Article

Impact of Insecurity on Foreign Direct Investment in Nigeria: An Empirical Analysis

Nnamdi Azikiwe Journal of Political Science (NAJOPS).
2014, Vol. 4(2)
ISSN: 2992-5924

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Abstract
In the last decade, the character of insecurity in Nigeria has continued to attract attention from diverse quarters. Characterised by factors such as kidnapping, ethnic militancy, youth violence and terrorist attacks on corporate and government properties, the increasing incidence of insecurity in Nigeria has caused the country inestimable economic losses. Despite the weighty effects of the phenomenon of insecurity on the developmental process, literature has not adequately captured the impact of the insecurity problem on foreign direct investment in Nigeria. This study critically discusses the impact of Insecurity on Foreign Direct Investment (FDI) inflows in Nigeria. The variables used in this research are FDI inflow, government expenditure on internal security, population growth rate and GDP per capita. This study covered the period from 1994 to 2010. Ordinary Least Square of Multiple Regression was used while vector error correction mechanism was employed to determine the short-run and long-run relationship among the variables. The study found insecurity to have a negative and significant impact on FDI both in the short run and long run. GDP per capita, used to proxy the market size, has a positive and significant impact on FDI while population has a negative and insignificant effect on FDI. The implication of this result is that the expenditure on security does not get to the required security agents, and it is not channelled properly to provide efficient security for foreign investors in Nigeria. The study therefore recommends that efforts should be geared towards extending the budgeted income to security personnel and the decentralisation of police for increased efficiency.

Keywords
Insecurity, Foreign direct investment, Nigeria, Police

Introduction

The level of insecurity in Nigeria has escalated over the last decade. This has placed Nigeria among the unsafe countries in Africa. Insecurity could mean different things such as food insecurity, health insecurity, financial insecurity, political insecurity, et cetera, but for this study we refer to insecurity as "national internal insecurity" of lives and property in Nigeria. Some of the internal insecurity problems facing Nigeria are political and electioneering conflicts, socio-economic agitation, ethno-religious crisis,

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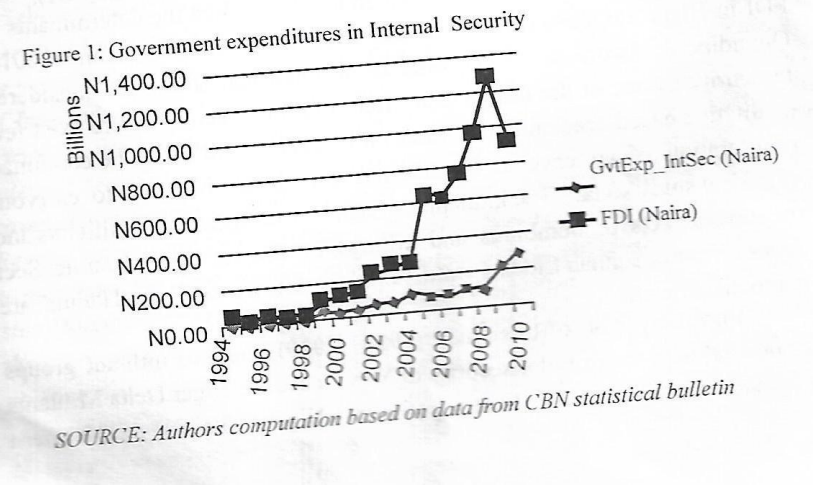
ethnic militants, boundary disputes, cultism, kidnapping and organized crimes (Abubakar, 2005). All these problems contributed to insecurity in the country but the case of ethnic militants is so alarming that President Goodluck Jonathan has called for foreign intervention in the case. The insurgence of militants in the Niger Delta region and the Northern region has led to loss of thousands of lives and property and it has seriously threatened Foreign Direct Investment (FDI).

