the model presented above, Granger causality test is carried out as

Ho: \( \beta = 0 \) and Hi: \( \beta \neq 0 \) when Ho hypotheses is accepted, X is not the cause of Y. But if Hi hypotheses is accepted, then X is the cause of Y. If both hypotheses are rejected, this means that there is a two-way causality between X and Y. The Granger testing works in a way that, if \( \hat{F} \) table value, Ho hypotheses is accepted as there is no causality from X to Y. But if \( \hat{F} \) value is higher than the table value, Ho hypotheses is rejected and it is causality from X to Y. All these calculations are applied in the same way in order to test whether there is causality from Y to X.
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CHAPTER FOUR
DATA ANALYSIS

4.1 INTRODUCTION

In this chapter, data for our study are presented and analysed. Our hypotheses are also tested and their implications presented.

4.2 DATA PRESENTATION AND INTERPRETATION

Here, our data are being interpreted alongside the objectives of our study. Recall our objective one which is to determine the causal factors of Foreign Direct Investment in a pre-deregulated Nigerian economy.

Relevant data in respect of this objective are presented in table 2. These data cover the Foreign Direct Investment determinants in a Pre deregulated Nigerian Economy, from 1970 to 1985. It is important to note that 1970 marked the end of civil war, followed by oil boom in 1973, which brought huge wealth to the nation.
### Table 2: Data on GDP, FDI, EXR, INF, NRX, and DOP used for Pre deregulation (1970 - 1985) Analysis

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>Δ in % GDP</th>
<th>FDI</th>
<th>Δ in % FDI</th>
<th>EXR</th>
<th>Δ in % EXR</th>
<th>INF</th>
<th>Δ in % INF</th>
<th>NRX</th>
<th>Δ in % NRX</th>
<th>DOP</th>
<th>Δ in % DOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>5,281.10</td>
<td>121.6</td>
<td>0.7143</td>
<td>13.76</td>
<td>NA</td>
<td>0.3109</td>
<td>14.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>6,650.90</td>
<td>25.94</td>
<td>319.6</td>
<td>162.83</td>
<td>0.6955</td>
<td>-2.63</td>
<td>16.28</td>
<td>NA</td>
<td>0.3567</td>
<td>14.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>7,187.50</td>
<td>8.07</td>
<td>248.3</td>
<td>-22.31</td>
<td>0.6579</td>
<td>-5.41</td>
<td>3.46</td>
<td>-78.38</td>
<td>NA</td>
<td>0.3373</td>
<td>-5.44</td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>8,630.50</td>
<td>20.08</td>
<td>192.6</td>
<td>-22.43</td>
<td>0.6579</td>
<td>0.00</td>
<td>5.4</td>
<td>56.07</td>
<td>NA</td>
<td>0.4059</td>
<td>20.34</td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>18,823.10</td>
<td>118.10</td>
<td>48.3</td>
<td>-74.92</td>
<td>0.6299</td>
<td>-4.26</td>
<td>12.67</td>
<td>134.63</td>
<td>NA</td>
<td>0.4002</td>
<td>-1.40</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>21,475.20</td>
<td>14.09</td>
<td>475.4</td>
<td>884.27</td>
<td>0.6159</td>
<td>0.00</td>
<td>5.4</td>
<td>33.96</td>
<td>NA</td>
<td>0.4027</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>26,655.80</td>
<td>24.12</td>
<td>46.3</td>
<td>-90.26</td>
<td>0.6265</td>
<td>1.72</td>
<td>24.3</td>
<td>-28.45</td>
<td>NA</td>
<td>0.4464</td>
<td>10.85</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>31,520.30</td>
<td>18.25</td>
<td>197.6</td>
<td>326.78</td>
<td>0.6466</td>
<td>3.21</td>
<td>15.09</td>
<td>-37.90</td>
<td>NA</td>
<td>0.4671</td>
<td>4.64</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>34,540.10</td>
<td>9.58</td>
<td>331.8</td>
<td>67.91</td>
<td>0.6060</td>
<td>-6.28</td>
<td>21.71</td>
<td>43.87</td>
<td>NA</td>
<td>0.4133</td>
<td>-11.52</td>
<td></td>
</tr>
<tr>
<td>1979</td>
<td>41,974.70</td>
<td>21.52</td>
<td>289.9</td>
<td>-12.63</td>
<td>0.5957</td>
<td>-1.70</td>
<td>11.7</td>
<td>-46.11</td>
<td>NA</td>
<td>0.4362</td>
<td>5.54</td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>49,632.30</td>
<td>18.24</td>
<td>467</td>
<td>61.09</td>
<td>0.5464</td>
<td>-8.28</td>
<td>9.97</td>
<td>-14.79</td>
<td>42</td>
<td>0.4691</td>
<td>7.54</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>47,619.70</td>
<td>-4.06</td>
<td>137.3</td>
<td>-70.60</td>
<td>0.6100</td>
<td>11.64</td>
<td>20.9</td>
<td>109.63</td>
<td>30.2</td>
<td>-28.10</td>
<td>0.5011</td>
<td>6.82</td>
</tr>
<tr>
<td>1982</td>
<td>49,069.30</td>
<td>3.04</td>
<td>1,624.90</td>
<td>1083.47</td>
<td>0.6729</td>
<td>10.31</td>
<td>7.7</td>
<td>-63.16</td>
<td>29.2</td>
<td>-3.31</td>
<td>0.3867</td>
<td>-22.83</td>
</tr>
<tr>
<td>1983</td>
<td>53,107.40</td>
<td>8.23</td>
<td>556.7</td>
<td>-65.74</td>
<td>0.7241</td>
<td>7.61</td>
<td>23.2</td>
<td>201.30</td>
<td>35.7</td>
<td>22.26</td>
<td>0.3089</td>
<td>-20.12</td>
</tr>
<tr>
<td>1984</td>
<td>59,622.50</td>
<td>12.27</td>
<td>534.8</td>
<td>-3.93</td>
<td>0.7649</td>
<td>5.63</td>
<td>39.6</td>
<td>70.69</td>
<td>47.5</td>
<td>33.05</td>
<td>0.2728</td>
<td>-11.69</td>
</tr>
<tr>
<td>1985</td>
<td>67,908.60</td>
<td>13.90</td>
<td>329.7</td>
<td>-38.35</td>
<td>0.8938</td>
<td>16.85</td>
<td>5.5</td>
<td>-86.11</td>
<td>47</td>
<td>-1.05</td>
<td>0.2766</td>
<td>1.39</td>
</tr>
</tbody>
</table>


**Note:**
- GDP = Gross Domestic Product,
- FDI = Foreign Direct Investment Inflow,
- EXR = Exchange Rate,
- INF = Inflation Rate,
- NRX = Natural Resources,
- DOP = Degree of Openness
From the table above, the percentage change of all the variables are stagnant. Starting with FDI, its inflows in Nigeria in 1971 was 162.83% and decreased in 1972 to -22.31%, 1973 - 22.43%, and in 1973 - -74.92%. It is evident that FDI inflows in Nigeria in 1975 increased tremendously to N475.40m consisting of 884.3% and it later dropped again in 1976 consisting of -90.3% decrease. Comparing this to the other variables, the change in percentage of GDP in 1971 is 25.94% but it later dropped in 1972 to 8.07%. It increased in 1973 to 20.08% and 1974 to 118.10% and dropped in 1975 to 14.09% but later increased in 1976 to 24.12%. The change in percentage of exchange rate in 1971 and 1972 had a negative sign of -2.63% and 5.41% respectively. In 1973, the percentage change in exchange rate recorded 0.00% but recorded an increase of -4.26% in 1974 and also a negative sign of -2.22% in 1975 but in 1976 it had an increase of 1.72%. Change in inflation rate in 1971 was 16.28%, it dropped drastically in 1872 to -78.38% but starting from 1973 it maintained an upward trend (1973 = 56.07%, 1974 = 134.63%, 1975 = 168.03%) and dropped in 1976 to -28.45%. In the case of natural resources, the figures starting from 1971 to 1980 are not available. The change in percentage of degree of openness in 1971 was 14.73%. This later dropped in 1972 to -5.44%. Then in 1973, it increased to 20.34% and it dropped drastically to -1.40% and increased a little to 0.62 in 1975 but in 1976, it maintained an increase of 10.85%.

Starting from 1977 to 1980, the change in percentage of GDP was in positive form but very unstable (1977 = 18.25%, 1978 = 9.58%, 1979 = 21.52%, 1980 = 18.24%). It dropped by -4.06% in 1981 and increased to 3.04% in 1982. This increase continued up to the end of the pre deregulated era in 1985 (1983 = 8.23%, 1984 = 12.27%, 1985 = 13.90%). The change in percentage of FDI in 1977 was 326.78%, but in 1978, it came down to 67.91%. In 1979, the change in percentage was in negative of (-12.63%). In 1980, it increased to 61.09% and came down again to -70.60%. In 1981, it increased heavily to 1083.47%, and dropped drastically in 1983 to 1985 (1983 = -65.74%, 1984 = -3.93%, 1985 = -38.35%). The change in percentage of exchange rate starting from 1977 to 1985 was very unstable. In 1977, it was 3.21%. In 1978, it came down to -6.28% and it was still in negative in 1979 and 1980 to -1.70% and -8.28% respectively. But starting from 1981 to 1985, the change in percentage was in positive but not stable (1981 = 11.64%, 1982 = 10.31%, 1983 = 7.61%, 1984 = 5.63%, 1985 = 2.78%).
inflation rate, in 1977, it was -37.90%, but in 1978, it increased by 46.11% and -14.79% in 1979 and 1980. 1981 witnessed a tremendous increase of 109.63% and later decrease to -63.19%. 1983 also witnessed a tremendous increase of 201.30% and later dropped to 70.69% in 1984. It also went further down to -86.11% in 1985. The natural resources in 1981 was -28.10% and it decreased to -3.31% in 1982. But in 1983, it increased by 22.26%. This further increased to 33.05% in 1984 and dropped in 1985. The change in percentage of degree of openness in 1977 was 4.64%, in 1978, it was -11.52%, but in 1979 - 1980, it increased by 5.54%, 7.54% and dropped by 6.82% in 1981. Starting from 1982 - 1984, the change in percentage maintained a downward trend (1982= -22.83%, 1983= -20.12%, 11.69%), at the end of the era, it increased to 1.39%.

However, the decline of FDI in 1972, 1973, 1974, 1976, 1979, 1984 and 1985 which ended the period of regulation may be as a result of combination of events and policies that were on ground. Some of the policies include the indigenization policy which was enacted in 1972. The indigenization policy which was enacted in 1972 entailed transfer of ownership to Nigerians and during the period of deregulation, the monetary policies which comprised of direct controls, interest rate, exchange rate, aggregate credit, and cash reserve requirement were highly regulated.

Then, the astronomical increase in FDI inflows in Nigeria in 1971 and 1975 may be linked to the dramatic rise in crude oil prices, which increased investment in the petroleum extractive industries. The figure 5 below is the diagrammatical representation of table 2.
Looking at the graph, and with the increase and decrease in the FDI which we have analysed above, the GDP remained on the increase starting from 1970 up to 1985. The exchange rate which was high in 1970 came down in 1971. It continued going down minimally until 1976. Then in 1977, it increased a bit and decreased again 1978 and later increased in 1984 and
Objective Two is to determine the causal factors of Foreign Direct Investment in a deregulated Nigerian economy. This objective tends to indentify the major determinants of Foreign Direct Investment in a deregulated Nigerian economy. The period in question covers from 1986 to 2010.
Table 3: Data on GDP, FDI, EXR INF NRX and DOP used for Deregulation (1986 - 2010) Analysis

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Note: GDP = Gross Domestic Product, FDI = Foreign Direct Investment Inflow, EXR = Exchange Rate, INF = Inflation Rate, NRX = Natural Resources, DOP = Degree of Openness
From the table above, it could be seen that in 1986, the FDI was N2,499.60m and change in percentage was 658.14%. In 1987 it was N680m showing a 73% decline. This may be as a result of restructuring that was on ground at that time. The natural resources was 31.8 representing -32.34% in 1986. The degree of openness of 0.2155 represented -22.07%. In 1986, inflation was reasonably okay at 5.40 which represented -1.82%, but in 1987 it increased by double and continued up to 1988 to (88.89%, 275.49%) then declined in 1989 by 6.79%. This further declined by -81.66% in 1989. There was astronomical increase of FDI inflows from 1990 to 1993 (1990= 5.67%, 1991= 289.40%, 1992= 357.37%, 1993= 299.00%). This increase can be linked to the dramatic rise in FDI inflows from emerging countries in Asia such as China, India, and Malaysia. Another reason was the rapid rise in crude oil prices which increased investment in the petroleum sector. There was a decline in 1994, but in 1995, it increased heavily by 1145.83% and declined by -94.39% in 1996. In 1997 and 1998, the change in percentage of FDI increased by 109.85% and 320.16% but dropped drastically in 1999 by -92.61%. The change in percentage of GDP in 1999 was positive of 17.93%. It further increased by 43.46% in the year 2000. At the same time the FDI in the same year witness a growth rate of 88.13%. The exchange rate in 2000 came down from 323.53% in 1999 to 10.15% in 2000. Inflation was 4.55%, while, natural resources was 43.87%. An interesting reason to note is that Nigeria is deemed to have been reaping the benefits of its turn to democracy, as the country seems to be achieving strong economic growth in recent times. Starting from 2002, Change in GDP in 2002 was 46.29%, then in 2003, it was 22.78%. This figure increased in 2004 to 34.45% and declined again 2005 by 27.70%. Looking again at the table, FDI in 2002 was high by 142.98%. It dropped by 59.12% in 2003. Then dropped drastically by 78% in 2010. The decline may be linked to global economic crises which affected the MNCs across the globe. However, the recent recovery from the global economic crises in 2010 is supposed to overturn the decline, but another problem in Nigeria FDI inflow is the issue of recent petroleum industry bill passed by the Nigerian legislative arm. UNCTAD (2011) report on this, is that petroleum bill requires a review of the tax exemptions previously granted to oil companies, increased government participation and also enforce local content directive for professional and management staff in an oil companies. Below is a diagrammatical representation of table 3.
Looking at the graphical representation, FDI is very unstable while exchange rate is on the increase. Exchange rate too climbs up and down and inflation that was low climbed up and later came down. The DOP was unstable too. At the same, the Natural resources were also very unstable.

