Double Taxation Treaty and Foreign Direct Investment: The Nigeria evidence

Felix Erhinyoja ERHIRHIE, Joy Omeghie OSEMWEGIE-ERO

Tax Audit Department, Delta State Board of Internal Revenue.
Department of Accounting, Benson Idahosa University, GRA, Benin.
Corresponding Author: Felix Erhinyoja ERHIRHIE

ABSTRACT: *The quest to magnetize more foreign direct investments (FDI) due to its direct impact on economic development has become the most glaring purport of countries signing Double Taxation Treaties (DTTs) with other countries. However, whether or not DTTs has incremented FDI in Nigeria as a country remains the vocal point of many pundits. This study empirical examined the relationship between double taxation treaties and FDI in Nigeria. The secondary data source was employed as extracted from several editions of the Central Bank of Nigeria (CBN) statistical bulletins from 1976 to 2016. The unit root test was employed to ascertain the stationary state of the variables in the model which was estimated using the ordinary least squares method. The result suggests that DTT is positively related with FDI, but not statistically significant. The study recommends that Nigerian government should focus on provision of adequate infrastructural development and favourable investment policies in order to encourage indigenous local investors.*

Keywords: Foreign direct investment, double taxation treaty, bilateral agreement

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I. Introduction

One central attribute that is peculiar to developing countries is lack of sufficient resources to wholesomely engage the teeming human and material resources available to them. As a result, there is always a wide gap between the expected rate of development and actual rate of capital investments. Nigeria as a country has overtime relied majorly on crude oil export as a major source of government revenue for the provision of needed capital projects and funding of other government activities. However, the recent downward dwindling of crude oil price in the international market requires that government must explore other avenues in meeting up with its developmental goals. For a developing country to achieve sustainable development there should be massive investment in industrialization and more of exports than imports (Aganga, 2014). Achieving these requires huge capital investment which would come from either external borrowings or foreign direct investments, among other avenues.

Foreign direct investment (FDI) is a direct investment made by a company or individual in one country in business interests in another country, either by buying a company in the target country or by expanding operations by an existing business in that country, such as ownership or controlling interest in a foreign company (Investopedia, 2017). It is usually between developed countries and less-developed ones. A developing country expecting such external investments must project itself as a fertile ground for such investment to come-by or for it to attract foreign investors. This could be in terms of adequate security, rule of law, social infrastructures, favorable tax policies, and so on. A country's macro-economic policies could be a barrier for potential external investors; it could also be judiciously used as a tool to attract foreign investors for the national economic benefits as investors often look out for countries with effective regulatory regime and favorable tax laws (Baggerman-Noudari & Offermanns, 2016). Governments have constantly used the tax incentives laws as a policy instrument for increasing investment in certain economic sector and overcoming challenges posed by unfavourable investment conditions. Among the tax incentives usually utilized in Nigeria are capital allowances, capital gains tax reliefs, company income taxes, value added tax, tax holiday and double taxation treaties or agreements (Olaleye, 2016).

Over the years, Nigeria has entered into bilateral double taxation agreements (henceforth referred to as Double Taxation Treaties [DTTs]) with several countries under the Organization for Economic Co-operation and Development (OECD)- including Italy (1976), Belgium (1989), Czech Republic (1991), Slovak Republic (1991), Canada (1992), France (1991), Netherlands (1991), Pakistan (1989), Philippines (1997), Romania (1992), South Africa (2008), United Kingdom (1987), China (2005), Mauritius (2012) and most recently, with United Arab Emirates in 2016. Among the major purports of entering into double taxation agreements is to

attract more foreign direct investments (FDI) (Egger, Larch, Ptaffermayr & Winner, 2006). Negotiating and concluding DTTs have implicational costs on developing countries that have to succumb to restrictions on their ability to tax corporate income from foreign investors. Thus, the incurred costs which would only pay off if more FDI is the resultant effect afterwards. However, whether or not the DTTs have resulted in incremented FDI to Nigeria as a country is a question of immense concern to policymakers. This constitutes the motivation behind this paper.