Although, extensive empirical research has studied the determinants of FDI in Nigeria (Obadan, 1982; Wafure & Abu, 2010; Soumyananda, 2010, Ogundipe & Aworinde, 2011), little or no empirical study has considered insecurity' as one of the factors that affect FDI in Nigeria. There exist few qualitative based academic literatures on Insecurity and FDI. The continued proliferation of violence in Nigeria has called for the need to carryout empirical study so far. The kidnapping saga by the Niger Delta militants and the several acts of bombings and killings by the extremist Islamic Sect Jama'atu ahlis Sunnah Lidda a watu, popularly known as "Boko Haram" are part of these needs.

Within the period of this study (1994 2010), the two militant groups associated with the rise of insecurity in Nigeria are the Niger Delia Militants popularly known as Milita Emancipation for Niger Delta and the Northern based militants popularly known as 'Boko Ilaram" which means that [Western] Education is a sin". These two groups adopted different methods of operation and they fought for different cause. The activities of these militants affect both citizens and foreigners in Nigeria. This threatens the Foreign Direct Investment (FDI) inflow. Many analysts have argued that Nigerian business climate is too risky and unsafe for foreign investors (Idumage, 2009) therefore, this study tends to determine empirically if insecurity in Nigeria has threatened the FDI inflow.

It is imperative to mention that many Nigerians blame government for the insecurity in the country. This is because according to the Constitution of 1999, chapter 12, section 1 "…the security and welfare of the people shall be the primary purpose of government..." Therefore, many Nigerians argue that it is the primary obligation of the federal government to protect lives and properties of its people. For this reason, government spending on internal security was used in the empirical analysis to account for the level of insecurity in the country. This is to help policy makers know if government spending on internal insecurity is enough to provide expected security conscious business environment for foreign investors. It is expected that the higher the government spending the lower the insecurity risk in the country.

Figure 1: Government expenditures in Internal Security



The growth of FDI and government expenditure on internal security is depicted in Figure 1 above. The growth rate of FDI between 1994 and 1998 was stagnant while there is increase from 1999. This increase could be as a result of liberalization and privatization of industries by the civilian government that came into power in 1999. The rapid increase of FDI inflow continued till 1004 where it reduced by 4%, and this was the peak period for Niger Delta militants activities, although the growth picked up shortly after and continued expanding till 2009 before it dropped by 28%. The Central Bank of Nigeria attributed the drop to lack of infrastructure and global financial crisis. However, some Nigerians fear that insecurity in Nigeria could add to the reason for sharp decline.

Government expenditure on internal security has continued to increase over the years but there is conspicuous increase between 2008 and 2010. This increase could be as a result of insurgence of Boko Haram and the effort of the government to minimize the crisis. In summary, the above graph suggests that growth of government expenditure could have impact on FDI inflow to Nigeria.

This paper is organized into six sections. Section 1 is the introduction followed by review of relevant literature in section 2. Methodology, presentation of empirical result, policy recommendation and conclusion make up section 3,4,5 and 6 respectively.

Review of Related Literature

Literature has not done much work to the insecurity problem in Nigeria. Most of the existing works are merely newspaper publications and qualitative research. This could be due to non-availability of quantitative data on insecurity issues in Nigeria. However, available related empirical literatures are on the determinants of FDI in Nigeria and the impact of Terrorism on FDI in developed and developing countries.

Idumange, (2009), in his commentary published by Sahara Reports, argued that insecurity in Nigeria scares potential foreign investors: that even Nigerians invest outside the country because of fear of insecurity and this stunted economic growth. He maintains that regionalization of police is the only panacea for insecurity problem in Nigeria. Most of the Newspaper articles support Idumange's work. (Adewumi, (2011); Abubakar, (2005); Adejumo, (2011); Osae-Brown, (2011); Okorie, (2011); Abdullah, (2012)). Some articles accentuate that it is the duty of government to protect lives and property (Osae-Brown, et al. 2011 & Adewumi, 2011) while emphasized that the intelligence agency is too corrupt and needs to be reformed for effective protection of lives and property (Adejumo, 2011).