Source: Researchers Computations
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<td>9073.04</td>
<td>-78.10</td>
<td>150.298</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Source: Central Bank of Nigeria Statistical Bulletin—(2010, 2011), Δ in % is by Authors calculation.

Note:
GDP = Gross Domestic Product
FDI = Foreign Direct Investment Inflow
EXR = Exchange Rate
INF = Inflation Rate
NRX = Natural Resources
DOP = Degree of Openness
Table 4 shows data for the FDI determinants for 41 years starting from 1970 ÷ 2010. In the overall period, the GDP maintained a steady growth while FDI inflows into Nigeria were stagnant. Also, exchange rate maintained reasonable increase at some point and stagnated at some point. In the case of inflation, it was never steady. The same applies to natural resources and the degree of openness.

Comparing data of the variables of pre-deregulation and that of deregulation, the FDI inflows into the country in the early years of pre-deregulated era maintained a positive increase in percentage and later declined. The same applies to total inflows of FDI into the country during the deregulated era. Looking at the GDP during the pre-deregulated era, it maintained steady increase from 1970 ÷ 1985. But in the deregulated era, GDP also maintained a steady increase from 1986 -2010. Looking at other variables, the exchange rate figures were never steady. This is the same with inflation rate figures and natural resources. The degree of openness figures maintained a steady increase up to 1973 and declined a little bit in 1974 and it later increased in 1975 and declined in 1978. But during the deregulated era, the degree of openness maintained a reasonable increase when compared to the period of pre-deregulation.

At the same time, inflation during pre-deregulation seems to be regulated but in the deregulated era, inflation rate was very high in 1989 at 40.9%. Then in 1992 at 44.5%, in 1993 at 57.2%, in 1995, it increased so high to 72.8%. The very high increase in 1995 may be as a result of new democracy in the country. Too much money was used for election that brought in the civilian administration into the country.

The natural resources data during the pre-deregulated era from 1970 - 1979 were not available. But in 1981, the change in percentage was in negative of 28.10% and it came down to -3.31% and went into positive of 22.26% in 1983. But in the year 1985 that ended the stiff regulation in the country, the change in percentage was -1.05%, but in 1986, which started the period of deregulation in the country, the change in percentage of natural resources was -32.34%. In 1987, it was in positive of 5.03%, Figure 7 is a diagrammatical representation of table 4.
Figure 7: GRAPHICAL PRESENTATION (ENTIRE PERIOD 1970-2010)

Source: Researcher’s Computation
PRESENTATION OF THE DATA USING HISTOGRAM

FOREIGN DIRECT INVESTMENT

- Series: FDI
- Sample: 1970-1985
- Observations: 16
- Mean: 370.1125
- Median: 304.7500
- Maximum: 1624.900
- Minimum: 46.3000
- Std. Dev.: 371.4364
- Skewness: 2.526156
- Kurtosis: 9.383948
- Jarque-Bera: 44.18711
- Probability: 0.000000

GROSS DOMESTIC PRODUCT

- Series: GDP
- Sample: 1970-1985
- Observations: 16
- Mean: 33106.19
- Median: 33030.20
- Maximum: 67908.60
- Minimum: 5281.10
- Std. Dev.: 20432.03
- Skewness: 0.034265
- Kurtosis: 1.743350
- Jarque-Bera: 1.055911
- Probability: 0.589810

EXCHANGE RATE

- Series: EUR
- Sample: 1970-1985
- Observations: 16
- Mean: 0.666144
- Median: 0.652250
- Maximum: 0.893900
- Minimum: 0.546400
- Std. Dev.: 0.081716
- Skewness: 1.310718
- Kurtosis: 4.864126
- Jarque-Bera: 6.947907
- Probability: 0.030994

INFLATION RATE

- Series: INF
- Sample: 1970-1985
- Observations: 16
- Mean: 16.55750
- Median: 14.42500
- Maximum: 39.60000
- Minimum: 3.460000
- Std. Dev.: 10.23859
- Skewness: 0.789900
- Kurtosis: 2.905486
- Jarque-Bera: 1.66924
- Probability: 0.43381

DEGREE OF OPENNESS

- Series: DO
- Sample: 1970-1985
- Observations: 16
- Mean: 0.387000
- Median: 0.401401
- Maximum: 0.501114
- Minimum: 0.272822
- Std. Dev.: 0.070285
- Skewness: -0.195694
- Kurtosis: 1.956357
- Jarque-Bera: 0.828250
- Probability: 0.660918

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DEREGULATED ERA (1986–2010)

FOREIGN DIRECT INVESTMENT

GROSS DOMESTIC PRODUCT

EXCHANGE RATE

INFLATION RATE

DEGREE OF OPENNESS

NATURAL RESOURCES

Series: GDP
Sample 1986–2010
Observations 25
Mean 7930993.
Median 2801973.
Maximum 29205783
Minimum 69147.00
Std. Dev. 9146223.
Skewness 1.163100
Kurtosis 2.941613
Jarque-Bera 5.640226
Probability 0.059599

Series: INF
Sample 1986–2010
Observations 25
Mean 2146960
Median 13.00000
Maximum 7280000
Minimum 5400000
Std. Dev. 19.031641
Skewness 1.361717
Kurtosis 3.696613
Jarque-Bera 8.175244
Probability 0.016779

Series: DCP
Sample 1986–2010
Observations 25
Mean 0.591641
Median 0.591641
Maximum 0.882360
Minimum 0.215544
Std. Dev. 0.136169
Skewness -0.568801
Kurtosis 3.946641
Jarque-Bera 2.281527
Probability 0.319575

Series: NRX
Sample 1986–2010
Observations 25
Mean 36.96000
Median 37.40000
Maximum 48.50000
Minimum 25.50000
Std. Dev. 5.292323
Skewness -0.017940
Kurtosis 2.388557
Jarque-Bera 0.390782
Probability 0.822513

Series: EXR
Sample 1986–2010
Observations 25
Mean 67.18646
Median 22.05110
Maximum 150.2890
Minimum 2.020600
Std. Dev. 57.70275
Skewness 0.182544
Kurtosis 1.264747
Jarque-Bera 5.406142
Probability 0.130242

Series: INF
Sample 1986–2010
Observations 25
Mean 16186.09
Median 8205.500
Maximum 54041.90
Minimum 439.4000
Std. Dev. 18072.86
Skewness 0.932718
Kurtosis 2.352609
Jarque-Bera 4.061421
Probability 0.131242

Series: DCP
Sample 1986–2010
Observations 25
Mean 0.581812
Median 0.591641
Maximum 0.882360
Minimum 0.215544
Std. Dev. 0.136169
Skewness -0.568801
Kurtosis 3.946641
Jarque-Bera 2.281527
Probability 0.319575

Series: NRX
Sample 1986–2010
Observations 25
Mean 36.96000
Median 37.40000
Maximum 48.50000
Minimum 25.50000
Std. Dev. 5.292323
Skewness -0.017940
Kurtosis 2.388557
Jarque-Bera 0.390782
Probability 0.822513

Series: EXR
Sample 1986–2010
Observations 25
Mean 67.18646
Median 22.05110
Maximum 150.2890
Minimum 2.020600
Std. Dev. 57.70275
Skewness 0.182544
Kurtosis 1.264747
Jarque-Bera 5.406142
Probability 0.130242

Series: INF
Sample 1986–2010
Observations 25
Mean 16186.09
Median 8205.500
Maximum 54041.90
Minimum 439.4000
Std. Dev. 18072.86
Skewness 0.932718
Kurtosis 2.352609
Jarque-Bera 4.061421
Probability 0.131242

Series: DCP
Sample 1986–2010
Observations 25
Mean 0.581812
Median 0.591641
Maximum 0.882360
Minimum 0.215544
Std. Dev. 0.136169
Skewness -0.568801
Kurtosis 3.946641
Jarque-Bera 2.281527
Probability 0.319575

Series: NRX
Sample 1986–2010
Observations 25
Mean 36.96000
Median 37.40000
Maximum 48.50000
Minimum 25.50000
Std. Dev. 5.292323
Skewness -0.017940
Kurtosis 2.388557
Jarque-Bera 0.390782
Probability 0.822513
**Gross Domestic Product (GDP)**

- **Series:** GDP
- **Sample:** 1970-2010
- **Observations:** 41
- **Mean:** 451963.3
- **Median:** 267550.0
- **Maximum:** 29205783
- **Minimum:** 5281.1
- **Std. Dev.:** 7962205.
- **Skewness:** 1.873676
- **Kurtosis:** 5.241669
- **Jarque-Bera:** 32.57403
- **Probability:** 0.000000

**Exchange Rate (EXR)**

- **Series:** EXR
- **Sample:** 1970-2010
- **Observations:** 41
- **Mean:** 41
- **Median:** 8.1
- **Maximum:** 15
- **Minimum:** 0.1
- **Std. Dev.:** 56
- **Skewness:** 0.1
- **Kurtosis:** 2.1
- **Jarque-Bera:** 7.1
- **Probability:** 0.0

**Inflation Rate (INF)**

- **Series:** INF
- **Sample:** 1970-2010
- **Observations:** 41
- **Mean:** 19.56488
- **Median:** 13.72000
- **Maximum:** 72.80000
- **Minimum:** 3.460000
- **Std. Dev.:** 16.20386
- **Skewness:** 1.599061
- **Kurtosis:** 4.955851
- **Jarque-Bera:** 24.00779
- **Probability:** 0.000006

**Degree of Openness (DOPI)**

- **Series:** DOPI
- **Sample:** 1970-2010
- **Observations:** 41
- **Mean:** 0.505788
- **Median:** 0.471165
- **Maximum:** 0.882360
- **Minimum:** 0.215544
- **Std. Dev.:** 0.149112
- **Skewness:** 0.187015
- **Kurtosis:** 2.480781
- **Jarque-Bera:** 0.699541
- **Probability:** 0.704850

**Natural Resources (NRX)**

- **Series:** NRX
- **Sample:** 1970-2010
- **Observations:** 31
- **Mean:** 37.27742
- **Median:** 37.40000
- **Maximum:** 48.50000
- **Minimum:** 25.50000
- **Std. Dev.:** 6.562302
- **Skewness:** 0.023554
- **Kurtosis:** 2.119318
- **Jarque-Bera:** 1.004685
- **Probability:** 0.605112
4.3: TEST OF RESEARCH HYPOTHESES

We follow five stages in our hypotheses Tests:

4.3.1 TEST OF HYPOTHESIS ONE

Stage 1: Restatement of hypothesis in null and alternate forms

Hypotheses one is restated as follows:

H₀: The Causal factors (Market size, Exchange rate, Inflation rate, Openness, Natural resources) are not foreign direct investment (FDI) determinants in a pre deregulated Nigerian Economy.

Hₐ: The Causal factors (Market size, Exchange rate, Inflation rate, Openness, Natural resources) are foreign direct investment (FDI) determinants in a pre deregulated Nigerian Economy.

Stage 2: Decision rules

Decision Rule 1: Accept null hypothesis if Prob. (F-statistic) is greater than 0.05 and reject null hypothesis if Prob. (F-statistic) is less than 0.05.

Decision Rule 2: Accept alternative hypothesis if Prob. (F-statistic) is less than 0.05 and reject alternative hypothesis if Prob. (F-statistic) is greater than 0.05.

Stage 3: Estimated Model Result for the Test.

Following estimation of the model, the following results shown in table 5 were got.

PRE-DEREGULATED

Table 5: OLS Regression (FDI & Determinants ï 1970 - 1985)

SUMMARY RESULTS OF ESTIMATION OF MODEL: LNFDI = f (LNGDP, LNEXR, LNINF, LNDOP)

Dependent Variable: LNFDI
Method: Least Squares
Date: 05/30/12   Time: 12:29
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-5.061544</td>
<td>4.289853</td>
<td>-1.179888</td>
<td>0.2629</td>
</tr>
<tr>
<td>LNGDP</td>
<td>0.462587</td>
<td>0.255361</td>
<td>1.811502</td>
<td>0.0974</td>
</tr>
<tr>
<td>LNEXR</td>
<td>-5.152818</td>
<td>3.434753</td>
<td>-1.500200</td>
<td>0.1617</td>
</tr>
<tr>
<td>LNINF</td>
<td>-0.125973</td>
<td>0.323110</td>
<td>-0.389876</td>
<td>0.7041</td>
</tr>
<tr>
<td>LNDOP</td>
<td>-4.240931</td>
<td>1.991821</td>
<td>-2.129173</td>
<td>0.0567</td>
</tr>
</tbody>
</table>

R-squared 0.418883  Mean dependent var 5.552744
Adjusted R-squared 0.2076  S.D. dependent var 0.905461
S.E. of regression 0.806029  Akaike info criterion 2.656914
Sum squared resid 7.146517  Schwarz criterion 2.898347
Log likelihood -16.25531  Hannan-Quinn criter. 2.669277
F-statistic 1.982267  Durbin-Watson stat 3.324409
Prob(F-statistic) 0.166905

Model Summary

LNFDI = - 5.061544 + 0.462587LNGDP - 5.152818LNEXR
       (t= -1.179888) (t= -1.811502) (t= -1.500200)
       0.125973LNINF - 4.240931LNDOP
       (t= -0.389876) (t= -2.129173)

R² = 0.4189
R² bar = 0.2076
F = 1.9823
Prob (F - Statistic) = 0.1669

Stage 4: Decision

Since the calculated P(F-statistic) = (0.1669), is greater than 0.05, we accept null hypothesis and accordingly reject the alternative hypothesis. Thus, causal factors (Market size, Exchange rate, Inflation Rate, Openness, Natural resources) are not foreign direct investment (FDI) determinants in deregulated Nigerian economy. In spite of this, market size show positive and significant impact on FDI while Exchange rate, Inflation Rate, Openness, Natural resources had negative impact on FDI.
(market size) is positive and significant (Prob (F - Statistic) = 0.1669). However, all other independent variables had negative impacts on the dependent variable as shown by the signs (negative) of their coefficients.