Anecdotal evidence suggests that since double taxation agreement between countries is a pointer of mutual tax cooperation by the treaty partners, it is assumed that it increases foreign investment influx. Be that as it may, there are many reasons to argue the assumption that the DTTs can trigger FDI and or, will not increase FDI in developing countries. In both climes, several schools of thought exist as collaborated by Daniels and Ruhr (2015:999) who note that DTTs "contain elements that may encourage foreign direct investment (FDI) and elements that may discourage FDI". On one hand, researchers like Egger et al., (2006); Blonigen & Davies (2004) argue that DTTs can be an impediment to FDI since it obstructs tax evasion and avoidance, as well as other related tax-preserving strategies open to multinational companies. On the other hand, Hong (2017) argues that DTTs can boost FDI since it eliminates double taxation which the Organization for Economic Co-operation and Development (OECD) pin-pointed as a major hindrance to FDI (OECD, 2010). There is also another dimension to the effect of DTTs on FDI with reference to Coupe et al (2009); Baker (2012) who argues empirically that the positive impact of DTT on FDI is always neutralized by its negative impact resulting in "no effect". Based on these contradictory arguments, it appears that the question of whether or not DTTs affect FDI remains an open question.

Despite the incrementing number of concluded DTTs that Nigeria is signatory to, as enumerated in the third paragraph above, there is little empirical evidence as to the effect of DTTs on FDI in Nigeria. It is expected that the outcome of this paper, while contributing to existing literature on DTT and FDI, would ginger policy makers in Nigeria and other developing countries into reevaluating their ongoing treaty agreements based on the benefits of the already concluded DTTs. Having concurred to non-frivolous restrictions on their ascendancy to tax corporate income from foreign investors, if no increment in FDI can be expected or have been witnessed, then the effort and costs expended in concluding those DTTs would have been needless. The rest of the paper proceeds as follows: Section 2 reviews the literature, Section 3 outlines methodology and empirical strategy, Section 4 analyzes and discusses the data and Section 5 concludes the study.

II. Literature Review

The section presents a review of some extant literature related to this topic of study. The concepts of foreign direct investment (FDI) as well as double taxation treaty (DTT) are considered before the review of previous empirical studies on their (DTT and FDI) perceived relationship.

2.1 Foreign Direct Investment (FDI)

The OECD's benchmark definition of Foreign Direct Investment (FDI) described it as a "a category of cross-border investment made by a resident in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor" (OECD, 2008:17). Bloningen (2004) defines FDI as a foreign company's investment into commercial business activities by establishing manufacturing, service and production companies in the form of subsidiaries in a different country than the headquarters' home. FDI in Nigeria can be seen as an investment undertaken by an enterprise that is either wholly or partly foreign-owned. According to OECD (2008), what motivates direct investors include the mandatory ownership of not less than 10 percent of the voting right or the normal shares of the direct investment enterprise. Barthel, Busse, Kever and Neumayer (2012) posit that FDI has been an important component of the globalization drive that has generated much of the world's economic growth in recent decades. FDI reduces unemployment and could be used as a tool to transfer up-to-date skills, technology and superior management techniques to less developed countries. As a result, most countries strive to attract FDI because of its acknowledged advantages as a tool of economic development (Ayanwale, 2007).

One peculiar point inferable from these numerous definitions is that FDI involves one country (investor) creating a significant business presence in another country (the recipient country) in order to spread the tentacles of an already existing establishment for the benefit of both parties, especially the host country. A typical example is Coca Cola whose operations spread across over 200 countries in 5 different regions. According to World Bank (2012), the globalization of international economy has caused tremendous growth in FDI since the last decade. Emerging countries are thus keying in and exploiting that avenue in order to gain global relevance and also meet their developmental needs. Nigeria as one the developing African countries has had its fair share of FDIs and recently ranked among the top three destinations for FDI in Africa (UNCTAD, 2014).

Prior to Nigeria's independence and afterwards, the indexes of FDI inflow were largely dominated by the oil and gas industry. At independence in 1960, the earlier scores of political instability, corruption and economic mismanagement were pin-pointed as factors that reduced Nigeria's ability to attract and retain FDI. As at 1970, the FDI inflows stood at $205million and doubled to $470million in 1975. The growth of attractive fiscal FDI continued progressively up to 1986 more on private sector participation in oil and gas sector. By 1989, NNPC's (Nigerian National Petroleum Corporation) shares in Shell Nigeria and other oil companies decreased from 80 percent to 60%. It is believed, as collaborated by UNCTAD (2008), that Nigeria's return to democratic system of government in 1999 gave rise to the renewed interest by foreign multinationals to partner with the country in terms of extending some of their subsidiaries to the shores of Nigeria. This was made possible due to several government policies such as deregulation of some the major sectors of the economy, as well as other financial and trade liberalization policies geared towards in improving the investment climate of the country. As a result, the era of new democratic rule from 1999 created vibrant opportunities for renewal of the economy and broader base of FDI in Nigeria.