However, some empirical literature on the determinants of FDI found market size, natural resources, deregulation, and political instability among other as major factors that affect FDI. (Obadan, 1982; Wafure and Abu 2010; Ogundipe, and Aworinde, 2011) maintains that market size is a major determinant of FDI meanwhile, Wafure and Abu (2010) points out that deregulation has positive and significant effect on FDI. They also reported that political instability has positive and significant relationship with FDI. The result reflects situation in Nigeria because FDI continued to grow despite the political instability in the country.

On the contrary, Soumyananda (2008) found market size to have negative and insignificant relationship with FDI in the long run. He argued that endowment of Natural resources (Oil Sector) is a major factor that attracts FDI to Nigeria. Contrary to his result, Ekweriware (2011) found that FDI on non oil sector has more impact on economic growth in Nigeria. Although the oil sector attracts more FDI, it does not

have significant impact on economic growth. However, all these related literature did not consider insecurity as a threat to FDI. The closest variable to insecurity is the political instability but it did not encompass other insecurity issues in the country. Therefore, the use of insecurity as a determinant of FDI makes the researchers work unique.

Methodology and Data

3.1 Variables of the model: The variables employed in the model are Foreign
Direct Investment Inflow to Nigeria (FDI), Government Expenditure on Internal Security (Int_sec). Gross Domestic Product per capita (GDPPC) and Population Growth Rate (PPR) are the exogenous variables. There are many variables that affect FDI but these variables were selected due to their relevance in this work and their supposedly strong relationship with FDI.

3.2 Model Specification: Empirical evidence has shown that there are many factors that affect FDI in Nigeria. These factors include market size (Obadan, 1982: Wafure & Abu. 2010) Population and terrorist incidence (Alomar & EI-Sakka. 2011). These variables were selected based on their significant impact as reported in other empirical work. Therefore, the basic regression model in functional form is written as follows: -

FDI=f (Int_sec. GDPPC, PPR)
Where FDI Foreign Direct Investment Inflow to Nigeria
Int_sec- Government Expenditure on Internal security
PPR- Population Growth Rate
GDPPC- Gross Domestic Product per capita which served as proxy for market size.
Due to different forms of the data, it will be better to present the model in log form as follows:

Where is the constant; are the coefficients of the parameter estimates; while is the stochastic error term.

3.3 Time Series properties
This rarer used systematic time series econometrics approach to determine the short-run and long-run relationship between the dependent variable and the independent variables. It is conventional to test for unit root in any time-series data because non-stationary data produces spurious result (Brooks, 2008). The presence of unit root will be tested using Augmented Dickey-Fuller Test and Phillips-Perron test for unit root. When the variables are not stationary at level then the model will be tested for cointegration using Johansen Cointegration technique to determine the long-run relationship between the variables. Further, the Error Correction Model will be derived to control for the long-run disequilibrium.

3.4 Data Sources Secondary data were employed for this analysis. The data were obtained from two major sources World Bank Data base (2014) and Central Bank of Nigeria (CBN) Statistical Bulletin (2012). Data for FDI inflow, population growth rate and GDP per capita were obtained from World Bank Data base (retrieved 5 March 2014). FDI inflow is in US$ but was converted to Naira using exchange rate data from CBN statistical bulletin (2012) table D 3.1 while GDP per capita is in constant local currency unit as supplied by the World Bank. Government Expenditure on Internal Security was also collected from CBN Statistical Bulletin 2012. The data used for the analysis covered 1994 to 2012. It started from 1994 due to non-availability of data on government expenditure on internal security for previous years and it ended 2012 because the data for 2013 and 2014 have not been released.

The original data used for this analysis is presented in table 1 on the appendix. It can be seen from the table that there is great variability in the data collected. While some are in Millions of Naira, others are in Rate. Therefore, there is need to close that gap. This led to the logging of the data which is presented in table 2 of the appendix.

