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## Foreign Direct Investment (FDI) Flows into Oil and Gas Sector in Nigeria

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### Abstract

This paper examined foreign direct investment (FDI) flows into oil and gas sector in Nigeria. The objective of the study was to find out the determinants of FDI flows into oil and gas sector in Nigeria

The methodology adopted in this study was a desk based library method where the knowledge gained from various literature as well as empirical studies reviewed form the basis for conclusion and recommendations.

The conclusion made based on the discussions in this paper is that the major determinants of Foreign Direct Investment flows into oil and gas sector in Nigeria are Domestic Market size, Trade openness, Inflation, Exchange rate and economic policies. In addition to our findings this study recommended additional variables to also be tested as the determinants of FDI and that Nigerian government should provide necessary measures to combat inflation and exchange rate variability as this factors discourages FDI flow and in turn affects economic growth.

**Keywords:** FDI, Determinants of FDI, Nigeria.

### 1. Introduction

The importance of foreign direct investment (FDI) in the growth dynamics of countries has created much interest amongst scholars. The main objective of the resource-seeking FDI is to extract natural resources and sales in the international market through export them. Automatically these activities may affect foreign exchange and inflation rates in the domestic market which again stimulate to FDI flow through raising resource exports.

Nigeria is one of the developing countries in West Africa richly endowed with natural resources, mainly oil and gas, mineral deposits, vegetation etc. and these resources balance is dominated by petroleum as well as coal reserves but production is substantially lower than potential. From 1970-1990, Nigeria accounted for 30% of FDI inflow to Africa; this was largely as a result of its oil attractiveness (United nations conference on trade and development (UNCTAD), 1999 as cited in Kareem, Kari, Alam, Makua Chukwu & David, 2012) <sup>[36]</sup>. In 2007 in spite of the oil boom, Nigeria accounted for only about 16% of total FDI inflow to Africa. However UNCTAD World Investment Report 2006 shows that FDI inflow to West Africa is mainly dominated by inflow to Nigeria, who received 70% of the sub regional total and 11% of Africa's total. Out of this Nigeria's oil sector alone receive 90% of the FDI inflow.

The UNCTAD report also noted that investment inflow into Nigeria and the rest of Africa increased substantially in 2008 but declined significantly in 2009. In spite of economic reforms by the government, no appreciable improvement was made. According to Soumyananda (2009) <sup>[38]</sup>, Insecurity in the land is a likely primary factor responsible for the sharp decline. This is a true reflection of Nigeria's economic, social, legal and cultural environment which raises several questions and anxiety from prospective foreign investors.

Foreign Direct Investment (FDI) inflows to Nigeria dropped considerably between 2009 and 2010 by \$3.7bn from \$6bn in 2009 to \$2.3bn in 2010 (UNCTAD, 1999, 2006, 2007 as cited in Kareem *et al*, 2012) <sup>[36]</sup>. This immense fall of 60.4 percent shows the need for Nigerian government to begin to rigorously and courageously address the challenges to foreign investment and other business interests in the country.

According to Ibi-Ajayi (2006) <sup>[21]</sup> Nigeria's most important role in terms of attracting FDI started grinding down due to the surge of FDI to other oil-rich countries, such as Angola and Sudan. Another factor is the improved FDI performance of other large African countries such as Egypt and South Africa which are successful in attracting FDI in various sectors of their economies.

FDI is said to play an important role in Economic development of any country. This, it does by complimenting domestic investment and facilitating international trade as well as transfer of

skills and technology (Gorg & Greenoway, 2004) <sup>[18]</sup>. Given its role in socio-economic transformation, countries are generally interested in attracting it and taking steps to improve the flow. However, from the UNCTAD world investment report so far, the FDI inflow of Nigeria in which oil and gas is the major contributor is said to be inconsistent as it increases at a particular period and decreases at another period irrespective of the financial reforms made by the country. Based on this emerging issue, one big question that has arisen is “why is there inconsistency in the FDI flow into oil and gas sector in Nigeria” which hence has called for the need for this study.

Based on the perceived need for this study. The objective therefore is to find out the determinant factors that encourages and discourages the flow of FDI into oil and gas sector in Nigeria.

