
THE CONTRIBUTION OF FOREIGN DIRECT INVESTMENT TO NIGERIA'S MANUFACTURING OUTPUT: AN EMPIRICAL INVESTIGATION

DABWOR TONGNAN DALIS

E-mail address: tongnandalis@yahoo.com

ABSTRACT

The attraction of Foreign Direct Investment to a nation is a macroeconomic goal that is worth pursuing because of its impact on the economic growth and development to the recipient economy. Therefore, this paper seeks to investigate the contribution of FDI flows to Nigeria's manufacturing sector. FDI is seen as an external source of capital to domestic firms and it is expected to impact positively on productivity. The major objective of the paper is to determine whether the manufacturing sector in Nigeria has benefitted from FDI flows in terms of improving productivity from 1990 – 2009. The paper equally seeks to know whether political environment is a key factor in determining FDI flows to Nigeria. To achieve the first objective a simple regression was carried out to determine the impact of FDI on manufacturing output. For the second objective the study employed a Cho-test to determine whether there has been a structural change in FDI flows to Nigeria as a result of transition from military to civilian rule. The paper found out that FDI has not impacted significantly on manufacturing output however; there has been a structural change in the flow of FDI between military and civilian regimes. The structural break occurred in 1999. Therefore the paper recommends that Nigeria should improve its infrastructural provision, sustain its democratic rule, reduce the cost of doing business and monitor the activities of international finance agencies/multinational cooperation in order to benefit from FDI flows.

Keywords: Foreign Direct Investment (FDI), Manufacturing Output in Nigeria. JEL Classification Number: F14, F21, L60

I INTRODUCTION

Nigeria, like many other developing countries is trapped in the low saving investment cycle; therefore the country is dependent on foreign capital flow to stimulate economic growth in all sectors of the economy. Historically, Nigeria was a net exporter of agricultural goods from pre-independence era to the early 1970s. As the agricultural sector was growing the manufacturing sector was equally expanding in number and output. From the mid 1970s Nigeria became one of the world's leading oil exporting countries, which has attracted enormous foreign direct investment inflows compared to other sub-Saharan Africa countries.

For Nigeria firms, especially the manufacturing sector, the investment climate survey data and other indicators suggest that finance imposes important constraints on business expansion (World Bank, 2009). According to Akpan (2008) an international comparison of domestic credit to the private sector underscores the lack of depth of the Nigerian financial sector (measured by M2/GDP). Dynamic economies such as Malaysia and South Africa are at 177 percent and 78 percent respectively, whereas Nigeria at 18 percent GDP remains below the sub-Saharan Africa average of 30 percent. Also intermediation to the private sector (measured by credit to the private sector/GDP) remains below peer countries such as South Africa, Malaysia, Indonesia, Brazil and Ghana. Nigeria's private sector in general and the manufacturing sector in particular is starved of credit (World Bank, 2009).

The importance of access to capital for productive sectors of an economy is evident from China's success story. China's dynamic economy has been expanding at double digit rates because of the strength of its manufacturing sector which enjoys the services of local banks, capital market and foreign capital flows (World Bank, 2010).

Udejaja, Udoh and Ebong (2008) observed the trends in FDI inflows to Nigeria and concluded that the mining and quarrying sector accounted for largest proportion of FDI in most of the 1970s. However, in the 1980s, this dominance was broken by the manufacturing sector Udejaja et al (2008). Some of the questions that we intend to address in this paper are:

- * What determines the flow of FDI to the manufacturing sector in Nigeria?
- * has the flow of FDI impacted on Nigeria's manufacturing output growth?
- * What are the challenges facing smooth flow of FDI in Nigeria?
- * How can these challenges be mitigated upon?

This paper lay emphasis on the manufacturing sector is because; the sector is regarded as the key to the industrial development needed to stimulate rapid growth and development of the domestic economy. Government's concerted efforts at developing the sector were premised on the hope that it would help to generate employment opportunities, create greater sectoral linkages, diversify the economy, increase foreign exchange earnings, enable local labour acquire skills, lead to fullest utilization of available resources and minimize the risk of over dependent on foreign trade. Whether FDI has impacted positively on this sector or is it a conduit pipe for repatriation of surplus, is an issue worth investigating. Specifically attention will

be laid on the impact of political and macroeconomic environment in FDI flow in Nigeria.