Empirical Result

4.1 Unit Root Test: The first step in the model estimation for a time series data is to test for the presence of unit root in the data. Augmented Dickey-Fuller test and Phillips-Perron test for unit root were presented in table 3 in the appendix. The ADF test result of the unit root test revealed that all the variables are stationary at first difference. Government Expenditure on Internal Security is stationary difference while other variables, FDI, GDP per capita and Population growth rate are stationary at second difference at 1 percent critical value. Meanwhile, Phillips-Perron result revealed that all variables are stationary at first differencing.

4.2 Cointegration Test: The cointegration test result presented in table 4 in the appendix indicates that there exist at least one cointegrating equation and it is significant at 5 percent level. This is denoted by * in the table. The likelihood ratio is 56.08 which is greater than the 5 percent critical value of 53.12. This result confirms that there exists a long-run relationship between the dependent variable and the independent variables. The next step is to normalize the long- run coefficients of the variables used.

4.3 Long run relationship between the dependent variable and the independent variables: Normalizing of coefficients of the variables enable researcher to compare the coefficients and determine the long run relationship with FDI. It can be seen from table 5 in the appendix that government expenditure on internal security has negative and significant impact on the FDI inflow. That is, increase in government expenditure on internal security by 1 percent reduces FDI by 1.26 percent. Meanwhile, GDP per capita also has negative and significant impact while population growth rate is positive but insignificant. The implication of this result is that in the long run, government expenditure on internal security is too huge to provide security for FDI in Nigeria. With increase in internal security, FDI is being threatened meaning that the money is not channelled properly to provide the needed security for foreign investors. This could be that government spends more only when there is insecurity in the country and the foreigners are often scared to invest in countries with high risk of insecurity especially in Sub-Sahara African countries. The negative impact of the market size also revealed that in the long run, the market is not buoyant enough to attract FDI. When majority of the citizens earn below one US dollar per day, how could they have excess money to buy foreign goods.

4.4 Short Run Dynamics: Engle and Granger (1987) showed that cointegration implies the existence of an error correction model (ECM). The ECM links the long-run dynamic adjustment mechanism that describes how the variables react when they move out of long-run equilibrium. Therefore, the error correction model is employed to determine the short-run dynamics that might have occurred in estimating the long run relationship. The ECM coefficient, -0.261309, is rightly signed as it has the expected negative sign and it lies between 0 and 1 although it is not statistically significant. The coefficient shows that about 26 percent of the disequilibrium is corrected within one year. The negative sign of the ECM causes the dependent variable to converge to its equilibrium path as the independent variable changes. The coefficient of the internal security remains negative and significant meaning that even in the short run, the government expenditure on internal security does not provide necessary security needed by

foreign investors to invest in the country. Increase in government expenditure on internal security by 1 percent reduces FDI inflow by 82 percent. Other variables seem to be insignificant in the short run. The diagnostic tests indicate that the model is well specified, meeting the conditions of all the tested statistics. The R2 of the short run dynamic is 0.59 approximately 0.60 which is above 50 percent showing that the model is well fitted. The F-statistic value of 4.27, with probability of 0.02, suggests that there exists significant relationship between the depended variable and the independent variables. The Durbin-Watson statistic of approximately 2 show that there is no auto or serial correlation of the first order. Hence, the analysis based on the estimates of the model should be reliable.

Summary, Policy Recommendation and Conclusion

In summary, the result of the empirical analysis discussed in chapter 4 suggests that both in the short-run and long-run internal security in Nigeria as represented by government expenditure on internal security has negative and significant impact on FDI inflows to Nigeria. This result represents the true situation in Nigeria, since many foreign firms (both existing and intending) have left the country because of threats coming from different terrorist groups. The foreign firms are being scared away from investing in the country due to the activities of the militants like MEND in the Niger Delta and Boko Haram in the north. It is obvious that foreigners are the main target of these groups. This leads to negative effect of internal security on foreign direct investment. This suggests that the money being allocated for internal security is not being implemented as it should. For population growth rate, it presents negative but insignificant impact in the long-run. Finally, GDP per capita used to proxy the market size of the economy has positive and insignificant effect on FDI in the short run but turns significant in the long-run. The long-run result describes that the market size is big enough to attract FDI. The insignificant nature of the short run analysis should not send conflicting signal because short-run phenomenon does not offer a lasting solution to socio-economic problem, rather, it explains measures taken at the interim.

The policy implication of the result is that government expenditure on internal security is too huge but does not provide efficient security for FDI in Nigeria. With increase in internal security, FDI is being threatened meaning that the money is not channelled properly to provide the needed security for foreign investors. This could be that government spends more only when there is insecurity in the country and the foreigners are often scared to invest in countries with high risk of insecurity especially in Sub-Sahara African countries. Consequently, it equally means that the budgeted expenditure does not get to the required security agents or is being diverted and used for another purpose altogether. Therefore, war against corruption is very crucial in the body in-charge of internal security. Decentralization of police could also help mitigate this problem and ensure effective and efficient use of the budgeted expenditure. The results also imply that the market size of Nigeria is enough to attract foreign investors to the country. Most of the foreign investors prefer to invest in the developing countries because there is greater market opportunity considering the rate of globalization which makes the world a global market. Although the population growth rate is insignificant both in the short run and long run, it is not enough to discourage foreign investors. Therefore, the policy recommendations are:

1. Government needs to fight corruption and bring the perpetrators to book. This is to enable the budgeted security expenditure get to those concerned and be spent for security purposes. This can step up the security situation in the country.

2. Government needs to decentralize the police since this reduce the hierarchy in the police and make the body easy to control. It would help in better allocation of the government income on security.
3. There is also need to eliminate poverty in the economy by providing employment for the restive youths who are mostly involved in the terrorist activities.

This study empirically analysed the impact of internal security on Foreign Direct Investment, estimating their long run and short run relationships. The study finds that the data used in the analysis are stationary at first difference, and they are also co-integrated. The result revealed that insecurity has negative and significant impact on FDI, while GDP per capita maintain positive and significant impact on FDI in the long run. Moreover, Population growth rate has negative and insignificant impact on FDI. This result implies that insecurity in Nigeria is a big threat to FDI inflows but that the size is the economy is huge enough to attract FDI. The population is not seen as a major determinant of FDI in this work due to its insignificant both in the short run and long run. The researchers, therefore, conclude that budgeted security income should get to the targeted personnel for effective and efficient disbursement on security issues. Also, Nigerian police should be more responsible in handling sensitive matters and needs to be decentralized for effective operations.

APPENDIX

Table 1: Original Data

Year	FDI inflow (US$)	Exchange Rate	FDI inflow ((Naira)	GDP per capita	Internal security	Population growth rate
1994	1.96E+09	21.996	89071643	2738	4,395.77	2.5
1995	1.08E+09	21.89526	49292479	2662	5,257.60	2.5
1996	1.59E+09	21.88443	72812478	2726	11,159.39	2.5
1997	1.54E+09	21.88606	70339130	2733	11,062.56	2.5
1998	1.05E_09	21.886	48036472	2738	11,982.46	2.5
1999	1E+09	92.3381	10883013	2683	38,663.97	2.5
2000	1.14E+09	101.6973	11211087	2756	25,154.67	2.5
2001	1.19E+09	111.2313	10704114	2806	38,853.05	2.5
2002	1.87E+09	120.5782	15542136	2839	63,236.06	2.5
2003	2.01E+09	129.2224	15518910	3055	68,379.71	2.5
2004	1.87E+09	132.888	14102347	3982	97,799.99	2.6