## 2 Literature Review

Worldwide FDI is increasing at an extraordinary speed in the 21st century, which begins making Africa different (Asiedu, 2002) <sup>[6]</sup>. In literature, generally, FDI flow is defined as the ratio of FDI to Gross domestic product (GDP) and resource flow as ratio of natural resource export to total export of a country. This approach considers that everything is endogenous and development of the rest of the world does not affect the country (Soumyananda, 2009) <sup>[38]</sup>.

FDI refers to investment made to acquire a lasting management interest (usually at least 10 % of voting stock) and acquiring at least 10% of equity share in an enterprise operating in a country other than the home country of the investor. It can take the form of either “greenfield” investment (also called “mortar and brick” investment) or merger and acquisition (M&A), depending on whether the investment involves mainly newly created assets or just a transfer from local to foreign firms (Mwilima, 2003) <sup>[9]</sup>.

According to Yakub (2005), FDI refers to the flow of capital and personnel from abroad for investment in another country, the ownership of such capital being either an individual or a corporate body or a government. The basic consideration of FDI is the control of a certain amount of shares of such firm. FDI flow to a country depends largely on the presence in that country, of a certain critical minimum requirements. Among the requirements is the presence of economic, political and social stability as well as rules regulating entry and operation of business.

### 2.1 Determinants of Foreign Direct Investment (FDI).

#### 2.1.1 Market size

Market size is a fundamental determinant of FDI. The wealth and development of a country can be used as proxy to measure the size of the domestic market. Most commonly, per capita income, which is an indicator of effective demand, is used to measure the size of local market. In addition to per capita income, the GDP of a country and the population size are also used as an indicator to measure the size of local market. However, if the firm is export-oriented and not market seeking, the size of domestic market will not be an important determinant of FDI (Root & Ahmed, 1979) <sup>[35]</sup>. A large market can help firms producing tangible products to achieve scale and scope economies. The domestic market growth rate which is measured in terms of population and GDP growth rate also determines the inflow of FDI in to a country (UNCTAD, 1998 as cited in Atlaw, Teklemariam & Geun, 2013) <sup>[8]</sup>.

Moreover, Fayyaz and constance (2012) <sup>[16]</sup> found and concluded that amongst all the indicators market size is the most important determinant of the FDI. Abdoul (2012) <sup>[1]</sup> also found that market size is one of the five most important determinant factors of FDI. Study conducted in Korea, Han, Taek-Dong, shiyong and young-man (2005) <sup>[19]</sup> also indicated that a channel through which Free Trade Agreement (FTA) may promote the FDI to Korea is growing domestic market size. The study further mentioned that growing consumer’s purchasing power under the FTA could attract more FDI to Korea.

#### 2.1.2 Natural Resources

Natural resources, historically, are the most important determinants of FDI. From the 19th century up to the eve of the Second World War about 60 % of the world stock of FDI was in natural resources. The need to secure economic and reliable sources of mineral and primary products for the (then) industrializing nations of Europe and North America, natural resources were the major reason for the expansion of FDI (Dunning, 1993) <sup>[13]</sup>. The availability of natural resources might be a major determinant of FDI to host country. FDI takes place when a country richly endowed with natural resources lack the amount of capital or technical skill needed to extract or/and sale to the world market. Foreign firms embark on vertical FDI in the host country to produce raw materials or/and inputs for their production processes at home. This means that certain FDI may be less related to profitability or market size of host Country than natural resources which are unavailable to domestic economy of the foreign firms.

#### 2.1.3 Level of Infrastructure

In today’s globally competitive business environment, absence and lack of efficient infrastructure means not only high transaction costs for those that are already in business but also a barrier to entry for new firms. Infrastructure development has high importance for the expansion of FDI because efficient and adequate infrastructure implies better access to natural resources and potential market (John, 2012) <sup>[26]</sup>. In the same way, Abdoul (2012) <sup>[1]</sup> concluded that to improve the return to investment for FDI in Africa, African countries should work more on the development of infrastructure.

#### 2.1.4 Low Labour Cost

As noted by neo-classical economists labour cost is one of the factors that affect the investment decision of foreign investors and this fact has been proven in numerous locations. UNCTAD (2004) reported that availability of cheap labour in China is taking jobs from Europe and United States. In addition to cheap labour, the out-put labour ratio (labour productivity) also determines the inflow (Solomon, 2008) <sup>[37]</sup>. The effect of FDI on economic growth is dependent on the level of human capital available in the host economy and there is a strong positive interaction between FDI and the level of educational attainment (Borensztein, 1998 as cited in Atlaw, Teklemariam & Geun, 2013). Fayyaz and constance (2012) <sup>[16]</sup> also concluded that availability of skilled labour force encourages the FDI inflows.