4.3.2 TEST OF HYPOTHESIS TWO

Stage 1: Restatement of hypothesis in null and alternate form

Hypotheses two is restated as follows:

H_0: The Causal factors (Market size, Exchange rate, Inflation Rate, Openness, Natural resources) are not foreign direct investment (FDI) determinants in deregulated Nigerian economy.

H_A: The Causal factors (Market size, Exchange rate, Inflation Rate, Openness, Natural resources) are foreign direct investment (FDI) determinants in deregulated Nigerian economy.

Stage 2: Decision rules

Decision Rule 1: Accept null hypothesis if Prob. (F-statistic) is greater than 0.05 and reject null hypothesis if Prob. (F-statistic) is less than 0.05

Decision Rule 2: Accept alternative hypothesis if Prob. (F-statistic) is less than 0.05 and reject alternative hypothesis if Prob. (F-statistic) is greater than 0.05

Stage 3: Estimated Model Result for the Test.

Following estimation of the model, the following results shown in table 6 were got.

DEREGULATED

Table 6: OLS Regression (FDI & All Determinants)

SUMMARY RESULTS OF ESTIMATION OF MODEL: LNFDI = f (LNGDP, LNEXR, LNINF, LNDOP, LNNRX).

Dependent Variable: LNFDI
Method: Least Squares
Date: 05/30/12  Time: 12:41
Sample: 1986 – 2010
Included observations: 25

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-9.862241</td>
<td>8.140892</td>
<td>-1.211445</td>
<td>0.2406</td>
</tr>
<tr>
<td>LNGDP</td>
<td>1.317705</td>
<td>0.407839</td>
<td>3.230946</td>
<td>0.0044</td>
</tr>
<tr>
<td>LNEXR</td>
<td>-0.860670</td>
<td>0.536134</td>
<td>-1.605324</td>
<td>0.1249</td>
</tr>
<tr>
<td>LNINF</td>
<td>0.592441</td>
<td>0.291726</td>
<td>2.030813</td>
<td>0.0565</td>
</tr>
<tr>
<td>LNDOP</td>
<td>-1.135705</td>
<td>1.016817</td>
<td>-1.116922</td>
<td>0.2780</td>
</tr>
<tr>
<td>LNNRX</td>
<td>0.054336</td>
<td>1.395435</td>
<td>0.038939</td>
<td>0.9693</td>
</tr>
</tbody>
</table>

R-squared    0.650492  Mean dependent var 8.831091
Adjusted R-squared 0.558516  S.D. dependent var 1.522180
S.E. of regression 1.011401  Akaike info criterion 3.066113
S.D. dependent var 1.522180  Schwarz criterion 3.558643
Sum squared resid 19.43570  Hannan-Quinn criter. 3.147248
Log likelihood -32.32641  Durbin-Watson stat 1.847118
Prob(F-statistic) 0.000690

Source: E-View Computer Results.

**Model Summary**

\[ \ln\text{FDI} = -9.862241 + 1.317705\ln\text{GDP} + 0.592441\ln\text{EXR} + 0.054336\ln\text{NRX} \]

\[ (t=-1.211445)(t=3.230946) (t=-1.605325) (t=2.030813) \]

\[ \ln\text{FDI} = 1.135705\ln\text{DOP} + 0.054336\ln\text{NRX} \]

\[ (t=-1.116922) (t=0.038939) \]

\[ R^2 = 0.650492 \]

\[ R^2_f = 0.558516 \]

\[ F = 7.072431 \]

\[ \text{Prob (F - Statistic)} = 0.000690 \]

**Stage 4: Decision**

Since the calculated \( \text{P(F-statistic)} = (0.000690) \), is less than 0.05, we reject null hypothesis and accordingly accept the alternative hypothesis. Thus, causal factors (Market size, Exchange rate, Inflation Rate, Openness, Natural resources) are foreign direct investment (FDI) determinants in deregulated Nigerian economy. Market size, Inflation Rate and natural resources had positive impact on FDI while Exchange Rate and Degree of Openness had negative and insignificant impact on FDI. The negative impact of degree of openness on FDI shows that the economy was still regulated to some extent.
The results above show that Market Size had positive and significant impact on FDI while inflation had positive and non-significant impact on FDI. Then, Exchange Rate and Degree of Openness had negative and insignificant impact on FDI while Natural Resources had positive and non-significant impact on FDI (coefficient of Market Size = 1.3177, \( t = 3.2309 \), \( P = 0.004 \); coefficient of Exchange Rate = -0.8606, \( t = -1.6053 \), \( P = 0.1249 \); coefficient of Inflation Rate = 0.5924, \( t = 2.0308 \), \( P = 0.0565 \); coefficient of Degree of Openness = -1.1357, \( t = -1.1169 \), \( P = 0.2780 \); coefficient of Natural Resources = 0.0543, \( t = 0.0389 \), \( P = 0.9693 \)).

4.3.3 TEST OF HYPOTHESIS THREE

Stage 1: Restatement of hypothesis of hypothesis in null and alternate form

Hypotheses three is restated as follows:

- **H\(_0\)**: There is no causal relationship between the growth of Nigerian Economy and foreign direct investment (FDI) within the pre deregulation era.
- **H\(_A\)**: There is causal relationship between the growth of Nigerian Economy and foreign direct investment (FDI) within the pre deregulation era.

Stage 2: Decision rules

- Decision Rule 1: Accept null hypothesis if Prob. (F-statistic) is greater than 0.05 and reject null hypothesis if Prob. (F-statistic) is less than 0.05
- Decision Rule 2: Accept alternative hypothesis if Prob. (F-statistic) is < 0.05 and reject alternative hypothesis if Prob. (F-statistic) is greater than 0.05

Stage 3: Estimated Model Result for the Test

Following estimation of the model, the following results shown in table7 were got.

**Table 7: OLS Regression: PRE-DEREGULATED**

**SUMMARY RESULTS OF ESTIMATION OF MODEL: LNGDP = f (LNFDI).**

- Dependent Variable: LNGDP
- Method: Least Squares
\[ \text{LNGDP} = 8.195327 + 0.349375 \times \text{LNFDI} \]

\[ (t = 6.190107) \quad (t = 1.483467) \]

\[ R^2 = 0.074113 \]
\[ F = 2.200674 \]
\[ \text{Prob (F-Statistic)} = 0.160112 \]

**Stage 4: Decision**

Since the calculated \( P(F\text{-statistic}) = 0.160112 \) is greater than 0.05, we accept null hypothesis and accordingly reject the alternative hypothesis.

**Stage 5: Conclusion**

There was a positive causal relationship between the growth of Nigerian Economy and Foreign Direct Investment (FDI) within the pre deregulated era with coefficient of correlation of 0.6564, \( P = 1601 \). Also, the regression coefficient (FDI) is not statistically significant since the probability value is greater than the 5% level of significance.

4.3.4 TEST OF HYPOTHESIS FOUR

Stage 1: Restatement of hypothesis in null and alternate form

Hypotheses four is restated as follows:
There is no bi-directional relationship between growth of the Nigerian economy and foreign direct investment (FDI) within the deregulated era.

\[ H_0: \text{There is bi-directional relationship between growth of the Nigerian economy and foreign direct investment (FDI) within the deregulated era.} \]

**Stage 2: Decision rules**

Decision Rule 1: Accept null hypothesis if F-statistic is less than Prob. Value and reject null hypothesis if F-statistic is greater than Prob. Value.

Decision Rule 2: Accept alternative hypothesis if F-statistic is greater than Prob. Value and reject alternative hypothesis if F-statistic is less than Prob. Value.

**Stage 3: Estimated Model Result for the Test.**

Following estimation of the model, the following results shown in table 8 were got

**Table 8: Granger Causality**

**SUMMARY RESULTS OF ESTIMATION OF MODEL:(FDI & GDP).**

<table>
<thead>
<tr>
<th>Null Hypothesis:</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP does not Granger Cause FDI</td>
<td>23</td>
<td>3.45546</td>
<td>0.0537</td>
</tr>
<tr>
<td>FDI does not Granger Cause GDP</td>
<td></td>
<td>0.60561</td>
<td>0.5565</td>
</tr>
</tbody>
</table>

Source: Computer Results.

**Stage 4: Decision**

From the table above, the two null hypotheses can be rejected because the F-statistic values are greater than the probability values. Hence, we accept the alternative hypothesis.

**Stage 5: Conclusion**

There was bi-directional relationship between growth of the Nigerian economy and Foreign Direct Investment (FDI) within the deregulated era (F statistic = 3.4554 > P = 0.0537). The test results implies that gross domestic product granger caused foreign direct investment into...
4.3.5. ROBUSTNESS TEST

The multiple regression analysis for the entire period was used as measure of robustness to test the impact of foreign direct investment determinants in the Nigerian economy. Below is the result of the multiple regression analysis of the entire period.

4.3.6. MULTIPLE REGRESSION ANALYSIS (ENTIRE PERIOD)

Estimated Model Result for the Test.

Following estimation of the model, the following results shown in table 9 were got.

Table 9: OLS Regression (FDI & Determinants)

| SUMMARİY RESULTS OF ESTIMATION OF MODEL: LNFDI = f (LNGDP, LNEXR, LNINF, LNDOP). |
| Dependent Variable: LNFDI |
| Method: Least Squares |
| Date: 05/30/12 Time: 12:14 | |
| Sample: 1970 – 2010 Included observations: 39 |

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-1.425055</td>
<td>2.736845</td>
<td>-0.520693</td>
<td>0.6060</td>
</tr>
<tr>
<td>LNGDP</td>
<td>0.552286</td>
<td>0.229401</td>
<td>2.407512</td>
<td>0.0216</td>
</tr>
<tr>
<td>LNEXR</td>
<td>0.228697</td>
<td>0.278887</td>
<td>0.820033</td>
<td>0.4179</td>
</tr>
<tr>
<td>LNINF</td>
<td>0.327417</td>
<td>0.229597</td>
<td>1.426053</td>
<td>0.1630</td>
</tr>
<tr>
<td>LNDOP</td>
<td>-0.793471</td>
<td>0.735072</td>
<td>-1.079446</td>
<td>0.2880</td>
</tr>
</tbody>
</table>

| R-squared | 0.800109 | Mean dependent var | 7.625519 |
| Adjusted R-squared | 0.776593 | S.D. dependent var | 2.105175 |
| S.E. of regression | 0.995032 | Akaike info criterion | 2.947125 |
| Sum squared resid | 33.66300 | Schwarz criterion | 3.160402 |
| Log likelihood | -52.46894 | Hannan-Quinn criter. | 3.023647 |
| F-statistic | 34.02322 | Durbin-Watson stat | 2.118528 |
| Prob(F-statistic) | 0.000000 | |

Source: Computer Results.

Model Summary

LNFDI = - 1.425055 + 0.552286LNGDP + 0.228697LNEXR + 0.327417LNINF – 0.793471LNDOP
Model Interpretation:
The determinants contribute about 80% of the total variations in the foreign direct investment inflow into the Nigerian economy.

The Prob. (F-Statistic) (0.00) indicates that there is significant relationship between the foreign direct investments and the determinants.

4.3.7. CORRELATIONS RESULTS

Table 10: Correlation between FDI and Determinants

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>DOP</th>
<th>NRX</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>1.00</td>
<td>0.66</td>
<td>0.52</td>
<td>0.11</td>
<td>0.43</td>
<td>-0.13</td>
</tr>
<tr>
<td>GDP</td>
<td>0.66</td>
<td>1.00</td>
<td>0.85</td>
<td>-0.30</td>
<td>0.32</td>
<td>-0.25</td>
</tr>
<tr>
<td>EXR</td>
<td>0.52</td>
<td>0.85</td>
<td>1.00</td>
<td>-0.33</td>
<td>0.41</td>
<td>-0.19</td>
</tr>
<tr>
<td>INF</td>
<td>0.11</td>
<td>-0.30</td>
<td>-0.33</td>
<td>1.00</td>
<td>0.10</td>
<td>0.23</td>
</tr>
<tr>
<td>DOP</td>
<td>0.43</td>
<td>0.32</td>
<td>0.41</td>
<td>0.10</td>
<td>1.00</td>
<td>0.07</td>
</tr>
<tr>
<td>NRX</td>
<td>-0.13</td>
<td>-0.25</td>
<td>-0.19</td>
<td>0.23</td>
<td>0.07</td>
<td>1.00</td>
</tr>
</tbody>
</table>

The table 10 above reveals that there is strong positive relationship between the foreign direct investment (FDI) and the Nigerian economic growth (GDP) but a weak positive relationship between foreign direct investment and the degree of openness (DOP) while there is a weak negative relationship between foreign direct investments and natural resources (NRX).

4.4 COMPARISON OF OBJECTIVES WITH RESULTS

In line with the objectives stated in this study, the following are the implication of the results of this study.
To determine the causal factors of foreign direct investment in a pre deregulated Nigeria Economy

In a pre deregulated Nigerian economy, three potential determinants (Exchange Rate, Inflation Rate and Degree of Openness) had negative and non-significant impact on Foreign Direct Investment in the Nigerian Economy. This is in line with Elija and festus (2008), Akinkugbu (2003), Addison and Heshmate (2003) and Yang, et. al.(2000) where negative and non-significant results were found. The Market Size that had a positive and significant impact on FDI is in line with the results of (Soumyanada 2010), (Yuko and Nauro 2002), Beatrice and Adolf (2004), Asiedu, (2002, 2006) Obadan (1982); Chakrabarti (2001); Masayuki and Ivobasina (2005); Balasubramanyam et. al (1996) and (1999), Baliamoune (2002), Boreszterim et al (1998) and Obida and Abu (2010) where Positive and significant effects were found, this result is contrary to the findings of Soumyananda (2009), Elija and festus (2008), Akinkugbu (2003), Addison and Heshmate (2003) and Yang, et. al.(2000) where non-significant effects was recorded. But the exchange rate result is in line with Cushman (1988) and Klein and Rosengren (1994) who found host exchange rate appreciation to have a negative effect on FDI. Since Market Size had a positive and significant impact on Foreign Direct Investment, there is every possibility that there would be a continuous increase and growth of the nation’s Gross Domestic Product and at the same time foreign investors would be attracted when they are sure of large market for their product. To achieve this, government should create an enabling environment for production activities in the country.