One of the significant areas the impact of FDI has been greatly felt by Nigerians is in the expansion of the telecommunication industry after the government collapsed the then existing monopoly. Since the introduction of Global System for Mobile (GSM) licensing in January 2001, the growth of telecommunication has been in steady progression around the country and contributing to a massive decline in unemployment. Two of the three licenses issued then went to foreign companies, MTN and Econet Wireless (now Airtel, Nigeria) for $285 million each. The former later claimed to have invested more than $3billion investment and still counting (UNCTAD, 2014). The United Nations Conference on Trade and Development (UNCTAD) acknowledged that over the last decade preceding 2014, Nigeria has consistently been grouped among the top three destinations for FDI in Africa ahead of South Africa. The recorded total FDI inflows ranged between $5b and $7billion per year, as profit-driven investors targeted the oil and gas, real estate, telecommunications, and consumer goods sectors of Nigeria.

Recently, however, the National Bureau of Statistics released its latest report on FDI stating that besides foreign portfolio inflows in terms of equities, stocks, and bonds, Nigeria did not record any direct capital investment inflow in the third quarter of 2016 (Oguh, 2016). Nwokpoku (2016) reported that Nigeria's FDI fell by 52.54 per cent in the third quarter of 2016 to $340.64 million from $718 million in corresponding quarter of 2015. This means a dramatic decline from grace for a country that has been a major recipient of FDI in Africa. Pundits are of the view that the change in government which coincided with the dramatic fall in oil prices and a faltering local currency may have been part of the reasons for the dwindling FDI inflows in Nigeria. Appropriate fiscal and monetary policy reforms appear imperative in order to turn the tide against this declining FDI data.

2.2 Double Taxation Treaty (DTT)

Cambridge Dictionary defined double taxation treaty (DTT) as a bilateral agreement between two or more countries that reduces the amount of tax that an international worker or company must pay, so they do not have to pay tax twice on the same income. Federal Inland Revenue Service (FIRS) of Nigeria described DTT as a written tax agreement between two contracting states for the avoidance of double taxation and fiscal evasion, which identifies all items of income and defines what standards would apply to their taxation as well as where each income would become taxable (at residence, at source or both) and when this should be done (IFRS, 2017). In essence, DTT represents a bilateral agreement signed by two countries towards the avoidance of territorial double taxation of the same income by the two countries. Under the double taxation treaty, any tax paid in the country of residence will be exempt in the country in which it arises.

Over the years, double tax treaties (DTTs) have been viewed as beneficial by most countries because it allows business to transact with a degree of certainty both on the part of the individuals, partnerships or corporate entities and the government of that country in which that business entity operates. The perceived pros of DTTs include: i) avoidance of international juridical double taxation, ii) prevention of fiscal evasion with anti-avoidance provision, iii) promotion of economic ties among nations, iv) clarification of taxing rights of each nation; and v) promotion of external direct investment. According to OECD (2010), the primary purpose of DTT is to eliminate double taxation – which means the levying of taxes on the same income (or capital) of the same taxpayer in the same period across two jurisdictions (Neumayer, 2007).

Researchers have argued that double taxation can be an obstacle to FDI in developing countries. Stressing that, all things being equal, its (double taxation) avoidance can make a country more attractable to external investors for investment purposes. Investors' desire stabilized fiscal assurance that comes from tax treaties to be rest assured that their profit are will not be doubly plummeted due to taxation by both the host country and the residence country (Egger et al, 2004). Operationally, DTTs are more likened by developing economies than the already developed, because of the basic assumption that DTTs increases inward flow of FDI. In Nigeria for instance, the OECD model serves as a benchmark on which the several DTTs are agreed upon. As earlier listed in the first section, Nigeria has currently entered into DTTs with thirteen (13) countries

(see table 1). All the treaties, except that with Italy (which covers Air and shipping agreement only), are comprehensive. However, there are still some signed tax treaties that are yet to be ratified as Nigeria's law demands that signed treaties do not automatically have the force of law until it is enacted into law by the National Assembly. Recently, report shows that the Nigerian legislature has commenced the process of ratifying DTTs with Spain, South Korea and Sweden which were signed on 2004, 2006 and 2009 respectively (Oyedele, 2016). There is a possibility that these unconfirmed treaties may as well be hindering in inflow of direct investments from the member countries.