It is on the basis of the foregoing, this paper seeks to investigate the contribution of FDI to Nigeria's manufacturing output growth, to determine the existence or otherwise of structural change in the flow of FDI, to identify the impediments to flow of FDI in Nigeria and to proffer solutions to the problems identified. To achieve these objectives, the paper is organized into five chapters. Following this introduction is a review of related literature on determinants of FDI flows. Section three presents the trends of FDI flow in Nigeria; Section Four captures the Methodology, data analysis and interpretation while section five presents policy recommendation and conclusion.

II DETERMINANTS OF FDI FLOWS IN DEVELOPING COUNTRIES: EXISTING LITERATURE

The direction of private capital flow is generally explained by two broad classes of factors "the push factors" and "the pull factors". The "push factors" theory examines the key factors that could motivate multinational corporations (MNCs) to want to expand their businesses overseas. These theories attribute the direction of capital flows to international business climate such as a fall in international interest rates, business cycles in industrial countries and an improvement in international diversification (Calvo, et al, 1996; Calvo and Reinhart, 1998 and Udejaja et al, 2008). In addition, an unfavourable fiscal policies in the home countries of MNCs such as heavy tax burden has been found to be a key push factor

The second is called "the pull factor" theory which traces the causes of capital flows to such domestic factors as autonomous

increase in domestic money demand function, increases in domestic productivity of capital (U1 Haque, Mathiesan and Sharma, 1997), improvement in external creditor relations, adoption of sound fiscal and monetary policies and neighborhood externalities (Calvo et al 1996). The theory also suggests that the presence of National resources may also present a strong location specific advantage in attracting FDI to a host country. Under this framework, capital flows may be a result of host government's initiative through economic policies and incentive to attract foreign capital, encourage import-substituting and export-promoting MNCs (Akinkugbe, 2003).

With regards to the recent upsurge in capital flows to developing countries both pull and push factors have been identified as the driving forces. Calvo et al (1993) attribute the recent increase in FDI inflows to the developing countries to the decline in the rates of interest on US bonds, particularly in the 1990s. This development has important implication for sustainability of foreign investment and hence, policy design. If it is lower interest rate that is responsible for an upsurge in FDI flow to developing countries, it therefore implies that a reversal in such rates would threaten the sustainability of capital flows.

Other researchers infer that economic reforms in the form of privatization of public enterprises, liberalization of foreign exchange market rates and capital accounts coupled with stable macroeconomic environment have improved creditworthiness, increased international competitiveness of the domestic economy and expanded investment opportunities. These scholars concluded that transparent policy can act as a location specific advantage to the host country (Kaufman and Wei, 1999 and Smarzynka and Wei, 2000). Drabek and Payne (1999), for instance, found from a simulation

exercise that a country could expect a 40 percent increase in FDI from a mere one point increase in its transparency ranking. This is corroborated by Wei (1999) who found that taxes, capital control and corruption all have significant inverse effect on FDI.

All the factors mentioned above still fall into either pull or push factors. One determinant that is ignored in the literature of FDI is “the theory of imperialism and dependency”. Lenin (1918) and Baran (1957) defined imperialism as, “Capitalism at that stage of development, at which the dominance of monopolies and finance capital is established, in which the export of capital has acquired pronounced importance in which the division of the world among capitalist trust have began; and in which the division of the territories among the biggest capitalist powers have been completed.”

This theory fits the developing world and Africa in particular. The dependency theory is the brain child of classical Marxism such as Andre Gunder Frank, Samir Amin, Walter Rodney, Paul Baran and Emmanuel Wallestein. The theory argued that an equitable distribution of trade benefits cannot be obtained within a capitalist system characterized by gross exploitation of weaker nations and that foreign trade, to which FDI is an integral part, is tantamount to imperialism (Karl 1848, Ike and Akinsanya, 2000). It is the view of Lenin 1918, Baran 1957 that the processes of concentration and consolidation of business through improved technology and also through intense competition that led to the emergence of big corporations variously called Multinational Corporation (MNCs). This process was accompanied by the merger of finance and industrial capital into what Hilfarding termed “monopoly capital”. The rise of cartels, trusts and combines was a product of diversification of major companies through forward, backward and sideways integration, the

buy-over and co-option of smaller producers and the globalization of production and trade. This period was characterized by massive movement of capital abroad in the name of FDI (Rufai, 1997),

Imperialism and dependency theory concluded that capitalism has polarized the world into “centre” and “periphery”, and that profit maximization and international market is under the monopoly control of the ‘centre’ that operates at the detriment of less developed countries (LDCs) tied to it, Under this unequal relationship, the developing countries do not have the financial muscle to take advantage of either pull or push factors or neighborhood externalities and as a result these countries hardly benefit significantly from FDI flows. Nigeria for instance, possess both pull and push factors yet her FDI flows remains insignificant in terms of impacting on key sectors of the economy such as manufacturing.