2005	4.98E+09	131.2743	37955127	4013	81,950.09	2.6
2006	4.85E+09	128.6517	37733028	4229	117,955.24	2.6
2007	6.03E+09	125.8081	47969653	4399	181,285.14	2.7
2008	8.2E+09	118.546	69142827	4551	196,901.82	2.7
2009	8.55E+09	148.9017	57452926	4736	221,649.82	2.7
2010	6.05E+09	150.298	40243778	4969	224,196.59	2.7
2011	8.84E+09	153.8616	57466923	5161	279,963.07	2.8
2012	7.1E+09	157.4994	45086088	5347	362,500.00	2.8

Sources: FDI World Bank Data (2014) and CBN statistical bulletin 2012

Table 2: Logged Form of the Data

LnFDI	Lnlnt sec	Ppr	Lngdppc
18.30495	8.388397	2.5	7.914983
17.71328	8.56743	2.5	7.886833
18.1034	9.320037	2.5	7.910591
18.06884	9.311322	2.5	7.913155
17.68747	9.391199	2.5	7.914983
16.20271	10.56266	2.5	7.894691
16.23241	10.1328	2.5	7.921536
16.18614	10.56754	2.5	7.939515
16.55907	11.05463	2.5	7.951207
16.55757	11.13283	2.5	8.024535
16.46185	11.49068	2.6	8.289539
17.45192	11.31387	2.6	8907794
17.44605	11.67806	2.6	8.349721
17.68608	12.10783	2.7	8389133
18.05168	12.19046	2.7	8.473102
17.86648	12.30885	2.7	8.462948
17.51047	12.32028	2.7	8.510974
17.86672	12.54241	2.8	8.548886
17.62408	12.80078	2.8	8.584291

Source: Authors computation based on data from World Bank and CBN

Table 3: Result of Unit Root Test

Variable	ADF test statistic	Order of Integration	PP test Statistics	Order of Integration
LNFDI	-4.2579	1(2)	-4.09621	1(1)
LnInt_Sec	-5.7171	1(1)	-4.0487	1(1)

LnGDPPC	-4.2010	1(2)	-2.7046	1(1)
PPR, 2	-6.0831	1(2)	-4.000	1(1)
Critical value for ADF	1% = -3.9635 5%= -3.0818 10%= -2.6829		Critical value forPP	1%=2.7158 5%=-1.9627 10%=-1.6262

Source: Authors Computation

Table 4: Johansen Test for Cointegration

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.717238	56.07622	53.12	60.16	None *
0.668503	34.60266	34.91	41.07	At most 1
0.481366	15.83232	19.96	24.60	At most 2
0.240243	4.670853	9.24	12.97	At most 3

*Denotes rejection of the hypothesis at 5% significance level
Source: Authors computation

Loh likelihood	52.62773			
LNFDI	6.207563**	-1264820***	PPR	C
1.000000	(2.70645)	(0.22537)	(6.57597)	(6.79590)
T-Statistics				

Note: ***(**) means significant at 1% (5%) significant level. Standard error in parenthesis

Dependent variables: LNFDI (-2)				
Variable	Coefficient	Std. Eror	t-statistics	Prob
LNINT_SEC (-1)	-0.816480	0.250129	-3.264236	0.0068
LNGDPPC (-2)	2.214498	2.941798	0.752770	0.4661
PPR (-2)	6.072385	6.730945	0.902159	0.3847
ECM	-0.261309	0.392557	-0.665658	0.5182
C	-7.310487	8.398766	-0.870424	0.4011

R-squared	0.587410	Mens dependent var	17.29943
Adjusted R-squared	0.449880	S.D. dependent var	0.753253
S.E of regression	0.558688	Akaike info criterion	1.913479
Sum squared resid	3.745593	Schwarz criterion	2.158542
Log likelihood	-11.26457	f-statistic	4.271145
Durbin-Watson stat	2.100426	Prob (F-statistic)	0.022319

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