Baker (2012) notes that the first modern double tax treaty goes back to 1899 when Prussia and Austria-Hungary signed such a treaty. Since then, the number of treaties has been rising steadily; at the beginning, mostly industrialized countries entered into such treaties with each other. During the last two decades, developing economies have increasingly been integrated into the global treaty network. After 1990, the number of DTT signatures has been surging, so that around 60% of today's DTTs have been signed in the last twenty years. It is worthy of note that Nigeria's 13 double tax treaties is a far cry from the number which other developed and developing countries have. For instance, the UK currently has DTTs with 131 countries, Canada has 92 DTTs and Malaysia has 68 DTTs. Most available statistics show that there is a positive correlation between DTT and the level of FDI inflow to developing countries. Thus, it may not be out of place to advocate for the widening of the current DTT network in Nigeria order to guarantee steady economic boost towards meeting the vision 20-20-20.

Empirically, the previous studies that have attempted to establish the impact of DTTs on FDI have come up with conflicting conclusions ranging from a 'positive impact' (Giovanni, 2005; Neumayer, 2007; Baker, 2012), 'negative impact' (Egger et al, 2006; Blonigen and Davies, 2005) and 'no impact' (Davies, 2004; Coupe et al, 2009; Baker, 2012). In the first part, the traditional assumption is the DTT increases FDI; hence developing countries push for such opportunity in order to attract foreign investors. On the negative effect part, researchers (e.g. Baker, 2012) suggest that in the tax treaty arrangement, the developed countries tend to dominate the positives because the developing will have to concede some source taxation which could impose a significant cost in terms of revenue loss. Also, the guarantee of economy-growing FDI may be elusive since DTT hampers tax evasion and avoidance which some multinationals may likely be willing to explore. On the "no effect" angle, researchers like Coupe et al (2009) also argued that the positives of DTT in terms of FDI are likely been offset by the negatives resulting to no effect. The debate continues.

Table 1: List of Countries having Double Tax agreement with Nigeria

s/n	Countries	DTT Type	Date/Place of Signing	Date of Entry into Force	Effective Date
1	Nigeria – Canada	Comprehensive	4th August, 1992 in Abuja	16th November, 1999	1st January, 2000
2	Nigeria – Pakistan	Comprehensive	10th October, 1989 in Lagos	7th March, 1990	1st January 1991
3	Nigeria - Belgium	Comprehensive	20th November, 1989 in Brussels	1stJanuary, 1990	1st January, 1991
4	Nigeria - France	Comprehensive	27th February, 1990 in Paris	2nd May 1991	1st January, 1992
5	Nigeria - Romania	Comprehensive	21st July, 1992 in Abuja	18th April, 1993	1st January, 1994
6	Nigeria – Netherlands	Comprehensive	11th December, 1991 in Lagos	9th December, 1992	1st January, 1993
7	Nigeria - United Kingdom	Comprehensive	9th June, 1987 in London	1st January,1988	1st January, 1989
8	Nigeria – China	Comprehensive	15th April, 2005 in Abuja	21st March, 2009	1st January, 2010
9	Nigeria - South Africa	Comprehensive	29th April, 2000 in Cape Town	5th July, 2008	1st January, 2009
10	Nigeria – Italy	Air & Shipping Agreement Only	22nd February, 1976 in Lagos	1977	1st January, 1978
11	Nigeria-Philippines	Comprehensive	30th September, 1987 in Manila	18th August 2013	1st January, 2014
12	Nigeria- Czech	Comprehensive	31st August 1989 in Lagos	2nd December, 1990	1st January, 1991
13	Nigeria- Slovakia	Comprehensive	31st August 1989 in Lagos	2nd December, 1990	1st January, 1991

Source: http://www.firs.gov.ng/Tax-Management/Pages/Tax-Treaties.aspx

2.3 Previous Studies

A handful of studies exist on the nexus between DTT and FDI, majority of which have been conducted by foreign authors. Not much of empirical local (Nigeria) content exists in this area of study, barring few online articles. This sub-section reviews the outcome of the existing empirical studies.

Hong (2017) took a network approach in examining the relationship foreign direct investment and tax-minimizing treaties among 70 countries. His empirical results show that the availability of direct tax treaty route is positively and significantly associated with the inward flow of FDI than the FDI inflow when there is absent tax-minimizing incentives.