The imperialism and dependency theory notwithstanding, some African countries are doing well in attracting huge FDI flows. Using data for 29 African countries, Morriset (2000) found that Mozambique, Namibia, Senegal and Mali were perceived as countries with the most attractive investment environment, these countries were also found to be able to attract substantial FDI flows more than countries that have bigger local markets such as Kenya, Cameroun and Congo and or natural resource endowed countries, such as: Congo and Zimbabwe. The implication of Morriset research is that improving business climate eliminating or reducing corruption promoting macroeconomic and political stability could be incentives for potential foreign investors.

Studies on the determination of FDI in Nigeria are not new. Alabi (2003) has conducted a research on the determinant of type of FDI flows in Nigeria and Udeaja et al (2008) investigated the

determinant of FDI in Nigeria across sectors. This paper intends to examine the contribution of FDI to Nigeria's manufacturing output growth. The paper acknowledged the fact that there could be increase in FDI flows to a country, but this increase does not automatically translate into increase productivity.

III THE TRENDS OF FDI FLOWS IN NIGERIA

At the eve of Nigeria's independence to the 1980s, when imperialism and dependency hypothesis flourished, FDI was viewed as an instrument for political and socio-economic domination of weaker nations. Consequently, the policy thrust of the Nigerian government then was to reduce foreign investment in the country through the Nigeria Enterprise Promotion Decree (NEPD) promulgated in 1972 and as amended in 1977. This policy resulted in a decline in foreign investment and slowed down the pace of economic activities in all sectors of the economy (Ndebbio and Ekpo, 1994).

Lack of competitiveness, openness and the debt crises that set in during the second republic (1979–1983) provided the stage for the present economic woes of Nigeria. By 1986, the Nigerian government introduced the Structural Adjustment Programme (SAP). The programme was geared towards diversifying the economy, but as we all know SAP was a colossal failure and this impacted negatively on macroeconomic indicators including FDI. For instance, net FDI inflow in Nigeria as percentage of Gross Domestic Product from 1970 to 1985 averaged 0.7 percent, from 1991 to 2000 FDI flows improved to an average of 3.81 percent while from 2001 to 2006, FDI flows increased to an average of 5.2 percent (Udejaja, Udoh and Ebong, 2008).

The statistics above seems to suggest that macroeconomic policies under democratic government positively impacted on FDI flows. During the latter half of the 1990s, the annual net flow of FDI in Nigeria averaged between ₦26.2 billion, with a cumulative investment totaling ₦154.2 billion at the end of 1999. This amount is equal to about half of Nigeria's GDP for that year. It is generally known that FDI to less developed countries increased substantially in the 1990s. Thus in 1998, net inflow of FDI to Nigeria was ₦24.1 billion which was about 3.8 percent of GDP. This figure was greater than the sub-Saharan Africa average, which stood at 1.32 percent, making Nigeria one of the major recipients of FDI in Africa, together with South Africa, Egypt, Morocco and Tunisia, in that order (CBN, 2009). The table below shows the percentage of distribution of FDI to Nigeria's manufacturing sector (1990–2008).

Table I: Percentage Flow of Foreign Direct Investment to Nigeria's Manufacturing Sector (1990-2008).

Years	Manufacturing and Process
1990	60.74
1991	70.99
1992	47.51
1993	19.29
1994	19.88
1995	23.17
1996	24.32
1997	24.39
1998	22.64
1999	23.53
2000	23.70
2001	23.40
2002	23.98

2003	25.44
2004	41.26
2005	41.31
2006	44.09
2007	39.86
2008	45.01

Source: Central Bank of Nigeria Bulletin, 2009.

According to CBN (2008) there was huge FDI flows in the mining and quarrying sector in the 70s – Although, the import substitution industrialization strategy encouraged investment in the manufacturing. The oil glut of the late 70s and 80s together with global economic recession significantly affected the flow of investment into all sectors. Despite the general decline, the manufacturing sector benefitted most from FDI inflows as it accounted for the largest proportion of cumulative FDI for many years between 1978 and 1988. This dominance continued till the early 1990s when the rising share of mining and quarrying sector overtook the manufacturing sector. However, as from 2004, the manufacturing sector regained its dominance.