4.4.2 Objective Two:

To determine the causal factors of foreign direct investment in a deregulated Nigerian Economy

One FDI determinant (Market Size) in a deregulated Nigerian economy had positive and significant impact on Foreign Direct Investment in the Nigeria economy. This implies that the deregulation that started in 1986 up to 2010 in the country had a positive effect to FDI
Inflows. This result is the same with result of Market Size, in pre deregulated era. Also, Inflation Rate had a positive effect on FDI during the deregulated era. The negative and non-significant impact of Exchange Rate on FDI implies that macroeconomic stability is not an important determinant of FDI inflows to Nigeria. Inflation had positive and non-significant impact on FDI. This implies that a highly volatile currency would discourage foreign investors to engage in FDI in Nigeria. This is in line with the results of Alan and Saul (2004), In Obida, and Abu (2010); Elija and Festus 2008; Akinkugbu (2003), Dar, Presley and Malik (2004), Elija (2006); Goldberg and Kolstad (1994) where exchange rate affects FDI negatively. Masayki and Ivohasinam (2005), and Goldberg and Kolstad (1994). But the negative and non-significant result of openness of the economy to FDI on the other hand implies that the Nigerian economy were less open to foreign investment during the deregulated era. This result is contrary to the result of LVNa and Lightfoot (2006), Andre’ 2008; Bénassy-Quéré et al (1999); Botrí and Škuflic (2006); Greenaway et al (2007); Hakro and Ghumro (2997); Onyeiwu and Shrestha (2004)) where positive result was found on degree of openness in the country. While One determinant (Natural Resources) had positive and non-significant impact on Foreign Direct Investment. The positive role of natural resource is in line with Soumyananda (2009) and this reflects the situation in the Nigeria’s oil sector that has continued to attract more foreign investment. It suggests that government should create more conducive investment environment through socio-political and economic stability in the country.

4.4.3 Objectives Three:
To ascertain whether there is a causal relationship between the growth of the Nigerian Economy and FDI within the pre-deregulated Era.

There was a positive causal relationship between the growth of Nigerian Economy and Foreign Direct Investment (FDI) within the pre deregulated era which signifies that there is causality between GDP and FDI. In other words, there is a one way relationship between FDI and GDP and the direction of this relationship is from GDP to FDI. This implies that GDP in Nigeria is one of the factors affecting the flow of FDI. (Coefficient of correlation = 0.6564, P = 0.1601). Also, the regression coefficient (FDI) is not statistically significant since the probability value is greater than the 5% level of significance. This finding is in line

4.4.4 Objective Four:
To determine whether there was bidirectional causal relationship between growth in the Nigerian Economy and FDI with the deregulated era.

There was bi-directional relationship between growth of the Nigerian economy and Foreign Direct Investment (FDI) within the deregulated era (F statistic = 3.4554 > P = 0.0537). The test results implies that gross domestic product granger cause foreign direct investment into the Nigerian economy during the deregulated era and foreign direct investment also granger cause economic growth.
References


Obadan, M.I (1982), “direct foreign investment in Nigeria; An empirical analysis, African review xxv(i), March


CHAPTER FIVE
CONCLUSION, AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

Findings emanating from this study are as follows:

(i) Three FDI determinants (Exchange Rate, Inflation Rate and Degree of Openness) in a pre-deregulated Nigerian Economy had negative and non-significant impact on Foreign Direct Investment in the Nigerian Economy while Market Size had a positive and significant impact on Foreign Direct Investment.

(ii) One FDI determinant (Market Size) in a deregulated Nigeria Economy had positive and significant impact on Foreign Direct Investment in the Nigerian Economy, then, Inflation rate had positive and non-significant impact on Foreign Direct Investment. Two FDI determinants (Exchange Rate and Degree of Openness) had negative and non-significant impact on Foreign Direct Investment while One determinant (Natural Resources) had positive and non-significant impact on Foreign Direct Investment.

(iii) There was a positive causal relationship between the growth of the Nigerian Economy and Foreign Direct Investment (FDI) within the pre deregulation era.

(iv) There was bi-directional relationship between growth of the Nigerian economy and Foreign Direct Investment (FDI) within the deregulated era.

(v) From the robustness test carried out in this study, the multiple regression analysis test ran on the FDI determinants for the entire period starting from 1970 to 2010 shows that the determinants contributed about 80% of the total variations in the foreign direct investment inflow into the Nigerian economy. Also the Prob. (F-Statistic) (0.00) indicates that there is significant relationship between the foreign direct investments and the determinants. The estimated model revealed that an increase in the GDP and INF will increase the foreign direct investment at an
and 32% respectively while decrease change in the EXR will decrease the foreign direct investment by 583.6481 and 11200.15 units respectively. This implies that a positive relationship exist between the FDI and two of the determinants (GDP & INF) while there is a negative relationship between FDI and the other two determinants (EXR & DOP).

(vi) Finally, based on the correlations results, the correlation between FDI and its determinants as reveals from the results indicates that there is strong positive relationship between the foreign direct investment (FDI) and the Nigerian economic growth (GDP) but a weak positive relationship between foreign direct investment and the degree of openness (DOP). While there is a weak negative relationship between foreign direct investments and natural resources (NRX).

5.2 POLICY IMPLICATIONS OF THE FINDINGS
This study has examined the determinants of FDI to Nigeria. Results confirmed previous evidence obtained by a number of writers on the FDI determinants in the Nigerian economy. The findings of this study signify first: that the variables used for this study are the major determinants of FDI in the Nigerian economy yet Nigeria still suffers from its relatively poor record of FDI inflow compared with that of other emerging economies in the world. So it is important for Nigeria to take necessary steps to attract additional foreign investments in Nigeria by making the business environment friendly for investors. With respect to the policy on free trade zones in the country, it is expected that it will create a surge in foreign investments. Government should review the acts which established the Free Trade Zones. The proposed bill before the National Assembly on this act should be speedily passed to make it suitable for the new environment. Government has to liberalize the operations to encourage private sectors' participation in the Free Trade Zones. That is a way of increasing the market size, improved exchange rate, reduced inflation, greater participation and openness.
Secondly, without any doubt, FDI brings technical know-how for a developing country, but we only to exploit the cheap labour or natural resources of our country. All forms of FDI are expected to create employment opportunities in Nigeria if competent and appropriate professionals are engaged in negotiating with the foreign investors on behalf of government. In order words, there is need for a collaboration of policy experts and other professional experts that are grounded, credible and has the interest of Nigeria at heart to be used in negotiating any form of FDI; be it in Power, Agriculture, ICT, Oil and Gas, Tourism, Banking, Transport, Mining, etc. This will control capital flight issues because there will be opportunities for re-investment, and it will ensure that the target for which the investment is intended for is achieved.

Thirdly, Nigeria should maintain a high and sustainable growth patterns to attract more foreign investment in the country. The ministry of Trade and Investment should strengthen our investment policy and make Nigeria very strong in World Trade Organization. There should be conscious effort by government to ensure that the ministry of Trade and Investment collaborates with our foreign policy designers and local content developers to enable free flow of investments.

Fourthly, Nigeria can attract greater FDI inflows by removing artificial barriers and controls on exports and imports. An open and export oriented policy can be promoted by lowering tariffs and allowing the free flow of capital. Our tax system and other sundry duties must be gotten right. Our institutions must be strong and efficient. There must be consistent and reliable policies. Government must deal with her security issues. Our democracy must be taken to have come to stay and all our political parties must as a matter of urgency deal with issues of internal democracy. Our leaders must automate their processes for transparency and public accountability so that the issues of corruption can be dealt with. Attitudinal change cannot be achieved without providing all these infrastructure and strengthening our institutions.

As these investors establish their businesses and stabilize their stay in Nigeria, there must be a direct relationship between Nigerian Academics and researchers with the industry.
Government and industries should make grants available for academics and researchers and in turn commercialize the products of these researches. With this, sustainability of the investments and global competition is guaranteed.

In our study, we found a positive relationship between FDI and growth. Some studies also found that there are relationships between FDI and growth. (De Gregorio, 1992). In some studies, authors concluded that FDI enhances growth only under certain conditions - that education exceeds a certain threshold (Borensztein et al., 1998); when a country has achieved a certain level of income (Blomstrom et al., 1994); when a country is open (Balasubramanyam et al., 1996); when domestic and foreign capital are complements de Mello, (1999); and also when a host country has a well developed financial sector. (Alfred el al., 2004).

5.3 MAJOR CONTRIBUTION OF THE OUTCOMES OF THE STUDY TO KNOWLEDGE

This research has contributed to knowledge in various ways.

1. The study has contributed to knowledge by providing vital information on FDI determinants to guide our leaders in government in decision making and also to future researchers in their study of FDI in Nigeria.

2. The study employed modified version of Soumyanada (2009; 2010); Yuko and Nauro (2002); Beatrice and Adolf (2004); Ben-Taber and Giorgioni (2007); Rojid, et.al.(2005); Alan and Saul (2004), Omankhanlen (2011) model in analysis of the Nigerian situation.

3. Finally, this study has provided new study evidence and also added to the enrichment of literature as regards the analysis on the FDI determinants in Nigeria both in the pre and deregulated era.
CONCLUSION

This study has made an attempt to examine the Foreign Direct Investment determinants in pre and deregulated Nigerian economy and discovered that all the variables used for the analysis in pre and post deregulated Nigerian economy produced good results. Despite the limitation of the data used, especially the natural resources data, the results are robust as to the determinants of FDI in Nigeria which comprises of Market size, Exchange rate, Inflation Rate, Openness, and Natural resources.

This study focused on the period 1970 – 2010 and made use of a time series data obtained from the CBN, Federal Office of Statistics and World Bank. Some Statistical methods were used for the analysis and they include the following: Ordinary Least Square, Unit root, Cointegration, and Granger causality. The result arising from the use of the statistical methods revealed that the FDI determinants in pre and post deregulated Nigerian economy from the variables used are the same. And also for the causality between FDI and growth in the country, the result shows that there is causal relationship between the growth of Nigerian Economy and foreign direct investment (FDI) which implies that the growth in the country is partly from the investment of foreign investors.

The significance of FDI in our economy and the low level and fluctuation of FDI to Nigeria at the moment signifies that some aspect of the economy needs to be looked into and also worked upon by our government. This is because of the findings of this study which would go a long way in bridging the existing information gap as to the determinants of FDI in the country. In effect, countries have recently begun to pursue targeted policies towards attracting foreign direct investment. Evidence that countries might want to target certain sectors need to be weighed against bureaucratic costs and increased potential for the corruption of differential schemes. This study will enable policy makers to plan and formulate both short and long term policies that would be beneficial for Nigeria in attracting foreign investment.

The government should intensify the trade liberalization policy which was initiated under the structural adjustment programme in 1986, so as to increase the openness of the economy
should be cautious about political crises and social unrest that discourages foreign investment. At the same time, FDI is explained by trade openness, but, in general, it is trade which leads to FDI instead of the other way around. This indicates that Nigeria is a very important market, and investing in Nigeria is part of any firm’s global strategy.

5.5 RECOMMENDATIONS

Based on our findings and conclusions from our study, the following recommendations were made and they include:

1. The positive result of market size variable (GDP) implies that GDP in Nigeria is one of the factors affecting the flow of FDI both in pre and deregulated Nigerian economy. Since an increasing level of GDP which implies that macroeconomic stability is an important determinant of FDI inflow to Nigeria. The Nigerian government should take a bold step in the issue of efficient fiscal policies that would encourage the international spread of ideas so as to open the economy to the world and create more attractions of foreign direct investment. And in doing this, government should promote fiscal policies that specially enhance the domestic capacity of its citizens by aiming at attracting specific types of FDI that are able to generate spillover effects in the overall economy. Here, the Nigerian government policy on FDI should focus on employing promotional resources to attract a subset of FDI flows rather than FDI in general. Mwilima (2003) asserts that FDI has been more productive in Asia especially in China, Taiwan, and South Korea than other developing countries because of the targeted approach which involves screening of investment applications and granting differential incentives to different firms and even prohibited some types of investment.

2. The positive role of natural resources attracts foreign direct investment in the country. In respect of this, there is a strong need for improvement in the nation’s business environment in order to attract more resource-seeking foreign investors by consciously curbing corruption through intensified and improved efforts of the anti-
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mic and Financial Crimes Commission (EFCC), and the
Independent Corrupt Practices Commission (ICPC). These agencies should do their
job to convince the international communities and nationals that Nigeria is a safe
place to do business. This would definitely increase Nigeria export of goods.

3. In respect of the results of inflation in this study, both in pre and deregulated era, the
Nigerian government should also come up with the monetary policies that control
excess money in the economy. There is need for government to improve on the close
monitoring of the macroeconomic indices such as price level and interest rate. The
close monitoring of these macroeconomic indices would help to reduce the
inflationary pressure in the economy.

4. In as much as our FDI helps in boasting growth, care must be taken not to allow FDI
displace indigenous industrial development in the country. Government target
always should be to achieve indigenous industrial revolution. From our result, the
degree of openness had a negative impact on trade; the Nigeria government should
try to liberalize trade by strengthening Nigerians comparative advantage especially
in labour intensive sectors. It is likely to deepen Nigerian’s integration in the
international segmentation of production process, and at the same time concentrating
on its specialization in labour intensive stages of production while diversifying its
export capacities towards more technologically advanced products. The liberalization
policies needed should also have to correspond with the improvement of basic
infrastructure, do away with the protectionist sentiment, and instituting
macroeconomic stability by strictly adhering to its structural transformation. The
structuring transformation should be geared towards transportation and energy, for
these two make up the largest part of indirect costs for businesses. This is essential to
reducing the transaction cost in producing goods and services in the country.

5. Though the high exchange rate in the country which is suppose to attract foreign
investors is not favourable for growth in the country, our result still shows negative
and non-significant impact on FDI. The result on exchange rate implies that a highly
6. Finally, there is need for guided training and integration of the human resource of the country. This is to enable citizenry acquire skill; education and exposure that would enable them contribute positively to economic growth wherever they find themselves employed either with the foreign or domestic firms and whichever sector they are in.