Olaleye (2016) included DTTs as one of the proxies for tax incentive in his study on the impact of tax incentives on FDI in Nigeria. The study took a survey approach using a sample size of 352 participants from selected manufacturing companies. He also made use of archival data extracted from the Nigerian Stock Exchange and the National Bureau of Statistics from year 2005 to 2014. With the aid of OLS regression technique, he find that a strong positive relationship between DTT and FDI.

Lejour (2014) examined the FDI effect of tax treaties using a panel OLS regression technique and fixed effects on the database of all OECD countries starting from 1985. He found that the application of bilateral and multilateral tax treaties significantly increases bilateral FDI by up to 21 percent.

Baker (2012) conducted an empirical analysis on the effect of DTTs on FDI using 30 OECD countries and all the 206 non-OECD countries using a propensity score matching and difference-in-differences estimation strategy. His study covers the period 1991 to 2006 in which he found that DTTs do not have any effect on FDI across board.

Blonigen, Oldenski and Sly (2011) studied the effect of bilateral tax treaties on the agreeing parties using data of individual companies based in the US with an apriori expectation that tax treaties will likely promote FDI and related affiliations due to tax reliefs. Their findings show that tax treaties enhanced outward FDI between 1987 and 2007. They also show that the effect become smaller or even negative when the company uses a lot of intermediate supplies from foreign companies.

The study by Barthel et al (2010) examine the relationship between double taxation treaties and foreign direct investment using a panel data analysis technique applied on a broad data-set comprising 135 countries (30 FDI source countries and 105 FDI host countries) from 1978 to 2004. Their findings show that countries that entered in treaties received greater FDI than those without a treaty agreement.

Coupe, Orlova and Skiba (2008) examined the effect of DTTs on the FDI flows from OECD into transition economies covering 17 source countries and nine host economies over the period of 1990-2001. Their findings show that no significant relationship exists. They also suggest that the sign and statistical significance of the estimated treaty coefficients depends largely on the estimator technique adopted such as OLS, random effects, fixed effects and two-stage least squares.

Neumayer's (2007) study investigates whether or not U.S. double taxation treaties increase FDI in low and middle-income countries over the period 1970 to 2001 using random-effect and fixed-effects estimation techniques. The finding shows that developing countries that have several DTTs with capital-exporting developed countries gained higher FDI inflows and higher shares from inflows.

Egger et al (2006) estimate the effect of tax treaties on bilateral outward FDI from OECD source countries over the period of 1985 to 2000 with a two-step selection model. This treatment group covers 67 observations, while the control group without treaties encompasses 719 observations. They find that new treaties have negative effect on FDI using matching propensity score methods comparing FDI stocks two years pre and post-treaty agreement. Thus, it is much more likely that a treaty is concluded if bilateral investment is substantial, compared to the situation that there is hardly any investment between the two countries.

The study of Blonigen and Davies (2004) equally explored the impact of tax treaties on FDI in OECD countries during the period of 1983 to 1992 using an ordinary least squares and fixed effects analytical techniques. Their result contradicts the expected assumption that tax treaties increase FDI by showing a significant negative relationship between new treaty activities and FDI.

Summarily, the review reaffirmed the position of previous literature on the relevance of DTTs in the encouragement of FDI among countries. Considering the implicational costs that has to be borne by the two contracting parties, which may be more excruciating for the lesser economically developed country; there is possibility that DTT can lead to a huge loss of tax revenue on the part of developing countries that may not be commensurate to the size of FDI they get in return. This could be the explanation for the several negative relations between DTT and FDI as discovered by the review of extant studies. Also, majority of the studies captures more than one country in their analysis. There is a possibility that country-specific peculiarities could have twisted the findings of these extant studies. The distinction of this study, therefore, is the focus on one particular developing country which is expected to be pivotal is addressing the eventual policy implication.

III. Methodology

The study adopts a correlative analysis in establishing the interface between DTT and FDI where the former is the independent variable seeking to explain the variation in the latter. The method involves the utilization of historical data which is readily available in several yearly issues of the CBN Statistical Bulletin and the Nigeria National Bureau of Statistics. FDI data from 1976 to 2016 was analyzed to ascertain the

vicissitudes that occurred in Nigeria FDI between the study periods as a result of DTTs. The scope was justified by the fact that Nigeria signed its first DTTs in 1976 (with Italy, with respect to air and shipping convey). Hence, information on FDI from 1977 till date was deemed germane to the study.