This fluctuation in FDI flows to Nigeria's manufacturing and processing sector negates the "agglomeration hypothesis" of FDI flows, which states that there is inherent tendency for FDI to be pushed or pulled into regions or sectors, because of previous inflows into that region or sector.

Table II: The Growth Rates of FDI Flows and Manufacturing Output in Nigeria (1990-2009)

Years	Growth rate of manufacturing and processing output	Growth rate of Foreign private investment (An index for FDI)
1990	4.9	17.2
1991	9.4	37.1

1992	-4.1	12.1
1993	-3.7	32.2
1994	-1.3	9.1
1995	-5.2	96.8
1996	0.8	7.8
1997	0.4	5.0
1998	-6.9	10.2
1999	3.4	5.2
2000	3.4	2.9
2001	7.0	1.2
2002	10.1	5.8
2003	5.7	14.4
2004	11.9	125.3
2005	9.6	30.0
2006	9.4	58.9
2007	9.6	58.9
2008	8.9	-29.0
2009	7.9	11.8

Source: CBN Statistical Bulletin, 2010.

Table II reveals that the relationship between the growth rate and manufacturing and processing output and growth rate of FDI flows in Nigeria was weak and unstable from 1990 to 1999. This period coincided with the period of political instability in Nigeria. However, with the entrenchment of democratic rule in the second quarter of 1999, flows of FDI began to increase with relative improvement in the growth rate of manufacturing and processing output. The correlation between FDI and manufacturing output cannot be said to be strong in Nigeria based on Table II. In 1995 for sample, when growth rate of FDI was 96.8% the growth rate of manufacturing output declined to -5.2%. In 2008, FDI flow dropped to -29.0%, the corresponding value for manufacturing output rose to 8.9%, higher

than 2009 (7.9%) for manufacturing sector when FDI was 11.8%. The inconsistencies and contradictions are indicative of the fact that the real sector (manufacturing) is not the major beneficiary of FDI to flow to Nigeria in the period under review.

Table III: Business Environment Ranking

	Scores (Out of 10 2002 – 06)	2007 – 11	(Rank out of 82 countries 2002-06)	2007 – 11
Overall scores and ranks	4.46	4.88	74	75
Political Environment	3.1	3.1	80	78
Political Stability	4.0	3.6	75	78
Political Effectiveness	23	2.6	80	79
Macroeconomic environment	7.2	7.5	45	44
Market Opportunities	6.9	6.5	22	35
Policy towards private enterprise and competition	2.8	2.8	77	78
Policy toward foreign investment	5.1	5.5	66	70
Foreign trade and exchange controls	3.3	4.6	78	70
Taxes	5.6	5.2	42	71
Financing	4.0	5.9	65	60
Labour Market	5.0	4.8	72	80
Infrastructure	1.8	3.0	82	79

Source: The Economist Intelligence Unit Limited, 2011.

From table III, where Nigeria's business environment ranking shows Nigeria performed poorly in most of the indicators from 2002 – 2011, except in the areas of macro economic environment, market opportunities and taxes. The worse performance was in the area of infrastructural development where the country scored 1.8 and 3.0 out

of 10 points for the periods 2002-2006 and 2007 – 2011 respectively. In terms of business environment ranking from 2002-2011, the country came 22nd and 35th out of 82 nations. For the periods (2002-2006) and (2007-2011) respectively, macroeconomic environment was ranked 45 and 44 respectively for the two period out of 82. Taxation came 42nd in 2002-2006 and 71 and in 2007 – 2011. In the other indicators, Nigeria performed decimally, especially, in infrastructural development, the country came last in the period 2002 – 2006 and 3rd from the rear in the period 2007-2011. The poor performance of Nigeria in the business environment is attributable to many factors, these include

Political ineffectiveness, irresponsible leadership, corruption, ethno-cultural and religious crises, advance fee fraud (419), fiscal indiscipline and non execution and disregards for contractual terms. These have made Nigeria's FDI pull factors unattractive.