#### 2.1.5 Political Stability

The economic process of a country and in particular the inflow of FDI into a country can be disrupted by unsettled, implicit or explicit, internal or external political disputes and

crises. Without stable political conditions, whatever the economic environment may be, a country's effort to create a more hospitable environment for overseas investors cannot be fruitful. Political instabilities can delay FDI until the storm weathers away or diverts away for good (Solomon, 2008) <sup>[37]</sup>. Abdoul (2012) <sup>[1]</sup> also finds that political stability is one of the five most determinant factors of FDI in Africa.

### 2.1.6 Inflation

High inflation rates simply indicate macroeconomic instability and a country's inability to control macroeconomic policy, both of which contribute to adverse investment climate. According to Solomon (2008) <sup>[37]</sup>, through its effect on the cost of inputs and the price of outputs, inflation reduces the real return on investment and firms' competitiveness. Hence, countries that pursue policies that reduce inflation rate have better chance in attracting FDI. Low and predictable inflation rate is central for the long-term investment of both domestic and foreign companies. Therefore, higher and unpredictable inflation will decrease the inflow of FDI (Solomon, 2008) <sup>[37]</sup>. On the other hand, Fayyaz and Constance (2012) <sup>[16]</sup> also found that macro-economic environment as depicted by low and stable inflation also encourages FDI inflows in developing countries.

### 2.1.7 Exchange Rate Variability

Frequent and erratic changes in exchange rate of the domestic currency affect the inflow of FDI (Goldberg and Klien, 1997 as cited in Atlaw, Teklemariam & Geun, 2013) <sup>[8]</sup>. Exchange rate devaluations have a twofold role in explaining variations in FDI. On the one hand, the real value of foreign investors' capital increases when the host country's currency is devalued. On the other hand, frequent and continuous declines in the value of host country's currency would decrease FDI inflow, as it creates high uncertainty (Accolley *et al.*, 1997 as cited in Atlaw, Teklemariam & Geun, 2013) <sup>[8]</sup>. A study conducted in Korea revealed that real exchange rate against source country's currency has a positive effect on the inward FDI. This means that depreciation of Korean Won promotes the inward FDI. This result strengthens other results that the multinationals utilize cost advantages or real wage and interest differentials of the host country and tend to export their final products (Han, Taek-Dong, Shiyong & Young-man, 2005) <sup>[19]</sup>.

### 2.1.8 Foreign Debt

Excessive foreign debt is one source of instability and uncertainty in macroeconomic environment of underdeveloped countries and hence this foreign debt is likely to affect adversely the inflow of FDI. Excessive foreign debt may signal imminent fiscal crises and fore shadow the future economic situation in a country (John, 2012) <sup>[26]</sup>.

### 2.1.9 Fiscal Deficit

The fiscal deficit of a government, whether it is financed through printing additional bank notes or through taxation (which equally leads to inflation), decreases the real return on investment (John, 2012) <sup>[26]</sup>. Moreover, in many developing countries it is apparent that due to excessive government borrowing the financial resources available for the private sector are limited and the interest rate is high. On the other hand, expansionary fiscal policy may be important for the expansion of public sector investments on infrastructure (UNCTAD, 1998).

### 2.1.10 Geographical Proximity

Jinayu (1997) <sup>[25]</sup> noted that in the current global economic structure, geographical proximity and cultural and linguistic affinities are becoming one important determinant of foreign direct investment. Studies have confirmed that FDI from developed to developing countries are influenced by geographical proximity. For instance, while Japanese firms tend to open subsidiaries in China and newly industrialized Asian countries, the West European firms tend to open their subsidiary in East Europe (Solomon, 2008) <sup>[37]</sup>.

### 2.1.11 Legal and Regulatory Framework

While stable, transparent and reliable legal and regulatory frameworks promote both domestic and foreign investment, an inefficient and ineffective legal system is an impediment to enforce laws and contracts (Solomon, 2008) <sup>[37]</sup>. However, UNCTAD (1999) indicated that an efficient and transparent legal system, and in particular least developed countries (LDCs), does not automatically make a country more attractive for FDI.