The simple regression model below was built by the researcher for the purpose of this study:

FDI = f (DTTs)…………………….(1)

In linear form, we have:

FDI = β_O + β_1DTTs + e…………….(2)

The *a priori* expectation of the slope coefficient is expected to have a positive relationship with foreign direct investment (FDI). Thus, βi > o where i = 1

Where *FDI* is the dependent variable and is the observations of yearly data on real foreign direct investment (RealFDI), *DTTs* denotes yearly observations of the number of countries in double taxation treaty agreement with Nigeria.

IV. Data Analyses

4.1 UNIT ROOT TESTS

The data were tested for unit root (non-stationarity) by using the Augmented Dickey–Fuller (ADF). The unit root test was employed in order to ascertain the stationary state of the variables. This is considered essential since the data generating process may not wholesomely be accurate. The results are shown in table 2 below;

The following hypothesis applies:

H_O: unit root exists (not stationary)

H_1: no unit root (stationary) *Desirable*

Decision rule:

If absolute t-statistics > absolute critical value (ADF), = accept alternative

If absolute t-statistics < absolute critical value (ADF), = accept null

Table 2: ADF (Augmented Dickey-Fuller) Stationarity Test Statistics Result

Augmented Dickey-Fuller statistics of the variable

Variables	ADF Stat	1%	5%	10%	Integration Order
FDI	-3.211	-3.621	-2943	-2.610	Levels
DTT	-6.954	-3.616	-2.941	-2.609	1(1)

Source: Eviews 9, 2017

The result of the unit root test utilizing Augmented Dickey –Fuller at 95% level shows that the FDI variable attained stationarity at levels while that of DTT was non-stationary at levels and only became stationary after first differencing. To this extent, the variables could be verbally expressed to have an order of integration of one.

4.2   CO-INTEGRATION TEST

In order to ascertain if a long-run meaningful relationship exist among FDI and DTT, the Johansen's cointegration test using both trace statistics and maximum Eigen value were conducted as presented in the tables 3 and 4 below:

Table 3: Trace Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.405502	25.99154	15.49471	0.0009
At most 1 *	0.166762	6.750148	3.841466	0.0094

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Eviews 9, 2017

From table 3, the Trace Statistics is 25.99 while the critical value is 15.49 (p-value <0.05) meaning we can reject the null hypothesis of none co-integration

Table 4: Maximum Eigenvalue Co-integration Test

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.405502	19.24139	14.26460	0.0075
At most 1 *	0.166762	6.750148	3.841466	0.0094

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Eviews 9, 2017

From the result in table 4, the Maximum Eigenvalue statistics is 19.24 while the critical value is 14.26 (p-value <0.05) meaning we can reject the null hypothesis. This means that there is cointegration between the variables. Hence, FDI and DTT have long-run associationship.

Table 5: Pairwise Granger Causality Tests

Pairwise Granger Causality Tests

Date: 06/13/17   Time: 21:45

Sample: 1977 2016

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DTT does not Granger Cause LNFDI	38	0.27646	0.7602
LNFDI does not Granger Cause DTT		6.91534	0.0031

Source: Researcher's computation via Eviews 9 (2017)

Table 5 checks the pairwise causality of the variables. As shown in the table, the first null hypothesis that DTT does not granger cause FDI cannot be rejected because the p-value of 0.7602 is greater than 0.05. This implies that, all things being equal, DTT does not cause FDI. On the other hand, the second null hypothesis was rejected because the probability value of 0.3% is less than 5%. This implies that FDI cause DTT. Overall, the causality between the variables is unidirectional.