IV METHODOLOGY AND DATA ANALYSIS

The paper employed a simple regression analysis to estimate the productive coefficient of the explanatory variable FDI and other statistics such as Durbin Watson. Other tests carried out are Unit Root Test to determine whether the data is stationary or not and at what level of differencing. Both Heteroscedasticity and auto-correlational tests were carried out to determine whether the stochastic error terms exhibit constant variance and are independent of each other from period to period respectively. A negation of any of these assumptions with respect to the error term renders the estimated parameter inefficient and also its predictive power ineffective (Koutsoyiannis, 1977). In achieving this we used "Heteroscedasticity and Autocorrelation Consistent (HAC) Standard

Errors technique. This process simply adjusts the standard errors and restores homoscedasticity and at the same time eliminates autocorrelation (Gujarati, 2004).

The model is presented thus:

$$MFO = f (FDI) \dots \dots \dots (1)$$

Where MFO = Manufacturing Output

FDI = Foreign Direct Investment.

The regression equation is of the form;

$$MFO_t = \beta_0 + \beta_1 FDI_t + u_t \dots \dots (2)$$

Where u_t = Error term in period t .

β_0, β_1 are the parameters to be estimated.

On theoretical grounds, we expect FDI to have a positive impact on manufacturing output. Therefore, $(\beta_0, \beta_1 > 0)$.

The data used for this analysis is taken from table II above.

A Cho-test and Stability Test were conducted to establish whether there is any structural change in the flow of FDI in Nigeria. The paper also employed a Granger Causality test. See appendix for the results. The software used for this analysis is called GRETL: Gnu Regression, Econometrics and Time Series Library.

RESULT, PRESENTATION AND INTERPRETATION.

The Regression Result:

$$\begin{aligned} MFO &= 0.159388 + 0.005253 FDI \\ SE &= (0.748070) (0.027023) \\ t^* &= [0.2131] [0.1944] \end{aligned}$$

R^2 0.002486 Adj R^2 – 0.056191

Durbin Watson 2.807610.

The regression result reveals that a 1 percent increase in FDI flow into Nigeria leads to a less than 1 percent increase in manufacturing output. This means that FDI has diminishing marginal productivity in Nigeria's manufacturing sector for the period under study. The coefficient of determination indicates that only less than 1 percent variation in manufacturing output is caused by FDI flows. The result shows that the disturbance errors are homoscedastic and independent from one period to another. (i.e. absent of serial correlation). One would observe that $DW = 2.8076010$ implies the presence of negative serial correlation based on the "rule of thumb". But this is not so because of the application of "Heteroscedasticity and Autocorrelation consistent" (HAC) Standard Errors procedure. This has adjusted and eliminated heteroscedasticity and autocorrelation in the model. The Cho and stability tests affirm that there has been structural change in the flow of FDI in Nigeria and that the breaking point was 1999, after which FDI flow became stable. This period coincided with the time of political transition from military to civilian rule

The implication of this finding is that political and macroeconomic environments play a crucial role in determining the flow of FDI and promoting domestic productivity. Without a stable and efficient political environment, macroeconomic stability becomes an illusion. The result is true of Nigeria because during Abacha's regime, Nigeria became a pariah State; both economic and political relations at the international level were at their lowest ebb. Another revelation of this paper is the fact that, increase FDI flows to a recipient country

does not necessary translates to increase domestic production and employment. For a developing country like Nigeria, there are factors that could adversely affect FDI productivity, these include poor infrastructure, high cost of doing business, policy inconsistency and unstable political environment.

V. RECOMMENDATION AND CONCLUSION

From the forgoing, the paper wishes to proffer the following recommendations

- * Government should provide conducive environment to burst the confidence of the international community to do business in Nigeria. This, the government can do through providing legislation that will protect property right, maintaining security and stabilizing the polity i.e. entrenching rule of law as oppose to “rule of men” as it were during the military.
- * The cost of doing business is relatively higher in Nigeria. Reducing the cost of doing business will help attract more FDIs into the country. The basic impediments such as corruption, inaccessibility to capital for investment, gratification and poor power supply need urgent attention by government. If these obstacles are reduced to their lowest minimum, Nigeria would have improved on her pull factors and at the same time reduce cost of doing business significantly. The independent power project (IPP) is a right step in the right direction.
- * The provision and maintenance of infrastructure is sacrosanct to attracting FDI and improvement of productivity in the economy generally and the manufacturing sector in particular. As we saw in table III, Nigeria came last in infrastructural development out of 82 from (2002-2006) and was ranked 79 (3rd) from the rear from (2006 – 2011). This trend must be reversed immediately through

increase budgetary allocations for provision and maintenance of infrastructure..