7. A limitation of this study is that we do not have complete data on natural resources endowments in the country. And this affected our work on the pre deregulated era of our analysis. The facts reviewed in this study reviewed natural resources endowments as an important determinant of FDI inflow in Nigeria hence; Efforts should be made by government and its agencies to ensure that updated data are available for further research.

5.6 RECOMMENDATIONS FOR FURTHER STUDIES
The following are recommendations for further studies;

1. Aside the six determinants of foreign direct investment inflow used for analysis in this study, there are other determinants such as development of the regulatory framework and economic policy coherence, infrastructural indicators and investment incentives, thus this study recommendation for further studies is that all these determinants of foreign direct investment inflows in Nigeria should be incorporated for wider discussion on FDI determinants.

2. The scope of this study was for the period 1970-2010 broken into two periods (ie pre deregulated era from 1970 -1985 and deregulated era from 1986 - 2010). For further studies, it is strongly recommended that the scope be expanded to start from 1960.
states in Nigeria, for proper analysis of FDI determinants in the country, it would be interesting for further study of FDI determinants in Nigeria to focus on what attracts FDI in each of the states in the country.
References


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APPENDIX 1

SUMMARY STATISTICS

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>DOP</th>
<th>NRX</th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>13112.75</td>
<td>5971026.</td>
<td>54.31850</td>
<td>20.77774</td>
<td>0.540665</td>
<td>37.27742</td>
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<tr>
<td>Median</td>
<td>3377.000</td>
<td>1933212.</td>
<td>21.88610</td>
<td>13.00000</td>
<td>0.577494</td>
<td>37.40000</td>
</tr>
<tr>
<td>Maximum</td>
<td>54041.90</td>
<td>29205783</td>
<td>150.2980</td>
<td>72.80000</td>
<td>0.882360</td>
<td>48.50000</td>
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<tr>
<td>Minimum</td>
<td>-464.3000</td>
<td>47619.70</td>
<td>0.546400</td>
<td>5.400000</td>
<td>0.215544</td>
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<tr>
<td>Std. Dev.</td>
<td>464.3000</td>
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<td>1.435349</td>
<td>4.024017</td>
<td>2.670473</td>
<td>2.119318</td>
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</table>

<table>
<thead>
<tr>
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<th>Jarque-Bera</th>
<th>Probability</th>
<th>Sum</th>
<th>Sum Sq. Dev.</th>
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<tbody>
<tr>
<td>Mean</td>
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<td>0.020753</td>
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<tr>
<td>Median</td>
<td>11.75662</td>
<td>0.002800</td>
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<td>Maximum</td>
<td>4.501644</td>
<td>0.002836</td>
<td>1683.874</td>
<td>101381.7</td>
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<tr>
<td>Minimum</td>
<td>11.73069</td>
<td>0.751321</td>
<td>644.1100</td>
<td>9586.926</td>
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<tr>
<td>Std. Dev.</td>
<td>4.501644</td>
<td>0.712893</td>
<td>16.76060</td>
<td>0.712893</td>
</tr>
<tr>
<td>Mean</td>
<td>1.004685</td>
<td>0.605112</td>
<td>1155.600</td>
<td>1291.914</td>
</tr>
</tbody>
</table>

UNIT ROOT TEST RESULTS

FOREIGN DIRECT INVESTMENT (Level)

Null Hypothesis: FDI has a unit root
Exogenous: None
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

<table>
<thead>
<tr>
<th></th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
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<tbody>
<tr>
<td>Augmented Dickey-Fuller test statistic</td>
<td>-1.228264</td>
<td>0.1975</td>
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<tr>
<td>Test critical values:</td>
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<tr>
<td>1% level</td>
<td>-2.625606</td>
<td></td>
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<tr>
<td>5% level</td>
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<tr>
<td>10% level</td>
<td>-1.611593</td>
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</table>


Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI)
Method: Least Squares
Date: 05/30/12   Time: 11:58
Sample (adjusted): 1972 2010
Included observations: 39 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
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<td>FDI(-1)</td>
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<td>0.2271</td>
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<td>D(FDI(-1))</td>
<td>-0.448309</td>
<td>0.166036</td>
<td>-2.700070</td>
<td>0.0104</td>
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</tbody>
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R-squared 0.280890  Mean dependent var 224.4472
Adjusted R-squared 0.261454  S.D. dependent var 14637.41
S.E. of regression 12579.19  Akaike info criterion 21.76740
Sum squared resid 5.85E+09  Schwarz criterion 21.85271
Log likelihood -422.4642  Hannan-Quinn criter. 21.79801
FOREIGN DIRECT INVESTMENT (First Difference)

Null Hypothesis: D(FDI) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

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<tr>
<td>Augmented Dickey-Fuller test statistic</td>
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Test critical values:
- 1% level: -2.625606
- 5% level: -1.949609
- 10% level: -1.611593


Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI,2)
Method: Least Squares
Date: 05/30/12  Time: 12:02
Sample (adjusted): 1972 2010
Included observations: 39 after adjustments

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<tr>
<th>Variable</th>
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<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<tr>
<td>D(FDI(-1))</td>
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<tr>
<td>R-squared</td>
<td>0.733233</td>
<td>Mean dependent var</td>
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<tr>
<td>Adjusted R-squared</td>
<td>0.733233</td>
<td>S.D. dependent var</td>
<td>24517.36</td>
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<tr>
<td>S.E. of regression</td>
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<td>Akaike info criterion</td>
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<tr>
<td>Sum squared resid</td>
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<td>Log likelihood</td>
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<td>Hannan-Quinn criter.</td>
<td>21.77138</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.849227</td>
<td></td>
<td></td>
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GROSS DOMESTIC PRODUCT (Level)

Null Hypothesis: GDP has a unit root
Exogenous: None
Lag Length: 7 (Automatic - based on SIC, maxlag=9)

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<td>Augmented Dickey-Fuller test statistic</td>
<td>3.558316</td>
<td>0.9998</td>
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Test critical values:
- 1% level: -2.636901
- 5% level: -1.951332
- 10% level: -1.610747

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP)
Method: Least Squares
Date: 05/30/12   Time: 12:03
Sample (adjusted): 1978 2010
Included observations: 33 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP(-1)</td>
<td>0.921936</td>
<td>0.259093</td>
<td>3.558316</td>
<td>0.0015</td>
</tr>
<tr>
<td>D(GDP(-1))</td>
<td>-0.659709</td>
<td>0.338562</td>
<td>-1.948561</td>
<td>0.0627</td>
</tr>
<tr>
<td>D(GDP(-2))</td>
<td>-0.381928</td>
<td>0.415914</td>
<td>-0.918286</td>
<td>0.3672</td>
</tr>
<tr>
<td>D(GDP(-3))</td>
<td>-1.370732</td>
<td>0.370488</td>
<td>-3.699800</td>
<td>0.0011</td>
</tr>
<tr>
<td>D(GDP(-4))</td>
<td>-1.229071</td>
<td>0.473645</td>
<td>-2.594922</td>
<td>0.0156</td>
</tr>
<tr>
<td>D(GDP(-5))</td>
<td>-1.564817</td>
<td>0.475597</td>
<td>-3.290214</td>
<td>0.0030</td>
</tr>
<tr>
<td>D(GDP(-6))</td>
<td>-0.735164</td>
<td>0.480325</td>
<td>-1.530558</td>
<td>0.1384</td>
</tr>
<tr>
<td>D(GDP(-7))</td>
<td>-1.263401</td>
<td>0.443789</td>
<td>-2.846851</td>
<td>0.0087</td>
</tr>
</tbody>
</table>

R-squared: 0.842281
Adjusted R-squared: 0.798120
S.E. of regression: 601127.7
Akaike info criterion: 29.65822
Sum squared resid: 9.03E+12
Hannan-Quinn criter.: 29.78029

Augmented Dickey-Fuller Test statistic: 1.565600
Test critical values:
- 1% level: -2.624057
- 5% level: -1.949319
- 10% level: -1.611711


EXCHANGE RATE (Level)

Null Hypothesis: EXR has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

<table>
<thead>
<tr>
<th>Augmented Dickey-Fuller test statistic</th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1% level</td>
<td>-2.624057</td>
<td>0.0691</td>
</tr>
<tr>
<td>5% level</td>
<td>-1.949319</td>
<td></td>
</tr>
<tr>
<td>10% level</td>
<td>-1.611711</td>
<td></td>
</tr>
</tbody>
</table>

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXR)
Method: Least Squares
Date: 05/30/12   Time: 12:04
Sample (adjusted): 1971 2010
Included observations: 40 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXR(-1)</td>
<td>0.047366</td>
<td>0.030254</td>
<td>1.565600</td>
<td>0.1255</td>
</tr>
</tbody>
</table>

R-squared: 0.030065
Adjusted R-squared: 0.030065
S.E. of regression: 12.48366
EXCHANGE RATE (First Difference)

Null Hypothesis: D(EXR) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

<table>
<thead>
<tr>
<th>statistics</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schwarz criterion</td>
<td>7.953623</td>
</tr>
<tr>
<td>Hannan-Quinn criter.</td>
<td>7.926667</td>
</tr>
</tbody>
</table>

Augmented Dickey-Fuller test statistic
-5.385747  Prob.* 0.0000

Test critical values:
- 1% level  -2.625606
- 5% level  -1.949609
- 10% level -1.611593


Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXR,2)
Method: Least Squares
Date: 05/30/12   Time: 12:04
Sample (adjusted): 1972 2010
Included observations: 39 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(EXR(-1))</td>
<td>-0.865929</td>
<td>0.160782</td>
<td>-5.385747</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-squared 0.432886  Mean dependent var 0.036285
Adjusted R-squared 0.432886  S.D. dependent var 17.15717
S.E. of regression 12.92054  Akaike info criterion 7.980821
Sum squared resid 6343.737  Schwarz criterion 8.023476
Log likelihood -154.6260  Hannan-Quinn criter. 7.996125
Durbin-Watson stat 2.029459

INFLATION RATE (Level)

Null Hypothesis: INF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

<table>
<thead>
<tr>
<th>statistics</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schwarz criterion</td>
<td>7.926667</td>
</tr>
<tr>
<td>Hannan-Quinn criter.</td>
<td>7.953623</td>
</tr>
</tbody>
</table>

Augmented Dickey-Fuller test statistic
-3.226701  Prob.* 0.0257

Test critical values:
- 1% level  -3.605593
- 5% level  -2.936942
- 10% level -2.606857

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INF)
Method: Least Squares
Date: 05/30/12   Time: 12:07
Sample (adjusted): 1971 2010
Included observations: 40 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF(-1)</td>
<td>-0.430151</td>
<td>0.133310</td>
<td>-3.226701</td>
<td>0.0026</td>
</tr>
<tr>
<td>C</td>
<td>8.477708</td>
<td>3.393906</td>
<td>2.493953</td>
<td>0.0171</td>
</tr>
</tbody>
</table>

R-squared       0.215064  Mean dependent var -0.001000
Adjusted R-squared 0.194408  S.D. dependent var 15.19596
S.E. of regression 13.63910   Akaike info criterion 8.112465
Sum squared resid  7068.950   Schwarz criterion 8.196909
Log likelihood    -160.2493  Hannan-Quinn criter. 8.142997
F-statistic       10.41160   Durbin-Watson stat 1.716502

DEGREE OF OPENNESS (Level)

Null Hypothesis: DOP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

<table>
<thead>
<tr>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
</table>
| Augmented Dickey-Fuller test statistic  -1.865029  0.3448
| Test critical values:                  |         |
| 1% level                                 | -3.610453 |
| 5% level                                 | -2.938987 |
| 10% level                                | -2.607932 |


Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DOP)
Method: Least Squares
Date: 05/30/12   Time: 12:06
Sample (adjusted): 1972 2010
Included observations: 39 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOP(-1)</td>
<td>-0.239599</td>
<td>0.128469</td>
<td>-1.865029</td>
<td>0.0703</td>
</tr>
<tr>
<td>D(DOP(-1))</td>
<td>-0.347301</td>
<td>0.154928</td>
<td>-2.241694</td>
<td>0.0312</td>
</tr>
<tr>
<td>C</td>
<td>0.131122</td>
<td>0.067048</td>
<td>1.955635</td>
<td>0.0583</td>
</tr>
</tbody>
</table>

R-squared       0.277739  Mean dependent var 0.007571
Adjusted R-squared 0.237613  S.D. dependent var 0.123508
S.E. of regression 0.107841   Akaike info criterion -1.542521
Sum squared resid  0.418666   Schwarz criterion -1.414554
Log likelihood    33.07915   Hannan-Quinn criter. -1.496607
F-statistic       6.921737   Durbin-Watson stat 2.005594
DEGREE OF OPENNESS (First Difference)

Null Hypothesis: D(DOP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

<table>
<thead>
<tr>
<th>Augmented Dickey-Fuller test statistic</th>
<th>t-Statistic 9.898557</th>
<th>Prob.* 0.0000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test critical values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% level</td>
<td>-3.610453</td>
<td></td>
</tr>
<tr>
<td>5% level</td>
<td>-2.938987</td>
<td></td>
</tr>
<tr>
<td>10% level</td>
<td>-2.607932</td>
<td></td>
</tr>
</tbody>
</table>


Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DOP,2)
Method: Least Squares
Date: 05/30/12   Time: 12:06
Sample (adjusted): 1972 2010
Included observations: 39 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(DOP(-1))</td>
<td>-1.459586</td>
<td>0.147454</td>
<td>-9.898557</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>0.010304</td>
<td>0.017859</td>
<td>0.576959</td>
<td>0.5675</td>
</tr>
</tbody>
</table>

R-squared 0.725888  Mean dependent var 0.001625
Adjusted R-squared 0.718480  S.D. dependent var 0.209945
S.E. of regression 0.111394  Akaike info criterion -1.501570
Sum squared resid 0.459117  Schwarz criterion -1.416259
Log likelihood 31.28061  Hannan-Quinn criter. -1.470961
F-statistic 97.98143  Durbin-Watson stat 2.085309
Prob(F-statistic) 0.000000

NATURAL RESOURCES (Level)