### 2.1.12 Regional Integration (Access to Regional Markets)

Regional trade agreements can play an important role in terms of enhancing FDI inflows to member countries, through creating access to regional markets. Thus, strong regional integration through trade agreements can influence the investment decisions of Transnational companies (TNCs). Mwilima (2003) <sup>[9]</sup> pointed out that regional integration is a determinant of market-seeking FDI. The benefits of regional integration depend on a respective country's domestic market size, level of infrastructure development and availability of skilled and cheap labour force compared to other member countries (Solomon, 2008) <sup>[37]</sup>.

Han, Taek-Dong, Shiyong & Young-man (2005) <sup>[19]</sup> tried to study the impact of Regional Trading Agreement (RTA) on FDI among Korea-China-Japan. The results of his study suggested that FDI in to Korea is both to capture domestic markets and to utilize the Korea economy as a manufacturing base to re-export the final goods to source and/or a third countries. The study empirically found that the trade volume variable has a positive impact on the inward FDI in all industries, implying that trade and FDI are complements in many Korean industries. Abdoul (2012) <sup>[1]</sup>, in his study found and suggested that African countries can use regional integration to attract FDI because regional integration can increase trade openness, enlarge the size of domestic markets, and generate more political stability. That is, the inward FDI is of both the horizontal and vertical character. This result gives an important clue to evaluate the potential effects of the KCJ FTA (Korea-China-Japan Free Trade Agreement) on the FDI. Based on this finding the author argued that the FTA is very likely to encourage FDI inflows to Korea.

### 2.1.13 Investment Promotion Strategy and Incentive Structure

Investment incentives are FDI policy instruments used to attract foreign investors. These include tax reductions and exemptions, special tax allowances, financial incentives such as low interest loans, subsidies as well as grants. Investments guarantees such as guarantees for repatriation of capital and transfer of profits, and guarantees for provision of foreign currencies can also be seen as an incentive to attract TNCs. Bilateral and multilateral investment treaties are also an incentive to increase investment, through creating a predictable investment climate, thereby improving direct

foreign investors' confidence (Solomon, 2008) <sup>[37]</sup>. However, investment incentives are not substitutes for other determinants like infrastructure and market size. This clearly indicates that the effectiveness of investment incentives is highly determined by the host country's level of development (UNCTAD, 2000). Regarding promotion some economists argue that if countries would only get their investment policies right, investors would search out all worthwhile investment opportunities (International finance corporation (IFC) & Foreign Investment Advisory Services (FIAS), 1997 as cited in Atlaw *et al*, 2013) <sup>[8]</sup>. In reality, not all prospective investors search for opportunities; as a result, investment promotion is vital particularly in LDCs. Image building, investment generation and investors servicing are the three main elements of successful investment promotion. Investment promotion agencies can help the investment process if they identify sectors and clusters of activities where comparative advantages exist and where new ones can be developed (IFC & FIAS, 1997 as cited in Atlaw *et al*, 2013) <sup>[8]</sup>.

#### 2.1.14 Privatization

Privatization provides a concrete vehicle for TNCs to invest in a country. It has generated substantial amounts of FDI in many developing economies. Sound privatization programs have three main characteristics: political commitment, business orientation, and transparency. Large scale privatization programs send a signal to foreign investors that a government is taking steps to create a climate conducive to FDI. Thus, FDI in privatization of infrastructure enterprises like telecommunication, and industrial enterprises would have great impact on other FDI flows (IFC) & (FIAS), 1997 as cited in Atlaw *et al*, 2013) <sup>[8]</sup>.

#### 2.1.15 Openness

Trade openness is also a significant determinant of FDIs but its effect on inward FDIs is inconclusive due to the various trade agreements reduction of tariffs promoted from different sets of countries. Trade Openness represents the easiness the country allows exports and imports of goods and services. Openness is measured as the ratio of export and import to GDP. It is also termed as trade intensity which refers to the ease with which capital can be moved in or out of a country by investors (Chakrabarti 2001) <sup>[11]</sup>.

#### 2.1.16 Other Determinants of FDI

In addition to the mentioned macro-level determinant of FDI, numerous other factors are mentioned as host country determinants of FDI. Some of them are: contract law, the image of the host country, availability of investment fund, governance, human resource development, urbanization, coherent and stable macro & sectorial policies (Solomon, 2008; John, 2012) <sup>[37, 26]</sup>.

According to Isenmila and Okolie (2005) <sup>[22]</sup>, FDI is influenced at least in theory by the size of the market for the products, expected increase in higher profit rates, availability of relevant raw materials, the existence of protectionist policies, level of domestic investment, low labour and production cost, political stability and enduring investment climate, international product differentials, cordial supplier relationships, favourable regulatory environments, and financial infrastructural facilities. The principal determinants of FDI are related to the economic and political nature of the host country's economies.

Pfeffermann and Madarassy (1992) <sup>[34]</sup> identified following critical variables as major determinants of foreign direct investment In relation to developing economies (i) the size of the domestic market (ii) inflation, (iii) exchange rate volatility (iv) interest rate and macroeconomic policies. Their findings indicate that the size of the domestic market and capacity utilization are positively related to foreign direct investment, while an unstable exchange rate also creates foreign exchange risk and uncertain investment climate. While inflation and volatile exchange rates have negative effects on foreign investment High and rising inflation rates heighten fears of rising costs of imported capital goods and inputs.

Inflation is also considered as an important and traditional determinant of FDIs. It reflects the consumption rates of an economy but also the potential instability of the political and economic environment of the country. In the earliest case, high consumption rates promote economies of scale, leading to a massive decrease of the production costs and maximizing profits (Akenbor & Tennyson, 2014) <sup>[2]</sup>.

The existence of natural assets in a country could be beneficial in attracting inward FDIs under certain circumstances. Natural recourses are thought to be one of the most significant inputs especially in manufacturing industries. Low-cost recourses can be a significant asset for certain economies in attracting inward FDIs (Akenbor & Tennyson, 2014) <sup>[2]</sup>. Asiedu (2006) <sup>[7]</sup> suggests that African countries with high levels of under soil endowments attract inward FDIs. Kinoshita and Campos (2003 as cited in Akenbor & Tennyson, 2014) <sup>[2]</sup> also found that abundance of natural recourses is one of the most significant explanatory variables in attracting inward FDIs in transition economies. However, Pfeffermann and Madarassy (1992) <sup>[34]</sup> suggests that natural recourses are significantly related only to recourse - seeking FDIs which tend to export the subsoil assets of the host country, effecting negatively the promotion of other kinds of FDIs.

Economic theories and empirical studies support the notion that foreign direct investment is conducted in anticipation of future profit. It is generally assumed that investment flows from regions of low anticipated profit to those of high anticipated ones, after allowing for risk. Although, expected profits may ultimately explain the process of foreign direct investment, corporate management may emphasize a variety of other factors when considering investment motive. These factors include market-demand conditions, trade restriction, investment regulations, labour cost and transportation cost (Kim & Seo, 2003) <sup>[27]</sup>. Bengos and Sanchez-Robles (2003) <sup>[10]</sup> assert that in developing economies, literatures have shown that foreign investment unaccompanied by domestic investment cannot create any stable basis for higher standard of living in the future.

Alfaro (2003) <sup>[3]</sup> noted that FDI impacts on growth differ across sectors. The benefit depends on the spread out potential of the industry. Further studies also draw consideration to the fact that the benefits of FDI on growth cannot be generalized across different countries or sectors. Each has certain specific conditions that characterized market which could improve or hamper these benefits on the host country's economic growth. However, despite these conflicting views on the relationship between FDI and growth, it is still highly recommended that emerging markets should actively pursue FDI (Nwankwo, 2006) <sup>[30]</sup>.

In a survey of African countries Dupasquier and Osakwe (2006) <sup>[14]</sup> identified poor corporate governance, unstable political and economic policies, weak infrastructure,

unwelcoming regulatory environments and global competition for FDI flows as impediments standing in the way of attracting significant FDI flows. This corroborates the findings of Jerome and Ogunkola (2004) <sup>[24]</sup> which assessed the magnitude, direction and prospect of FDI in Nigeria. The authors ascribed the low level of FDI in Nigeria to deficiency in the country's legal framework concerning corporate law, bankruptcy and labour law in addition to institutional uncertainty.

Ekpo (1995) <sup>[15]</sup> using time series data, has it that the variability of FDI into Nigeria can be explained by the political regime, real income per capita, rate of inflation, world interest rate, credit rating and debt service. In his study of the determinants of FDI in Nigeria, Anyanwu (2011) <sup>[5]</sup> identified change in domestic investment, change in domestic output or market size, indigenization policy and change in openness of the economy as major determinants of the FDI. He further noted that the abrogation of the indigenization policy in 1995 encouraged FDI inflow into Nigerian and that efforts must be made to raise the nation's economic growth so as to be able to attract more FDI.

According to Heshmati and Davies (2007) <sup>[20]</sup> Information ICT infrastructure and skills are now critical in integrating local producers into international networks, and in attracting vertical FDI in services as well as manufacturing. As Multinationals providing business services and consultation invest where they can draw on the local ICT skills to develop business solutions for international clients. ICT capacity also influences horizontal FDI to produce goods and services for sale in the host country market, particularly in large markets.

Onakoya, (2012) <sup>[33]</sup> concludes that foreign direct investment contributes positively to economic growth in Nigeria. However, the relationships with the different sectors are different. Whereas, FDI is positively related to the oil sector, it is negatively related to agriculture and manufacturing. Which means that policy makers armed with exact knowledge of the type of FDI projects and the disparate consequences on the different sectors of the local economy, can more accurately fashion out selective FDI policies with the view to attracting growth-promoting foreign investments.

## 2.2 Review of Empirical Studies

Using least squares technique on annual data for 1962 – 1974, Obadan (1982) <sup>[31]</sup> supports the market size hypothesis confirming the role of protectionist policies (tariff barriers). The study suggests to take the cognisance factors such as market size, growth and tariff policy when dealing with policy issues relating to foreign investment to the country.

Anyanwu's (1998) study of the economic determinants of FDI in Nigeria also confirmed the positive role of domestic market size in determining FDI inflow into the country. This study 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) <sup>[23]</sup> examined the effects of macroeconomic instability and uncertainty, economic size and external debt on foreign private investment inflows. The study has it that market size attracts FDI to Nigeria where as inflation discourages it. The study also confirms that unsuitable macroeconomic policy acts to discourage foreign investment inflows into the country. Major limitations of the Studies of Anyanwu (1998) and Iyoha (2001) <sup>[23]</sup> is the traditional econometric technique and non-consideration of natural resource in determination of FDI inflow.

Asiedu (2002, 2006) <sup>[6, 7]</sup> explore the impact of natural resources, market size, host country's investment policy, corruption and political instability on FDI flow. Asiedu (2006) <sup>[7]</sup> examines the determinants of FDI to Africa. The study suggests that low inflation and efficient legal system promote FDI but corruption and political instability have the opposite effect.

The investigation of the empirical relationship between non-extractive FDI and economic growth in Nigeria was the focus of Ayanwale (2007) <sup>[9]</sup> who reported that the determinants of FDI in Nigeria are market size, infrastructure development and stable macroeconomic policy.

Demirhan and Masca (2008) <sup>[12]</sup> used the cross-sectional data of 38 developing countries for the period of 2000 to 2004 to examine the determinants of FDI in developing countries. They used econometric model and found that per capita income, growth rate, existence of main telephone lines, and trade openness have significant positive impact on FDI inflows. Similarly, inflation rate and tax rate also significantly attract FDI, with negative sign. On the other hand, they analysed that risk and labour cost is insignificant to FDI inflows in developing countries.

Using time series econometric technique on annual data of Nigeria, Soumyananda (2009) <sup>[38]</sup> examined the effect of the country's natural resource export, along with openness, market size and macroeconomic risk variables like inflation and foreign exchange rate on FDI inflow during 1970-2006. The study supports earlier literature except market size in case of Nigeria. Generally, the market size is considered as the major determining factor for FDI. It might be true for other country but not in Nigeria during 1970-2006. The study suggests that the endowment of natural resources, macroeconomic risk factors and policy variable like openness are significant determinants of FDI inflow to Nigeria. The findings suggest that the bulk of FDI inflow to Nigeria can be explained by resource-seeking FDI.

Using Ordinary Least Squares (OLS) and robust Generalised Linear Model (GLM) with a panel of non-overlapping windows for the period 1980-2007, Anyanwu (2011) had the following estimation results which is summarized as follows: (i) there is a positive relationship between market size (urban population share) and FDI inflows to Africa; (ii) openness to trade has a positive impact on FDI flows; (iii) Higher financial development has negative effect on FDI inflows to Africa; (iv) high government consumption expenditure attracts FDI inflows to Africa; (v) higher FDI goes where international remittances also goes in Africa; (vi) agglomeration has a strong positive impact on FDI inflows to Africa; (vii) natural resource endowment and exploitation (especially for oil) attracts huge FDI into Africa;

Offiong and Atsu (2014) <sup>[32]</sup> using multiple regression analysis for the study found that there was a significant relationship between GDP and inflow of FDI to Nigeria in the years under review (1980-2011). As well as a significant relationship between real wage rates and inflow of FDI to Nigeria in the years under review.

It also found no significant relationship between FDI in flow and the relative openness index as well as lending rate and FDI inflow to Nigeria in the years under review. This was so because majority of the investment funding is sourced off-shore and as such domestic interest rates will have little impact on the investment funds

Akenbor and Tennyson (2014) <sup>[2]</sup> empirically analysed the impact of natural assets, market size, infrastructure, human capital, investment policies, population health, reliability of

legal system, corruption, and political risk on FDI in Nigeria during the period of 1999 – 2012, and also to determine the factor with the strongest and weakest impact. It was gathered in the study that market size, natural assets, infrastructure, domestic credit, exchange rate, legal system and population health of the country have a positive relationship with FDI; while corruption, human capital development, political risk and trade openness have a negative relationship with FDI. Soumyananda (2014) [39] using co-integration technique and systematic time series econometrics approach suggests that the endowment of natural resources, trade intensity,

macroeconomic risk factors such as inflation and exchange rates are significant determinants of FDI flow to Nigeria. The findings suggest that in long run, market size is not the significant factor for attracting FDI to Nigeria.

**3 Methodology**

The methodology adopted in this study was a desk based library method where the knowledge gained from various literature as well as empirical studies reviewed formed the basis for conclusion and recommendations.

**4 Analysis and Summary of Findings**

**Table 1:** Studies on determinants of FDI in developing Economies/ countries

Author	Objective/Methodology	Findings
Pfeffermann and Madarassy (1992)	To find out the determinants of FDI in developing countries. The methodology adopted was regression analysis.	Size of domestic market and capacity utilisation are positively related to FDI while inflation and volatile exchange rates are negatively related to FDI.
Demirhan and Masca (2008)	To find out the determinants of FDI in developing countries. The methodology adopted was Econometric Model on a cross sectional data.	Per capita income, growth rate, existence of main telephone lines and trade openness have significant positive impact on FDI flows while inflation and tax rate attracts FDI with negative sign.
Fayyaz and Constance (2012)	To find out why some countries successfully attract FDI while some others have not. The methodology adopted was Ordinary least square technique and regression analysis.	Market size is the most Important determinant of FDI. Stable macro-Economic Environment, global integration, availability of skilled labour forces and developed financial sector also promote FDI in developing Economies

Source: Author (2014)

Based on table 1 the analysis of determinants of FDI flow in developing economies show that, Market size and inflation are found to be significant in determining the flow of FDI in the economies while global integration, availability of skilled

labour force, developed financial sector, existence of telephone line are less significant in attracting FDI.

**Table 2:** Studies on determinants of FDI in Africa.

Author	Objective/Methodology	Findings
Asiedu (2006)	To find out the determinants of FDI in Africa. The methodology adopted was Regression Analysis	Natural resources, target market size, lower inflation, good infrastructure, an educated population, Openness to FDI, less corruption, political stability and reliable Legal system are the major determinants of FDI.
Dupasquier and Osakwe (2006)	To examine the performance, promotion and prospects of FDI in Africa. The methodology adopted was a qualitative and Exploratory research technique.	Poor corporate governance, unstable political and economic policies, weak infrastructure, unwelcoming regulatory environments and global competition for FDI are impediments standing in the way of attracting FDI flows and vice versa.
Anyanwu (2011)	To find out the determinants of FDI in Africa. The methodology adopted was Ordinary least square(OLS) and generalised linear model(GLM)	Market size has a positive relationship with FDI. Openness, natural resource endowment and high government consumption expenditure have positive impact on FDI flows while high financial development has negative effect on FDI flow.
Soumyananda (2009)	To find out factors attracting FDI to poor African countries (like Nigeria) in the long run and short run dynamics. The methodology adopted was Time series econometric technique.	Endowment of natural resources, micro economic risk factors and policy variable like openness are significant determinants of FDI inflow in Nigeria. While inflation and exchange rate discourages FDI inflow.
Abdoul (2012)	To find out factors that drive FDI in Africa. The methodology adopted was System generalised method of moment (GMM).	Lagged FDI inflows, trade openness, political stability, Market size and return to investment are significantly and positively linked to FDI inflows.

Source: Author (2014)

The summary of findings on the determinants of FDI in Africa as seen in table 2 shows that the major determinants of FDI in Africa are Market Size, trade openness, political stability, reliable regulatory/legal system while weak infrastructure,

global completion for FDI, natural resources endowment, corruption, return to investment are less significant to attracting FDI to Africa.

**Table 3:** studies on determinants of FDI in Nigeria.

Author	Objective/Methodology	Findings
Obadan (1982)	To find out the major determinants of FDI. The methodology adopted was Ordinary least square technique	Market size, economic growth, infrastructure and government policy are the major determinants of FDI.
Ekpo (1995)	To find out factors that explain the variability of FDI in Nigeria. The methodology adopted was Regression Analysis on a time series data.	Political regime, real income per capita, rate of inflation, world interest rate, credit rating and debt services are the key factors explaining variability of FDI into Nigeria
Anyanwu (1998)	To find out the major Economic determinants of FDI in the country. The methodology adopted was Traditional Econometric technique.	Market size or domestic output, change in domestic investment, indigenisation policy and change in the openness of the economy are the major Economic determination of FDI.
Iyoha (2001)	To find out the major determinants of FDI. The methodology adopted was Traditional Econometric technique	Market size attracts FDI while Inflation and unsuitable Micro Economic policies discourages it.
Ayanwale (2007)	To investigate the empirical relationship between non-extractive FDI and economic growth in Nigeria. As well as determinants of FDI inflows into the Nigerian Economy. The methodology adopted was Single and Simultaneous equation models.	Suggests that Market size, Infrastructural development and stable macroeconomic policy determinants FDI. Openness to trade and human capital are not found to be FDI inducing.
Offiong and Atsu (2014)	To evaluate the determinants of FDI and its implication in Nigeria. The methodology adopted was Multi regression Analysis.	There is a significant relationship between and GDP, wage rate, openness index and Lending rate.
Akenbor and Tennyson (2014)	To analyse the impact of natural assets, market size, infrastructure, human capital, investment policies, population health, and reliability of legal system, corruption and political risk on FDI in Nigeria. The methodology adopted was Multiple regression Analysis.	Market size, natural assets, infrastructure, domestic credit, exchange rate, legal system and population health of the country have a positive relationship with FDI while corruption, human capital development, political risk and trade openness have a negative relationship.
Soumyananda (2014)	To re-examine the determinants of FDI flow to Africa and more specific to Nigeria. The methodology adopted was Time series Econometrics and co- integration techniques.	Endowment of natural resources, trade intensity, macroeconomic risk factors like inflation and exchange rates are significant determinants of FDI to the country.

Source: Author (2014)

The findings from the literature reviewed so far showed that the most significant determinants of FDI flow in Nigeria include Domestic Market size, Openness, Inflation, Exchange rate and micro economic policies. This findings is said to be in line with the study of Soumyananda (2009) [38] except for market size. However infrastructure, Economic growth, endowment of natural resources, corruption and human capital development have a less significant impact on FDI flows to Nigeria.

**5 Conclusion and Recommendation**

This paper examined the determinants of FDI flow into oil and gas sector in Nigeria. Based on our findings, the study concludes that the major determinants of FDI are Domestic Market size, Trade openness, Inflation, Exchange rate and economic policies.

With respect to the ups and down movement of FDI flow in the country, Nigerian government needs to adopt measures to curb inflation and exchange rate variability as this affects the inflow of FDI into the country and in turn the economic growth of the country.

In addition to our findings this study recommends additional variables to be tested as the determinants of FDI. These variables are natural resources endowment and Return on investment. The reason for suggesting this is based on country specific features of Nigeria. Although these variables were insignificant in other African countries based on our study, they might be significant when tested to suit Nigeria peculiarity. Furthermore the study proposes a model for the determinants of FDI in Nigeria as  $FDI = F (MKTSz, OPEN, EXr, ECOp, NREd, RTI)$

Where:

- FDI = Foreign direct investment
- MKTSz = Market size
- OPEN = Trade Openness
- EXr = Exchange rate
- ECOp = Economic policies
- NREd = Natural Resource Endowment
- RTI = return to investment

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