- * Nigerians should be interested in the measurement of productivity and specific activities of MNCs through their FDI flows instead measuring only the quantity of FDI flows into the country. As we have seen in this paper, FDI flows have increased over the years but there has been no commensurate increase in productivity for the period under study. This is expected to check the exploitation of the recipient country through repatriation of surplus abroad. For the ease of assessment of productivity, FDI flows should not be country specific only but should be sector specific.

CONCLUSION

The flows of FDI to a country is one of the indicators the country's openness, transparency in doing business and favorable trade relations. FDI flows should therefore promote capital flow, increase productivity and also transfer technology to the recipient country. However, this is not the case in Nigeria; the paper shows that though the productivity coefficient of FDI is positive but very insignificant in Nigeria's manufacturing. Once the impact of FDI is not felt in this sector, it will be difficult to feel its impact in any other sector. This is because of the sector's ability to generate employment, revenue, output and its multiplying effects on other sectors. The paper concludes that while it is necessary to provide both economic and political environment that will attract FDI besides provision of infrastructure, the government should monitor the activities of International Finance Agencies and Multinational corporations to protect capital flows from falling into the hands of terrorist groups or becoming an instrument of imperialism.

REFERENCES

- Akinkugbe, O. (2003). "Flow of Foreign Direct Investment to Hitherto Neglected Developing Countries", *WIDER Discussion Paper No. 2003/02*, Helsinki: UNU-WIDER.
- Akinsaya, A. O. (2002) "Recent Theoretical Explanations of Industrial Development Countries" Processed Paper.
- Akpan, D.B (2008) "Financial Liberalization and Endogenous Growth in Nigeria" *CBN Economic and Financial Review*; Vol. 46(2) June. Pp1-4.
- Alaba, O. (2003). "Exchange Rates Volatility and Foreign Direct Investment in Nigeria" *A paper presented at the WIDER Conference on Sharing Global Prosperity*, Helsinki, Finland, 6 -7 September.
- Baran, P. (1957) "Political Economy of Growth: Monthly Review Press.
- Calvo et al (1993) "Capital Flows and Real Exchange Appreciation in Latin America: The Role of External Factors" *IMF Staff Papers*, Vol. 40 (1), Washington, D.C.
- _____ (1996) "Inflows of Capital to Developing Countries in the 1990s" *Journal of Economic Perspectives* Vol. 10 (2)
- _____ (1998) "The Consequences of Management of Capital Inflows: Lesson for Sub-Saharan Africa" *Export Group on Development Issues*, International.
- Drabek, Z and Pane, W. (1999). "The Impact of Transparency on Foreign Direct Investment" *Staff Working Paper ERAD – 99 – 02*. Geneva: World Trade Organization.

- Karl, M. (1845) "The Communist Manifesto: A Contribution to the Critique of Political Economy. Retrieved from [http://en.wikipedia.org/eik/Karl Marx](http://en.wikipedia.org/eik/Karl%20Marx).
- Kaufman, D and Wei, S. (1999) "Does "Grease Money" Speed Up the Wheels of Commerce?" *Policy Research Working Paper* 254. Washington, D.C. World Bank.
- Koutsoyiannis, A (1977) "*Theory of Econometrics*. London: MACMILLAN PRESS LTD
- Lenin, V.I. (1918) "*Imperialism the Highest State of Capitalism*". Progress Publishers.
- Morisset, J. (2000) "Foreign Direct Investment in Africa: Policies Also Matter" "*World Bank Working Paper*, No. 2481, Washington, D.C.
- Ndebbio, J.E.U. and Ekpo, A. H. (1994) (eds) *The Nigeria Economy at the Cross Road: Policies and their Effectiveness*. Calabar: University of Calabar Press.
- Rufai, A. A. (1997) "*The World Bank and Nigeria: Cornucopia or Pandora's Box?*" Kaduna, Baraka Press and Publisher Ltd.
- Smarzynska, B.K. and Wei, S. (2000) "Corruption and Composition of Foreign Direct Investment: Firm-Level Evidence", *Policy Research Work Paper* 2360. Washington, D.C. World Bank.
- U1. Heique, N. Mathiesan D and Sharma, S (1997). "Causes of Capital Inflows and Policy Responses to them" *Finance and Development*, Vol. 34 (1).
- Udejaja, E. A., Udoh, E. and Ebong, F.S. (2008) "Do Determinants of Foreign Direct Investment in Nigeria Differ Across Sectors? An Empirical Assessment" *CBN Economic and Financial Review*, Vol. 46 (2), June pp3-40.