Null Hypothesis: NRX has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

<table>
<thead>
<tr>
<th>Augmented Dickey-Fuller test statistic</th>
<th>t-Statistic -4.224264</th>
<th>Prob.* 0.0025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test critical values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% level</td>
<td>-3.670170</td>
<td></td>
</tr>
<tr>
<td>5% level</td>
<td>-2.963972</td>
<td></td>
</tr>
<tr>
<td>10% level</td>
<td>-2.621007</td>
<td></td>
</tr>
</tbody>
</table>

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(NRX)
Method: Least Squares
Date: 05/30/12   Time: 12:09  Sample (adjusted): 1981 2010
Included observations: 30 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRX(-1)</td>
<td>-0.778304</td>
<td>0.184246</td>
<td>-4.224264</td>
<td>0.0002</td>
</tr>
<tr>
<td>C</td>
<td>28.82119</td>
<td>7.000296</td>
<td>4.117138</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

R-squared 0.389239  Mean dependent var -0.313333
Adjusted R-squared 0.367426  S.D. dependent var 8.253264
S.E. of regression 6.564196  Akaike info criterion 6.665478
Sum squared resid 1206.483  Schwarz criterion 6.758891
Log likelihood -97.98216  Hannan-Quinn criter. 6.695361
F-statistic 17.84441  Durbin-Watson stat 1.695133

SINGLE EQUATION CO-INTEGRATION TEST  
PRE – Deregulated

Date: 05/30/12   Time: 12:25  Series: FDI GDP EXR INF DOP
Sample: 1970 1985  Included observations: 16
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministics: C
Automatic lags specification based on Schwarz criterion (maxlag=2)

<table>
<thead>
<tr>
<th>Dependent</th>
<th>tau-statistic</th>
<th>Prob.*</th>
<th>z-statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>-4.468958</td>
<td>0.1614</td>
<td>-17.85256</td>
<td>0.1307</td>
</tr>
<tr>
<td>GDP</td>
<td>-2.285465</td>
<td>0.8876</td>
<td>-8.195286</td>
<td>0.8992</td>
</tr>
<tr>
<td>EXR</td>
<td>-3.722259</td>
<td>0.3603</td>
<td>-16.14202</td>
<td>0.2397</td>
</tr>
<tr>
<td>INF</td>
<td>-3.555466</td>
<td>0.4199</td>
<td>-14.87379</td>
<td>0.3426</td>
</tr>
<tr>
<td>DOP</td>
<td>-4.376529</td>
<td>0.1963</td>
<td>56.43536</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Warning: p-values may not be accurate for fewer than 20 observations.

Intermediate Results:

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>DOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rho i 1</td>
<td>-1.190171</td>
<td>-0.546352</td>
<td>-1.076134</td>
<td>-0.991586</td>
<td>-2.049924</td>
</tr>
<tr>
<td>Rho S.E.</td>
<td>0.266320</td>
<td>0.239055</td>
<td>0.289108</td>
<td>0.278891</td>
<td>0.468390</td>
</tr>
<tr>
<td>Residual variance</td>
<td>101226.8</td>
<td>1.81E+08</td>
<td>0.001452</td>
<td>93.05603</td>
<td>0.000788</td>
</tr>
<tr>
<td>Long-run residual variance</td>
<td>101226.8</td>
<td>1.81E+08</td>
<td>0.001452</td>
<td>93.05603</td>
<td>0.003535</td>
</tr>
<tr>
<td>Number of lags</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Number of observations</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Number of stochastic trends**</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

**Number of stochastic trends in asymptotic distribution
Series: FDI GDP EXR INF DOP NRX  
Sample: 1986 2010  
Included observations: 25  
Null hypothesis: Series are not cointegrated  
Cointegrating equation deterministics: C  
Automatic lags specification based on Schwarz criterion (maxlag=4)

<table>
<thead>
<tr>
<th>Dependent</th>
<th>tau-statistic</th>
<th>Prob.*</th>
<th>z-statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>-3.892279</td>
<td>0.3904</td>
<td>-24.49537</td>
<td>0.1037</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.017337</td>
<td>0.9991</td>
<td>-5.838657</td>
<td>0.9937</td>
</tr>
<tr>
<td>EXR</td>
<td>-1.602797</td>
<td>0.9936</td>
<td>-5.338573</td>
<td>0.9958</td>
</tr>
<tr>
<td>INF</td>
<td>-4.204720</td>
<td>0.2826</td>
<td>-40.88560</td>
<td>0.0000</td>
</tr>
<tr>
<td>DOP</td>
<td>-3.995213</td>
<td>0.3511</td>
<td>-17.42510</td>
<td>0.4931</td>
</tr>
<tr>
<td>NRX</td>
<td>-5.034989</td>
<td>0.0960</td>
<td>-58.57708</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Warning: p-values may not be accurate for fewer than 30 observations.

Intermediate Results:

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>DOP</th>
<th>NRX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rho</td>
<td>-1.020641</td>
<td>-0.243277</td>
<td>-0.222441</td>
<td>-0.834730</td>
<td>-0.726046</td>
<td>-1.318637</td>
</tr>
<tr>
<td>Rho S.E.</td>
<td>0.262222</td>
<td>0.239132</td>
<td>0.138783</td>
<td>0.198522</td>
<td>0.181729</td>
<td>0.261895</td>
</tr>
<tr>
<td>Residual variance</td>
<td>1.63E+08</td>
<td>1.31E+13</td>
<td>406.7939</td>
<td>146.2061</td>
<td>0.010698</td>
<td>27.27113</td>
</tr>
<tr>
<td>Long-run residual variance</td>
<td>1.63E+08</td>
<td>1.31E+13</td>
<td>406.7939</td>
<td>663.0684</td>
<td>0.010698</td>
<td>101.7308</td>
</tr>
<tr>
<td>Number of lags</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Number of observations</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>23</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Number of stochastic trends**</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Number of stochastic trends in asymptotic distribution

ENTIRE PERIOD WITHOUT NRX

Date: 05/30/12  Time: 12:20  
Series: FDI GDP EXR INF DOP  
Sample: 1970 2010  
Included observations: 41  
Null hypothesis: Series are not cointegrated  
Cointegrating equation deterministics: C  
Automatic lags specification based on Schwarz criterion (maxlag=9)

<table>
<thead>
<tr>
<th>Dependent</th>
<th>tau-statistic</th>
<th>Prob.*</th>
<th>z-statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>-5.167132</td>
<td>0.0224</td>
<td>-41.21889</td>
<td>0.0009</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.908962</td>
<td>0.9975</td>
<td>-6.447610</td>
<td>0.9734</td>
</tr>
<tr>
<td>EXR</td>
<td>-1.974538</td>
<td>0.9463</td>
<td>-8.625856</td>
<td>0.9255</td>
</tr>
<tr>
<td>INF</td>
<td>-4.722826</td>
<td>0.0563</td>
<td>-51.55774</td>
<td>0.0000</td>
</tr>
<tr>
<td>DOP</td>
<td>-3.705956</td>
<td>0.2937</td>
<td>-21.01572</td>
<td>0.2692</td>
</tr>
</tbody>
</table>

Intermediate Results:
**ENTIRE PERIOD WITH NRX**

Date: 05/30/12   Time: 12:19
Series: FDI GDP EXR INF NRX DOP
Sample (adjusted): 1980 2010
Included observations: 31 after adjustments
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministics: C
Automatic lags specification based on Schwarz criterion (maxlag=6)

<table>
<thead>
<tr>
<th>Dependent</th>
<th>tau-statistic</th>
<th>Prob.*</th>
<th>z-statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>-4.416082</td>
<td>0.1955</td>
<td>-30.90938</td>
<td>0.0278</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.043690</td>
<td>0.9989</td>
<td>-6.638194</td>
<td>0.9898</td>
</tr>
<tr>
<td>EXR</td>
<td>-1.810189</td>
<td>0.9872</td>
<td>-6.793217</td>
<td>0.9887</td>
</tr>
<tr>
<td>INF</td>
<td>-4.044840</td>
<td>0.3167</td>
<td>-38.43039</td>
<td>0.0008</td>
</tr>
<tr>
<td>NRX</td>
<td>-6.010007</td>
<td>0.0142</td>
<td>-74.54628</td>
<td>0.0000</td>
</tr>
<tr>
<td>DOP</td>
<td>-2.972865</td>
<td>0.7688</td>
<td>-14.52594</td>
<td>0.7444</td>
</tr>
</tbody>
</table>

Warning: p-values may not be accurate for fewer than 30 observations.

Intermediate Results:

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>NRX</th>
<th>DOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rho i 1</td>
<td>-1.030313</td>
<td>-0.221273</td>
<td>-0.226441</td>
<td>-0.820400</td>
<td>-1.256101</td>
<td>-0.484198</td>
</tr>
<tr>
<td>Rho S.E.</td>
<td>0.233309</td>
<td>0.212010</td>
<td>0.125092</td>
<td>0.202826</td>
<td>0.209002</td>
<td>0.162873</td>
</tr>
<tr>
<td>Residual variance</td>
<td>1.34E+08</td>
<td>1.04E+12</td>
<td>358.8068</td>
<td>173.9068</td>
<td>27.72702</td>
<td>0.012756</td>
</tr>
<tr>
<td>Long-run residual variance</td>
<td>1.34E+08</td>
<td>1.04E+12</td>
<td>358.8068</td>
<td>453.7519</td>
<td>116.1209</td>
<td>0.012756</td>
</tr>
<tr>
<td>Number of lags</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of observations</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>29</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Number of stochastic trends**</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Number of stochastic trends in asymptotic distribution**

**ERROR ONE**

Null Hypothesis: ERR1 has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=3)

<table>
<thead>
<tr>
<th></th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augmented Dickey-Fuller test statistic</td>
<td>-8.490623</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ERR1)
Method: Least Squares
Date: 05/30/12   Time: 12:56
Sample (adjusted): 1971 1985
Included observations: 15 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERR1(-1)</td>
<td>-1.679225</td>
<td>0.197774</td>
<td>-8.490623</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>0.035276</td>
<td>0.136414</td>
<td>0.258593</td>
<td>0.8000</td>
</tr>
</tbody>
</table>

R-squared       0.847222  Mean dependent var  0.023953
Adjusted R-squared 0.835470  S.D. dependent var  1.302452
S.E. of regression   0.528305  Akaike info criterion  1.685281
Sum squared resid    3.628383  Schwarz criterion  1.779687
Log likelihood      -10.63960  Hannan-Quinn criter.  1.684275
F-statistic         72.09069  Durbin-Watson stat  1.775602
Prob(F-statistic)   0.000001

ERROR TWO (Level)

Null Hypothesis: ERR2 has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=3)

<table>
<thead>
<tr>
<th>Augmented Dickey-Fuller test statistic</th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1.829224</td>
<td>-1.829224</td>
<td>0.3525</td>
</tr>
</tbody>
</table>

Test critical values:
1% level          -4.004425
5% level          -3.098896
10% level         -2.690439

Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 14
ERROR TWO (First Difference)

Null Hypothesis: D(ERR2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=3)

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ERR2.2)
Method: Least Squares
Date: 05/30/12   Time: 13:02
Sample (adjusted): 1972 1985
Included observations: 14 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(ERR2(-1))</td>
<td>-1.575043</td>
<td>0.234302</td>
<td>-6.722289</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>0.243487</td>
<td>0.132265</td>
<td>1.840902</td>
<td>0.0905</td>
</tr>
</tbody>
</table>

R-squared        0.790170  Mean dependent var  0.029009
Adjusted R-squared 0.772684  S.D. dependent var  1.007339
S.E. of regression 0.480275  Akaike info criterion  1.502650
Sum squared resid  2.767975  Schwarz criterion    1.593944
Log likelihood  -8.518549  Hannan-Quinn criter.  1.494199
F-statistic      45.18917   Durbin-Watson stat  2.028910
Prob(F-statistic) 0.000021  

Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 14
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

<table>
<thead>
<tr>
<th></th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augmented Dickey-Fuller test statistic</td>
<td>-4.405943</td>
<td>0.0021</td>
</tr>
<tr>
<td>Test critical values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% level</td>
<td>-3.737853</td>
<td></td>
</tr>
<tr>
<td>5% level</td>
<td>-2.991878</td>
<td></td>
</tr>
<tr>
<td>10% level</td>
<td>-2.635542</td>
<td></td>
</tr>
</tbody>
</table>


Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ERR3)
Method: Least Squares
Date: 05/30/12  Time: 12:47
Sample (adjusted): 1987 2010
Included observations: 24 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERR3(-1)</td>
<td>-0.997629</td>
<td>0.226428</td>
<td>-4.405943</td>
<td>0.0002</td>
</tr>
<tr>
<td>C</td>
<td>-0.028369</td>
<td>0.190079</td>
<td>-0.149251</td>
<td>0.8827</td>
</tr>
</tbody>
</table>

R-squared 0.468757  Mean dependent var -0.094394
Adjusted R-squared 0.444610  S.D. dependent var 1.245622
S.E. of regression 0.928294  Akaike info criterion 2.768718
Sum squared resid 18.95804  Schwarz criterion 2.866889
Log likelihood -31.22461  Hannan-Quinn criter. 2.794763
F-statistic 19.41234  Durbin-Watson stat 1.865441
Prob(F-statistic) 0.000224

GRANGER CAUSALITY TEST RESULTS
PRE DEREGERULATED

Pairwise Granger Causality Tests
Date: 05/30/12  Time: 12:26
Sample: 1970 1985
Lags: 2

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP does not Granger Cause FDI</td>
<td>14</td>
<td>4.40953</td>
<td>0.0462</td>
</tr>
<tr>
<td>FDI does not Granger Cause GDP</td>
<td></td>
<td>0.22064</td>
<td>0.8062</td>
</tr>
<tr>
<td>EXR does not Granger Cause FDI</td>
<td>14</td>
<td>5.97470</td>
<td>0.0223</td>
</tr>
<tr>
<td>FDI does not Granger Cause EXR</td>
<td></td>
<td>0.57841</td>
<td>0.5803</td>
</tr>
<tr>
<td>INF does not Granger Cause FDI</td>
<td>14</td>
<td>0.05552</td>
<td>0.9463</td>
</tr>
<tr>
<td>FDI does not Granger Cause INF</td>
<td></td>
<td>1.01315</td>
<td>0.4010</td>
</tr>
</tbody>
</table>
### DEREGULATED