Table 6: Result of the OLS Estimation

Dependent Variable: LNFDI

Method: ARMA Maximum Likelihood (OPG - BHHH)

Date: 06/13/17   Time: 23:47

Sample: 1977 2016

Included observations: 40

Convergence achieved after 9 iterations

Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.324079	1.597296	5.837414	0.0000
DTT	0.236003	0.529134	0.446017	0.6583
AR(1)	0.893899	0.116719	7.658522	0.0000

R-squared	0.871944	Mean dependent var	11.37433
Adjusted R-squared	0.861272	S.D. dependent var	2.150541
S.E. of regression	0.800995	Akaike info criterion	2.528832
Sum squared resid	23.09732	Schwarz criterion	2.697720
Log likelihood	-46.57665	Hannan-Quinn criter.	2.589897
F-statistic	81.70868	Durbin-Watson stat	1.621856
Prob(F-statistic)	0.000000		

Inverted AR Roots	.89		

Source: Eviews 9, 2017

From table 5, the Cochrane-Oreuff autoregressive one AR(1) technique was imputed to eliminate the possible presence of first order autocorrelation. The coefficient sign of DTT is positive as expected but statistically insignificant meaning that DTT and FDI move in the same direction but not significantly. This implies that if the explanatory variable is held constant, FDI will increase by 0.24 units. The explanatory variable (DTT) explains about 87% of variation in FDI while the overall p-value passed the significance test at 5%. Going by the assumption, the dependent variable (FDI) may likely increase as a result of an increase in DTT; though not significantly.

Table 7: Test of Residual Diagnostics

s/n	Residual Test	Test Type	Null Hypothesis	Obs.*R-square (p-value)	Decision
1.	Serial Correlation Test	Breusch-Godfrey LM Test	There is no serial correlation.	0.290627 (0.8648)	No serial correlation
2.	Heteroskedasticity Test	Breusch-Pagan-Godfrey	Residual is Homoskedastic	3.420905 (0.7545)	Homoskedastics
3.	Normality	Jarque-Bera Normality test	Residuals (u) are normally distributed	1.745873 (0.417723)	Residuals are normally distributed

Source: Researcher's Computation via Eviews 9 output

Residual diagnostics tests were also conducted to ensure that the basic OLS regression assumptions are not violated. From Table 7, the Breusch-Godfrey serial correlation (LM) test showed a p-value of 86.5% which is far greater than the critical values at 5% significant level. Hence, the null hypothesis of no serial correlation is accepted. Also, the second test for heteroskedacity showed a probability value of 0.7545 (75.45%) which is an indication of the desirable homoskedastic error term. The last test showed a JB value of 1.745873 (p-value > 0.05) which is an indication that the residuals are normally distributed.

4.3 Discussion and Policy Implication

The results obtained shows that even as DTT is directly cognate to FDI inflow as earlier predicted due to the coefficient sign; however, its impact on FDI is weak and insignificant. This result corroborates that of Baker (2012); Coupe et al (2009) which also find that there is very weak evidence of a positive effect of DTTs on FDI. It however, contradicts the finding of Hong (2017); Lejour (2014); Barthel et al (2012) who find a positive significant relationship between tax treaties and FDI. This could be attributed to many reasons – in respect of the disagreement that DTTs have strong positive effect on FDI inflow. Firstly, not all the countries in treaty agreements are major trading partners (PricewaterhouseCoopers, 2010). This implicatively insinuates that while a congruous tax agreement between countries represents a positive signal for possible inflow of FDI, the insignificant nature of the relationship could be a pointer that the long-run effect of treaty agreement to host countries in terms of FDI inflow may likely be neutralized by the imminent withholding tax revenue concession harboured by the lesser developed country as well as other unobservable characteristics. This supports the findings of Blonigen and Davies (2004). Also, the result shows that FDI can cause DTT – the implication is that developing countries with massive human and natural resources, like Nigeria, would naturally attract fairly high FDI due to their potentials but also engage in treaty agreements to harmonize bilateral relations, increase information sharing, reduce tax evasion and ultimately, double taxation. It does not in any way suggest that treaty agreements are or have become unimportant in fostering bilateral cooperation. Individual countries are still exploring such avenues but on a relatively slower pace in terms of ratification (e.g. Nigeria).

V. Conclusion And Recommendations

The study looked at the effect of DTT on FDI in Nigeria. It has been established, based on the literature, that FDI is a major driver of economic growth and development of developing countries. This explains the readiness of most developing countries in attracting foreign capital investments which requires government policies. DTT is one of such arrangements where two contracting nations come together in a treaty agreement in order to quash double taxation and ignite the possibility of FDI inflow. Based on the available evidence from this study, it can be concluded that double taxation treaties can foster foreign direct investment in Nigeria, but the association may likely not be significant going forward. This means that DTT is not a strong determinant of FDI in Nigeria based on our results.