” Do Determinant of Foreign Direct Investment in Nigeria Differ Across Sectors? An Empirical Assessment. *Economic and Financial Review*, Vol. 46 (2).

Wei, S. (1999) “Does Corruption Relieve Foreign Investors of the Burden of taxes and Capital Controls”. *Policy Research Working Paper No. 2209* Washington, D.C.: World Bank.

World Bank (2009) “*An Assessment of the Investment Climate in Nigeria*”: Washington, D.C. USA.

World Bank (2010) *Knowledge, Productivity, and Innovations in Nigeria: Creating a New Economy*. Washington, D.C., USA.

APPENDIX 1

UNIT ROOT TEST

Augmented Dickey-Fuller test for d_GMP_OUTPUT

Including one lag of (1-L)d_GMP_OUTPUT

Sample size 17

Unit-root null hypothesis: $a = 1$ test without constant

Model: $(1-L)y = (a-1)*y(-1) + \dots + e$

1st-order autocorrelation coeff. for e: -0.093

Estimated value of $(a - 1)$: -1.62281

Test statistic: $\tau_{nc}(1) = -4.81454$

asymptotic p-value 1.799e-006

Augmented Dickey-Fuller test for d_GFDI

Including one lag of (1-L)d_GFDI

Sample size 17

Unit-root null hypothesis: $a = 1$ test without constant

Model: $(1-L)y = (a-1)*y(-1) + \dots + e$

1st-order autocorrelation coeff. for e: -0.004

Estimated value of $(a - 1)$: -1.73503

Test statistic: $\tau_{nc}(1) = -3.82693$

Asymptotic p-value 0.0001303

APPENDIX II.

REGRESSION RESULT

Model 1: OLS estimates using the 19 observations 1991-2009

Dependent variable: d_GMP_OUTPUT

HAC standard errors, bandwidth 2 (Bartlett kernel)

	coefficient	std. error	t-ratio	p-value
const	0.159388	0.748070	0.2131	0.8338
d_GFDI	0.00525331	0.0270230	0.1944	0.8482

Mean dependent var 0.157895 S.D. dependent var 5.312074

Sum squared resid 506.6637 S.E. of regression 5.459281

R-squared 0.002486 Adjusted R-squared -0.056191

F(1, 17) 0.037792 P-value(F) 0.848166

Log-likelihood -58.15221 Akaike criterion 120.3044

Schwarz criterion 122.1933 Hannan-Quinn 120.6241

rho -0.424959 Durbin-Watson 2.807610

White's test for **heteroskedasticity** - Null hypothesis:

heteroskedasticity not present

Test statistic: LM = 0.156516

With p-value = $P(\text{Chi-Square}(2) > 0.156516) = 0.924726$

LM test for **autocorrelation** up to order 1-Null hypothesis: no autocorrelation

Test statistic: LMF = 3.64216

With p-value = $P(F(1,16) > 3.64216) = 0.0744405$

APPENDIX III

CHOW TEST

Augmented regression for Chow test

OLS estimates using the 19 observations 1991-2009

Dependent variable: d_GMP_OUTPUT

HAC standard errors, bandwidth 2 (Bartlett kernel)

	coefficient	std. error	t-ratio	p-value
const	-1.50290	1.31107	-1.146	0.2696
d_GFDI	-0.0318878	0.0349537	-0.9123	0.3760
splitdum	2.84428	1.83677	1.549	0.1423
sd_d_GFDI	0.0598910	0.0359954	1.664	0.1169

Mean dependent var 0.157895 S.D. dependent var 5.312074

Sum squared resid 431.1132 S.E. of regression 5.361052

R-squared 0.151229 Adjusted R-squared -0.018525

F(3, 15) 5.872097 P-value(F) 0.007368

Log-likelihood -56.61818 Akaike criterion 121.2364

Schwarz criterion 125.0141 Hannan-Quinn 121.8757

rho -0.446576 Durbin-Watson 2.737661

Chow test for structural break at observation 1999

Chi-square (2) = 8.84936 with p-value 0.0120

F-form: F(2, 15) = 4.42468 with p-value 0.0309

APPENDIX IV

STABILITY TEST