**Pairwise Granger Causality Tests**

- **Date:** 05/30/12  
  **Time:** 12:36
- **Sample:** 1986 2010
- **Lags:** 2

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP does not Granger Cause FDI</td>
<td>23</td>
<td>3.45546</td>
<td>0.0537</td>
</tr>
<tr>
<td>FDI does not Granger Cause GDP</td>
<td></td>
<td>0.60561</td>
<td>0.5565</td>
</tr>
<tr>
<td>EXR does not Granger Cause FDI</td>
<td>23</td>
<td>3.16117</td>
<td>0.0666</td>
</tr>
<tr>
<td>FDI does not Granger Cause EXR</td>
<td></td>
<td>0.17572</td>
<td>0.8403</td>
</tr>
<tr>
<td>INF does not Granger Cause FDI</td>
<td>23</td>
<td>0.20804</td>
<td>0.8141</td>
</tr>
<tr>
<td>FDI does not Granger Cause INF</td>
<td></td>
<td>1.71918</td>
<td>0.2074</td>
</tr>
<tr>
<td>NRX does not Granger Cause FDI</td>
<td>23</td>
<td>1.71336</td>
<td>0.2084</td>
</tr>
<tr>
<td>FDI does not Granger Cause NRX</td>
<td></td>
<td>0.45680</td>
<td>0.6404</td>
</tr>
</tbody>
</table>
### ENTIRE PERIOD

Pairwise Granger Causality Tests
Date: 05/30/12   Time: 12:21
Sample: 1970 2010
Lags: 2

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP does not Granger Cause FDI</td>
<td>39</td>
<td>7.23469</td>
<td>0.0024</td>
</tr>
<tr>
<td>FDI does not Granger Cause GDP</td>
<td></td>
<td>0.47393</td>
<td>0.6266</td>
</tr>
<tr>
<td>EXR does not Granger Cause FDI</td>
<td>39</td>
<td>6.22034</td>
<td>0.0050</td>
</tr>
<tr>
<td>FDI does not Granger Cause EXR</td>
<td></td>
<td>0.56686</td>
<td>0.5726</td>
</tr>
<tr>
<td>INF does not Granger Cause FDI</td>
<td>39</td>
<td>0.15224</td>
<td>0.8594</td>
</tr>
<tr>
<td>FDI does not Granger Cause INF</td>
<td></td>
<td>0.80700</td>
<td>0.4546</td>
</tr>
<tr>
<td>DOP does not Granger Cause FDI</td>
<td>39</td>
<td>0.66904</td>
<td>0.5188</td>
</tr>
<tr>
<td>FDI does not Granger Cause DOP</td>
<td></td>
<td>2.49665</td>
<td>0.0973</td>
</tr>
<tr>
<td></td>
<td>T-statistic</td>
<td>p-value</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>NRX does not Granger Cause FDI</td>
<td>15.4193</td>
<td>2.0E-05</td>
<td></td>
</tr>
<tr>
<td>GDP does not Granger Cause NRX</td>
<td>0.16113</td>
<td>0.8518</td>
<td></td>
</tr>
<tr>
<td>EXR does not Granger Cause GDP</td>
<td>0.43894</td>
<td>0.6483</td>
<td></td>
</tr>
<tr>
<td>GDP does not Granger Cause INF</td>
<td>0.20653</td>
<td>0.8144</td>
<td></td>
</tr>
<tr>
<td>NRX does not Granger Cause GDP</td>
<td>0.10085</td>
<td>0.9045</td>
<td></td>
</tr>
<tr>
<td>GDP does not Granger Cause NRX</td>
<td>1.38388</td>
<td>0.2699</td>
<td></td>
</tr>
<tr>
<td>INF does not Granger Cause EXR</td>
<td>0.68322</td>
<td>0.5118</td>
<td></td>
</tr>
<tr>
<td>EXR does not Granger Cause INF</td>
<td>0.42350</td>
<td>0.6582</td>
<td></td>
</tr>
<tr>
<td>DOP does not Granger Cause EXR</td>
<td>2.24736</td>
<td>0.1211</td>
<td></td>
</tr>
<tr>
<td>EXR does not Granger Cause DOP</td>
<td>0.42444</td>
<td>0.6576</td>
<td></td>
</tr>
<tr>
<td>NRX does not Granger Cause EXR</td>
<td>1.33158</td>
<td>0.2829</td>
<td></td>
</tr>
<tr>
<td>EXR does not Granger Cause NRX</td>
<td>1.75355</td>
<td>0.1946</td>
<td></td>
</tr>
<tr>
<td>DOP does not Granger Cause INF</td>
<td>0.43684</td>
<td>0.6497</td>
<td></td>
</tr>
<tr>
<td>INF does not Granger Cause DOP</td>
<td>1.31307</td>
<td>0.2823</td>
<td></td>
</tr>
<tr>
<td>NRX does not Granger Cause INF</td>
<td>0.32176</td>
<td>0.7279</td>
<td></td>
</tr>
<tr>
<td>INF does not Granger Cause NRX</td>
<td>3.36443</td>
<td>0.0515</td>
<td></td>
</tr>
<tr>
<td>NRX does not Granger Cause DOP</td>
<td>0.31252</td>
<td>0.7345</td>
<td></td>
</tr>
<tr>
<td>DOP does not Granger Cause NRX</td>
<td>0.47370</td>
<td>0.6284</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 11

Summary of the descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>DOP</th>
<th>NRX</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>13112.75</td>
<td>5971026.</td>
<td>54.32</td>
<td>20.78</td>
<td>0.54</td>
<td>37.28</td>
</tr>
<tr>
<td>STD. DEV</td>
<td>17380.19</td>
<td>8695059.</td>
<td>58.13</td>
<td>17.88</td>
<td>0.15</td>
<td>6.56</td>
</tr>
<tr>
<td>SKEWNESS</td>
<td>1.22</td>
<td>1.46</td>
<td>0.51</td>
<td>1.42</td>
<td>-0.29</td>
<td>0.02</td>
</tr>
<tr>
<td>KURTOSIS</td>
<td>3.01</td>
<td>3.77</td>
<td>1.44</td>
<td>4.02</td>
<td>2.67</td>
<td>2.12</td>
</tr>
</tbody>
</table>

The table above shows that the mean of the Gross Domestic Product (GDP) is the largest with a value of 5971026.0 over the entire period; it was followed by Foreign Direct Investment (FDI) with a value of 13112.75 while degree of openness (DOP) has the lowest value of 0.54.

All the variables are positively skewed except for the Degree of Openness (DOP) which implies that it is skewed to the left of the curve.

Also, all the coefficient of kurtosis is positive with the Inflation Rate (INF) having the highest peak.

STATIONARITY TEST
Summary of Unit Root Test

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>ADF Test-Statistic</th>
<th>Critical Values</th>
<th>ORDER OF INTEGRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>-10.23 (0.00)</td>
<td>1% = -2.63, 5% = -1.95, 10% = -1.61</td>
<td>I(1)</td>
</tr>
<tr>
<td>GDP</td>
<td>3.56 (0.99)</td>
<td>1% = -2.63, 5% = -1.95, 10% = -1.61</td>
<td>I(0)</td>
</tr>
<tr>
<td>INF</td>
<td>-3.23 (0.03)</td>
<td>1% = -3.61, 5% = -2.94, 10% = -2.61</td>
<td>I(0)</td>
</tr>
<tr>
<td>EXR</td>
<td>-5.39 (0.00)</td>
<td>1% = -2.63, 5% = -1.95</td>
<td>I(1)</td>
</tr>
</tbody>
</table>
We carried out a stationarity test on all the variables to avoid having a spurious regression analysis using the Augmented Dickey Fuller (ADF) unit root test. The table above indicated that all the variables are stationary though at different order of integration. Three of the variables namely FDI, EXR and DOP are stationary at first difference while GDP, INF and NRX are stationary at level. It implies that these variables have zero mean and constant variance. However, we cannot ascertain their long run relationship since they are of different order of integration.

**SINGLE EQUATION COINTEGRATION TEST** (Engle Granger Test)
Pre Deregulated 1970-1985

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>- 4.47</td>
<td>0.16</td>
<td>- 17.85</td>
<td>0.13</td>
</tr>
<tr>
<td>GDP</td>
<td>- 2.29</td>
<td>0.89</td>
<td>- 8.19</td>
<td>0.89</td>
</tr>
<tr>
<td>EXR</td>
<td>- 3.72</td>
<td>0.36</td>
<td>- 16.14</td>
<td>0.24</td>
</tr>
<tr>
<td>INF</td>
<td>- 3.56</td>
<td>0.42</td>
<td>- 14.87</td>
<td>0.34</td>
</tr>
<tr>
<td>DOP</td>
<td>- 4.38</td>
<td>0.19</td>
<td>56.44</td>
<td>1.00</td>
</tr>
</tbody>
</table>

As indicated in the table above, the variables under consideration are not co-integrated because the probability values are all greater than the significance level at 5%.
Also, considering the deregulated period as shown in the table above, the variables under consideration are not co-integrated because the probability values are greater than the 5% level of significance except for inflation (INF) and natural resources (NRX).

**Entire Period 1970-2010**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>- 5.17</td>
<td>0.02</td>
<td>- 41.22</td>
<td>0.00</td>
</tr>
<tr>
<td>GDP</td>
<td>- 0.91</td>
<td>0.99</td>
<td>- 6.45</td>
<td>0.97</td>
</tr>
<tr>
<td>EXR</td>
<td>- 1.97</td>
<td>0.95</td>
<td>- 8.63</td>
<td>0.93</td>
</tr>
<tr>
<td>INF</td>
<td>- 4.72</td>
<td>0.06</td>
<td>- 51.56</td>
<td>0.00</td>
</tr>
<tr>
<td>DOP</td>
<td>- 3.71</td>
<td>0.29</td>
<td>- 21.02</td>
<td>0.27</td>
</tr>
</tbody>
</table>

The table above indicates that the variables under consideration are not co-integrated because the probability values are greater than the 5% level of significance except for foreign direct investment (FDI) and inflation rate (INF). This implies that there is no long run relationship among variables.
## TEST FOR STATIONARITY IN ERROR TERMS

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>ADF Test-Statistic</th>
<th>Critical Values</th>
<th>ORDER OF INTEGRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERR 1</td>
<td>- 8.49 (0.00)</td>
<td>1% = - 3.96</td>
<td>I(0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% = - 3.08</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% = - 2.68</td>
<td></td>
</tr>
<tr>
<td>ERR 2</td>
<td>- 6.72 (0.00)</td>
<td>1% = - 4.00</td>
<td>I(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% = - 3.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% = - 2.69</td>
<td></td>
</tr>
<tr>
<td>ERR 3</td>
<td>- 4.41 (0.00)</td>
<td>1% = - 3.74</td>
<td>I(0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% = - 2.99</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% = - 2.64</td>
<td></td>
</tr>
</tbody>
</table>

The Co-integration test failed to establish a long run relationship among the variables, hence, the need to test for stationarity in the error term. Table 10 above indicates that the error term has no unit root (stationary) because the t-statistic is greater than the critical values (absolute values); therefore the null hypothesis is rejected. Also, the probability value is less than the significance levels. This implies that the variables are cointegrated since the error term is integrated at level.

## CAUSALITY TEST

**Granger Causality Test Summary**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP ----&gt; FDI</td>
<td>4.41</td>
<td>0.05</td>
<td>Uni-directional</td>
<td></td>
</tr>
<tr>
<td>FDI ----&gt; GDP</td>
<td>0.22</td>
<td>0.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXR ----&gt; FDI</td>
<td>5.97</td>
<td>0.02</td>
<td>Uni-directional</td>
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<tr>
<td>FDI ----&gt; EXR</td>
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<td>0.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INF ----&gt; FDI</td>
<td>0.06</td>
<td>0.95</td>
<td>Uni-directional</td>
<td></td>
</tr>
<tr>
<td>FDI ----&gt; INF</td>
<td>1.01</td>
<td>0.40</td>
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<td></td>
</tr>
<tr>
<td>DOP ----&gt; FDI</td>
<td>1.78</td>
<td>0.22</td>
<td>Bi-directional</td>
<td></td>
</tr>
</tbody>
</table>
In the pre-deregulated period, there is a uni-directional relationship between gross domestic product (GDP) and foreign direct investment (FDI) such that GDP granger cause FDI but FDI does not granger cause GDP.

Also, there is a bi-directional relationship between DOP and FDI, EXR and GDP as well as DOP and EXR.

### Granger Causality Test Summary

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EXR</td>
<td>GDP</td>
<td>0.77</td>
<td>0.49</td>
</tr>
<tr>
<td>GDP</td>
<td>EXR</td>
<td>3.93</td>
<td>0.06</td>
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<tr>
<td>INF</td>
<td>GDP</td>
<td>0.39</td>
<td>0.68</td>
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<tr>
<td>GDP</td>
<td>INF</td>
<td>1.57</td>
<td>0.26</td>
</tr>
<tr>
<td>DOP</td>
<td>GDP</td>
<td>0.57</td>
<td>0.58</td>
</tr>
<tr>
<td>GDP</td>
<td>DOP</td>
<td>2.1</td>
<td>0.18</td>
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<tr>
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<td>EXR</td>
<td>0.99</td>
<td>0.41</td>
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<td>EXR</td>
<td>INF</td>
<td>0.28</td>
<td>0.76</td>
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<tr>
<td>DOP</td>
<td>EXR</td>
<td>1.58</td>
<td>0.26</td>
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<tr>
<td>EXR</td>
<td>DOP</td>
<td>16.82</td>
<td>0.00</td>
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<tr>
<td>DOP</td>
<td>INF</td>
<td>1.48</td>
<td>0.28</td>
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<tr>
<td>INF</td>
<td>DOP</td>
<td>0.19</td>
<td>0.83</td>
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<td>----------</td>
<td>----------</td>
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<td>-----------</td>
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<tr>
<td>GDP → FDI</td>
<td>3.46</td>
<td>0.05</td>
<td>Bi-directional</td>
</tr>
<tr>
<td>FDI → GDP</td>
<td>0.61</td>
<td>0.56</td>
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</tr>
<tr>
<td>EXR → FDI</td>
<td>3.16</td>
<td>0.07</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>FDI → EXR</td>
<td>0.18</td>
<td>0.84</td>
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</tr>
<tr>
<td>INF → FDI</td>
<td>0.21</td>
<td>0.81</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>FDI → INF</td>
<td>1.72</td>
<td>0.21</td>
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</tr>
<tr>
<td>NRX → FDI</td>
<td>1.71</td>
<td>0.21</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>FDI → NRX</td>
<td>0.46</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>DOP → FDI</td>
<td>0.21</td>
<td>0.81</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>FDI → DOP</td>
<td>1.41</td>
<td>0.27</td>
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<tr>
<td>EXR → GDP</td>
<td>7.35</td>
<td>0.00</td>
<td>Uni-directional</td>
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<tr>
<td>GDP → EXR</td>
<td>0.14</td>
<td>0.87</td>
<td></td>
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<tr>
<td>INF → GDP</td>
<td>0.09</td>
<td>0.91</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>GDP → INF</td>
<td>1.25</td>
<td>0.31</td>
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<tr>
<td>NRX → GDP</td>
<td>0.15</td>
<td>0.86</td>
<td>Uni-directional</td>
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<tr>
<td>GDP → NRX</td>
<td>1.46</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>DOP → GDP</td>
<td>0.06</td>
<td>0.93</td>
<td>Nil</td>
</tr>
<tr>
<td>GDP → DOP</td>
<td>0.01</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>INF → EXR</td>
<td>1.61</td>
<td>0.23</td>
<td>Bi-directional</td>
</tr>
<tr>
<td>EXR → INF</td>
<td>1.60</td>
<td>0.23</td>
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<tr>
<td>NRX → EXR</td>
<td>1.87</td>
<td>0.18</td>
<td>Bi-directional</td>
</tr>
<tr>
<td>EXR → NRX</td>
<td>1.84</td>
<td>0.19</td>
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<tr>
<td>DOP → EXR</td>
<td>0.88</td>
<td>0.43</td>
<td>Uni-directional</td>
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</table>
The table above indicates that there is bi-directional relationship between GDP and FDI, INF and EXR, NRX and EXR, NRX and INF, as well as DOP and INF.
Also, there is no causal relationship between the following variables; DOP and GDP as well as DOP and NRX.

**Granger Causality Test Summary**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>ENTIRE PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP ←→ FDI</td>
<td>7.23</td>
</tr>
<tr>
<td>FDI ←→ GDP</td>
<td>0.47</td>
</tr>
<tr>
<td>EXR ←→ FDI</td>
<td>6.22</td>
</tr>
<tr>
<td>FDI ←→ EXR</td>
<td>0.57</td>
</tr>
<tr>
<td>INF ←→ FDI</td>
<td>0.15</td>
</tr>
<tr>
<td>FDI ←→ INF</td>
<td>0.81</td>
</tr>
<tr>
<td>DOP ←→ FDI</td>
<td>0.67</td>
</tr>
<tr>
<td>FDI ←→ DOP</td>
<td>2.49</td>
</tr>
<tr>
<td>NRX ←→ FDI</td>
<td>1.53</td>
</tr>
<tr>
<td>FDI ←→ NRX</td>
<td>0.45</td>
</tr>
<tr>
<td>EXR ←→ GDP</td>
<td>15.42</td>
</tr>
</tbody>
</table>
During the pre-deregulated era, there exists a uni-directional relationship between the Foreign Direct Investment and the Nigerian economic growth (GDP). Also, there is a causality relationship between exchange rate and the Foreign Direct Investment. This implies that the FDI contributes to the Nigerian economic growth in the pre-deregulated period.
Findings from the table above revealed that there is a bi-directional relationship between the FDI and economic growth in Nigeria while there is uni-directional relationship between DOP/FDI, EXR/GDP and EXR/DOP during the deregulated era. This implies that the era witnessed significant economic growth by virtue of trade openness and inflow of foreign direct investment.

The findings also showed that during the entire period under consideration (1970 ï 2010), there is a uni-directional relationship between DOP and FDI. Also, there is a uni-directional relationship between the GDP/FDI, EXR/FDI, EXR/GDP and EXR/DOP. Hence, it may be inferred from this analysis that the net inflow of foreign direct investment as well as the degree of trade openness has a significant impact on the Nigerian economic growth.
OLS RESULTS

PRE-DEREGULATED: \( \text{LNFDI} = f (\text{LNGDP}, \text{LNEXR}, \text{LNINF}, \text{LNDOP}) \)

Dependent Variable: LNFDI
Method: Least Squares
Date: 05/30/12   Time: 12:29
Sample: 1970 1985
Included observations: 16

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-5.061544</td>
<td>4.289853</td>
<td>-1.179888</td>
<td>0.2629</td>
</tr>
<tr>
<td>LNGDP</td>
<td>0.462587</td>
<td>0.255361</td>
<td>1.811502</td>
<td>0.0974</td>
</tr>
<tr>
<td>LNEXR</td>
<td>-5.152818</td>
<td>3.434753</td>
<td>-1.500200</td>
<td>0.1617</td>
</tr>
<tr>
<td>LNINF</td>
<td>-0.125973</td>
<td>0.323110</td>
<td>-0.389876</td>
<td>0.7041</td>
</tr>
<tr>
<td>LNDOP</td>
<td>-4.240931</td>
<td>1.991821</td>
<td>-2.129173</td>
<td>0.0567</td>
</tr>
</tbody>
</table>

R-squared 0.418883  Mean dependent var 5.552744
Adjusted R-squared 0.207568  S.D. dependent var 0.905461
S.E. of regression 0.806029  Akaike info criterion 2.656914
Sum squared resid 7.146517  Schwarz criterion 2.898347
Log likelihood -16.25531  Hannan-Quinn criter. 2.669277
F-statistic 1.982267  Durbin-Watson stat 3.324409
Prob(F-statistic) 0.166905

PRE-DEREGULATED: \( \text{LNGDP} = f (\text{LNFDI}) \)

Dependent Variable: LNGDP
Method: Least Squares
Date: 05/30/12   Time: 12:31
Sample: 1970 1985
Included observations: 16

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>8.195327</td>
<td>1.323940</td>
<td>6.190107</td>
<td>0.0000</td>
</tr>
<tr>
<td>LNFDI</td>
<td>0.349375</td>
<td>0.235512</td>
<td>1.483467</td>
<td>0.1601</td>
</tr>
</tbody>
</table>

R-squared 0.135838  Mean dependent var 10.13532
Adjusted R-squared 0.074113  S.D. dependent var 0.858322
S.E. of regression 0.825903  Akaike info criterion 2.571791
Sum squared resid 9.549628  Schwarz criterion 2.668364
Log likelihood -18.57432  Hannan-Quinn criter. 2.576736
F-statistic 2.200674  Durbin-Watson stat 0.476545
Prob(F-statistic) 0.160112

DEREGULATED: \( \text{LNFDI} = f (\text{LNGDP}, \text{LNEXR}, \text{LNINF}, \text{LNDOP}, \text{LNNRX}) \)

Dependent Variable: LNFDI
Method: Least Squares
### Entire Period (LNGDP & LNFDI)

**Dependent Variable:** LNGDP  
**Method:** Least Squares  
**Date:** 05/30/12  **Time:** 12:11  
**Sample:** 1970-2010  
**Included observations:** 39

<table>
<thead>
<tr>
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<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
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<tr>
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<td>0.407839</td>
<td>3.230946</td>
<td>0.0044</td>
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<tr>
<td>LNEXR</td>
<td>-0.860670</td>
<td>0.536134</td>
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<td>0.1249</td>
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<tr>
<td>LNINF</td>
<td>0.592441</td>
<td>0.291726</td>
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<tr>
<td>LNDOP</td>
<td>-1.135705</td>
<td>1.016817</td>
<td>-1.116922</td>
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<td>LNNRX</td>
<td>0.054336</td>
<td>1.395435</td>
<td>0.038939</td>
<td>0.9693</td>
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</table>

**R-squared** 0.650492  
**Adjusted R-squared** 0.558516  
**Mean dependent var** 8.831091  
**S.D. dependent var** 1.522180  
**S.E. of regression** 1.011401  
**Akaike info criterion** 3.066113  
**Schwarz criterion** 3.358643  
**Log likelihood** -32.32641  
**Hannan-Quinn criter.** 3.147248  
**Durbin-Watson stat** 1.847118  
**Prob(F-statistic)** 0.000690

### Entire Period: LNFDI = f (LNGDP, LNEXR, LNINF, LNDOP)

**Dependent Variable:** LNFDI  
**Method:** Least Squares  
**Date:** 05/30/12  **Time:** 12:14  
**Sample:** 1970-2010  
**Included observations:** 39

<table>
<thead>
<tr>
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<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3.991401</td>
<td>0.801016</td>
<td>4.982921</td>
<td>0.0000</td>
</tr>
<tr>
<td>LNFDI</td>
<td>1.169851</td>
<td>0.101348</td>
<td>11.54286</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

**R-squared** 0.782657  
**Adjusted R-squared** 0.776783  
**Mean dependent var** 12.91212  
**S.D. dependent var** 2.783769  
**S.E. of regression** 1.315217  
**Akaike info criterion** 3.435800  
**Schwarz criterion** 3.521111  
**Hannan-Quinn criter.** 3.466409  
**Durbin-Watson stat** 1.526796  
**Prob(F-statistic)** 0.000000
### ENTRIE PERIOD ALL VARIABLES

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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</thead>
<tbody>
<tr>
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<td>0.0410</td>
</tr>
<tr>
<td>LNEXR</td>
<td>-0.045871</td>
<td>0.367914</td>
<td>-0.124679</td>
<td>0.9019</td>
</tr>
<tr>
<td>LNINF</td>
<td>0.471893</td>
<td>0.279789</td>
<td>1.686599</td>
<td>0.1052</td>
</tr>
<tr>
<td>LNNRX</td>
<td>-0.499973</td>
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<td>-0.445011</td>
<td>0.6605</td>
</tr>
<tr>
<td>LNDOP</td>
<td>-0.504725</td>
<td>0.821936</td>
<td>-0.614069</td>
<td>0.5452</td>
</tr>
</tbody>
</table>

R-squared: 0.711547  Mean dependent var: 8.462591
Adjusted R-squared: 0.648840  S.D. dependent var: 1.726272
S.E. of regression: 20.896856  Akaike info criterion: 3.056285
Sum squared resid: 24.06865  Schwarz criterion: 3.348173
Log likelihood: -38.44663  Hannan-Quinn criter.: 3.153882
F-statistic: 11.34713  Durbin-Watson stat: 2.179065
Prob(F-statistic): 0.000013

### CORRELATION BETWEEN VARIABLES

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>GDP</th>
<th>EXR</th>
<th>INF</th>
<th>DOP</th>
<th>NRX</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>1.00000</td>
<td>0.656405</td>
<td>0.523154</td>
<td>0.110661</td>
<td>0.425044</td>
<td>-0.129766</td>
</tr>
<tr>
<td>GDP</td>
<td>0.656405</td>
<td>1.00000</td>
<td>0.847126</td>
<td>-0.304425</td>
<td>0.316936</td>
<td>-0.253233</td>
</tr>
<tr>
<td>EXR</td>
<td>0.523154</td>
<td>0.847126</td>
<td>1.00000</td>
<td>-0.327728</td>
<td>0.414865</td>
<td>-0.199043</td>
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<tr>
<td>INF</td>
<td>0.110661</td>
<td>-0.304425</td>
<td>-0.327728</td>
<td>1.00000</td>
<td>0.102763</td>
<td>0.229589</td>
</tr>
<tr>
<td>DOP</td>
<td>0.425044</td>
<td>0.316936</td>
<td>0.414865</td>
<td>0.102763</td>
<td>1.00000</td>
<td>0.065838</td>
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<tr>
<td>NRX</td>
<td>-0.129766</td>
<td>-0.253233</td>
<td>-0.199043</td>
<td>0.229589</td>
<td>0.065838</td>
<td>1.00000</td>
</tr>
</tbody>
</table>
APPENDIX IV

FOREIGN DIRECT INVESTMENT

Series: FDI
Sample 1970 2010
Observations 41

Mean 9969.916
Median 1779.100
Maximum 54041.90
Minimum -464.3000
Std. Dev. 16060.59
Skewness 1.630746
Kurtosis 4.236927
Jarque-Bera 20.78584
Probability 0.000031
<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
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</thead>
<tbody>
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<td>1970</td>
<td>5000025</td>
</tr>
<tr>
<td>1975</td>
<td>10000025</td>
</tr>
<tr>
<td>1980</td>
<td>15000025</td>
</tr>
<tr>
<td>1985</td>
<td>20000025</td>
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<tr>
<td>1990</td>
<td>25000025</td>
</tr>
<tr>
<td>1995</td>
<td>30000025</td>
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</tbody>
</table>

Series: GDP
Sample 1970 2010
Observations 41

Mean 4517633.0
Median 267550.0
Maximum 29205783
Minimum 5281.100
Std. Dev. 7957021.0
Skewness 1.873066
Kurtosis 5.239961
Jarque-Bera 32.54535
Probability 0.000000
Series: INF
Sample 1970 2010
Observations 41

Mean 19.56488
Median 13.72000
Maximum 72.80000
Minimum 3.460000
Std. Dev. 16.20386
Skewness 1.599061
Kurtosis 4.955851
Jarque-Bera 24.00779
Probability 0.000006
Series: DOP
Sample 1970 2010
Observations 41

Mean 0.505788
Median 0.471165
Maximum 0.882360
Minimum 0.215544
Std. Dev. 0.149112
Skewness 0.187015
Kurtosis 2.480781
Jarque-Bera 0.699541
Probability 0.704850
ERROR VARIABLE

ERR1

ERROR TWO

ERR2
### APPENDIX V

**VARIOUS DATA USED FOR THE ANALYSIS**

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VARIOUS DATA USED FOR THE ANALYSIS IN THEIR LOG FORM
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Source: Authors Calculation based on data generated.


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