Nigerian government should therefore, focus on provision of adequate infrastructural development (such as power) and favourable investment policies in order to encourage indigenous local investors. There is a possibility that if/when a country develops its inherent economic potentials, more FDI inflows would likely come-by without the country trading it for a significant tax revenue concession. There are also a number of bilateral tax treaties already signed by the Nigerian government but have not been ratified. It is imperative that such treaties be reexamined and modified to suite the country specifics. The treaties with countries that are not business partners with Nigeria should also be revisited a reexamined because most treaty agreements may likely be of more benefit to the developed countries other than the developing countries.

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Results
Unit root test (FDI) at levels

Null Hypothesis: LNFDI has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.211847	0.0272
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(LNFDI)

Method: Least Squares

Date: 06/13/17   Time: 16:19

Sample (adjusted): 1977 2016

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDI(-1)	-0.194192	0.060461	-3.211847	0.0029
D(LNFDI(-1))	0.006043	0.147038	0.041095	0.9675
D(LNFDI(-2))	-0.236303	0.143945	-1.641621	0.1102
C	2.478984	0.711717	3.483102	0.0014

R-squared	0.292198	Mean dependent var		0.186961
Adjusted R-squared	0.227852	S.D. dependent var		0.765323
S.E. of regression	0.672504	Akaike info criterion		2.146189
Sum squared resid	14.92464	Schwarz criterion		2.320342
Log likelihood	-35.70449	Hannan-Quinn criter.		2.207586
F-statistic	4.541070	Durbin-Watson stat		2.126702
Prob(F-statistic)	0.009010			

Unit Root Test (DTT) at First Differencing

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

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.954397	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DTT,2)
Method: Least Squares
Date: 06/13/17   Time: 16:40
Sample (adjusted): 1979 2016
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DTT(-1))	-1.146552	0.164867	-6.954397	0.0000
C	0.362069	0.106980	3.384456	0.0017

R-squared	0.573276	Mean dependent var		0.000000
Adjusted R-squared	0.561422	S.D. dependent var		0.869918
S.E. of regression	0.576105	Akaike info criterion		1.786141
Sum squared resid	11.94828	Schwarz criterion		1.872330
Log likelihood	-31.93668	Hannan-Quinn criter.		1.816806
F-statistic	48.36364	Durbin-Watson stat		2.001269
Prob(F-statistic)	0.000000			

Vector Autoregression Estimates
Date: 06/13/17   Time: 16:45
Sample (adjusted): 1979 2016
Included observations: 38 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	LNFDI	DTT
LNFDI(-1)	0.874174	-0.117615
	(0.16148)	(0.11433)
	[5.41338]	[-1.02872]

LNFDI(-2)	-0.067633	0.307231
	(0.16129)	(0.11420)
	[-0.41931]	[2.69037]
DTT(-1)	-0.048517	0.662077
	(0.21760)	(0.15406)
	[-0.22296]	[4.29751]
DTT(-2)	0.072408	0.264504
	(0.21083)	(0.14927)
	[0.34345]	[1.77204]
C	2.252810	-1.223877
	(0.79088)	(0.55994)
	[2.84848]	[-2.18571]

R-squared	0.867704	0.988949
Adj. R-squared	0.851668	0.987609
Sum sq. resids	16.77271	8.407567
S.E. equation	0.712926	0.504752
F-statistic	54.11001	738.2556
Log likelihood	-38.38084	-25.25904
Akaike AIC	2.283202	1.592581
Schwarz SC	2.498674	1.808053
Mean dependent	11.63916	7.078947
S.D. dependent	1.851087	4.534442

Determinant resid covariance (dof adj.)	0.129416
Determinant resid covariance	0.097600
Log likelihood	-63.62859
Akaike information criterion	3.875189
Schwarz criterion	4.306133

VAR lag order selection criteria

VAR Lag Order Selection Criteria
Endogenous variables: LNFDI DTT
Exogenous variables: C
Date: 06/13/17   Time: 16:45
Sample: 1977 2016
Included observations: 35

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-148.7561	NA	18.89526	8.614634	8.703511	8.645314
1	-64.05093	154.8894	0.187871	4.002910	4.269541*	4.094951
2	-59.37548	8.015065	0.181317	3.964313	4.408698	4.117715
3	-52.01490	11.77692	0.150688	3.772280	4.394419	3.987042
4	-48.98909	4.495492	0.161348	3.827948	4.627841	4.104071
5	-40.26330	11.96679*	0.125705*	3.557903*	4.535550	3.895387*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion