

## Can Foreign Aid Enhance Domestic Resource Mobilization Efforts in Nigeria?

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### Abstract

The role of foreign aid in enhancing domestic growth in aid-recipient countries remains much debated. This paper takes an empirical perspective and focusing on non-resource tax revenues in Nigeria, examines whether foreign aid does enhance domestic resource mobilization (DRM). Using foreign aid data disaggregated by type – grants and loans, for the 1980-2013 period, econometric evidence indicates that foreign aid in the form of loans is a more effective tool for enhancing domestic resource mobilization. Specifically, a percentage increase in loans and grants results in a 0.12 - 0.14 unit increase in tax effort and a 0.28 – 1.40 unit decrease in tax effort. These results suggest that by including measures to ensure adherence to prescripts of greater accountability, foreign aid in the form of loans helps enhance tax effort compared to unconditional grants that reduce incentives for local authorities to enhance their domestic revenue mobilization efforts.

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## 1. Introduction

Nigeria's reliance on resource earnings as its main form of revenue has taken focus away from the potential of domestic tax revenue as a viable source of development finance. The importance of this shift becomes pronounced when one considers that effective domestic resource mobilization (DRM) is essential to (i) provide essential revenue for the development of physical infrastructure and improvement of social services, (ii) establish a key source of sustainable, domestically generated funding in carrying out development agendas, (iii) reduce dependence on foreign aid and thus allowing increased ownership of domestic growth programmes, and (iv) increase autonomy of developing countries over their policies (Okonjo-Iweala, 2013).

Nigeria's heavy dependence on oil exports lies at the heart of its inability to fully exploit domestic tax revenues. Between 1980 and 2012, oil revenues consistently accounted for over 80 percent of Nigeria's total revenue and 95 percent of the country's foreign exchange reserves. The reliance of the Nigerian economy on oil revenue leaves the country at the mercy of any fluctuations in the oil price, as indicated by previous oil price shocks as well as the most recent oil price fall of 2014-2015. This coupled with the volatile socio-political environment in the country's oil producing areas in the Niger-Delta, reinforces the need to increase focus on revenue generation from the non-oil sector.

At present, Nigeria's tax system is unable to redress this imbalance in revenue generation as it suffers from significant administrative and compliance complications, factors that have combined to adversely impact the efficiency of the tax administration, tax effort and revenue generated. These problems are further exacerbated by the existence of an informal sector which makes up a significant part of the economy<sup>2</sup> and contributes minimally to the tax base and tax revenue. The difficulty posed by having such a large informal sector is the pressure on the smaller taxable formal sector that forms the minimal tax base. Furthermore, failure to broaden the tax base reduces the economy's insulation from crude oil price volatilities and reduces its ability to enhance fiscal sustainability and economic viability at lower tiers of government (ATAF, 2014; Odusola, 2006). Despite numerous tax policy reforms, Nigeria's "resource curse" and imbalance in revenue generation undermines the country's ability to

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<sup>2</sup> The shadow economy accounted for 57.9 %, 58.6% and 59.4% of Nigeria's GDP in 1999, 2000 and 2002 respectively

generate domestic resources, stunts the contribution of non-resource sectors in enhancing domestic revenue and has implications for the country's development and growth. Concurrently, Nigeria remains one of the top ten recipients of foreign aid in SSA. Between 1980 and 2013 the country received about 44.91 billion USD Dollars in foreign aid. foreign aid to Nigeria is in numerous forms across a spectra of sectors. For instance, between 1980 and 2013, the country received about 7.62 Billion Dollars in loans and 30.06 Billion Dollars in grants. Sectoral allocation of aid points to the dominance of the social sector as the highest recipient of aid disbursed to the country between 2002 and 2012<sup>3</sup>. The Nigerian government also relies on foreign assistance to buttress its activities. From the observation of the sectoral distribution of foreign aid between 2002 and 2013, Government and civil society aid has accounted on average for over 10 percent of total foreign aid disbursed, public sector aid. Between 1995 and 2012, public finance management aid(foreign aid to taxation) committed to Nigeria increased overall by 96 percent from around 0.1 million in 1995 to 96 million by 2012 (OECD-CRS), and accounted for 2.39 percent of the total aid committed in the same period. The sectoral distribution of foreign aid shows that public finance administration aid has generally not been substantial

Results from explorations of the aid- DRM nexus have been encouraging. Recent literature (see for example Luoga, 2002; Matovu, 2010; Muzondo et al. 2011; Kagina, 2012;) all conclude that foreign aid does improve the efficiency in the management of tax systems within developing countries, by enhancing tax compliance and collection, reducing tax evasion and avoidance and enabling governments to capture millions of potential revenue that is normally lost through lax tax systems. OECD (2013) findings highlighted the significance of foreign assistance for tax administration, indicating that for every dollar of foreign aid channelled to the improvement of tax administrative capacity, tax revenues are expected to increase by around 350 Dollars.

Despite the growth and development significance of domestic revenue, developing countries continue to face challenges with the mobilization of domestic resources, largely due to inefficient tax administration systems. Although the foreign aid debate has recently moved

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<sup>3</sup> Of the total aid disbursed between the 2002 and 2012, 59 percent, 9 percent, 3 percent and 0.33 percent was provided in the form of social, economic, productive and humanitarian aid.

into the examinations of how foreign aid can enhance DRM in developing countries, with the exception of a few case study reports, there has not been, to the best of our knowledge many studies that have empirically examined the nexus for a developing economy. In addition, no empirical study has been undertaken with specific reference to an oil rich economy such as Nigeria. This study therefore focuses on the role of foreign aid in enhancing public DRM in Nigeria. The rest of the paper is structured as follows: Section 2 provides a brief review of the foreign aid and DRM case studies. In section 3, the data and methodology utilised is explained while the regression results are presented and discussed in section 4. Conclusions are presented in Section 5.

## 2. Selected Literature Review

Increased awareness from both the donor and recipient communities regarding the potential of foreign aid in reducing aid dependency in many recipients, has led to the examination of the ways by which foreign aid can be utilised to promote DRM. Recently, the efficacy of foreign aid in enhancing tax administration and capacity has spurred a handful of policy papers from organizations such as the Organization for Economic Co-operation and Development (OECD), the International Centre for Tax Development (ICTD) and the African Tax Administration (ATAF).

In the 1980's and 1990's donor efforts focused on tax policy reforms and a push of trade taxes to become the dominant means of taxation. According to Prichard *et al.*, (2012) the reform of trade taxes was a major component of structural adjustment reforms in the 1980's and 1990's and external assistance was a prominent feature in many tax policy and administration reforms. In recent years, the push has been to increase tax revenues through improved tax capacity and tax management efficiency. The focus is to move away from trade taxes towards value added tax (VAT) and to lower direct tax rates and improve tax administration (Bird, 2008). According to Fjeldstad (2014) donor assistance is observed in improving tax policy and its design, increasing the effectiveness of tax administrations and encouraging state-citizen engagement in tax policy issues.

A few countries have been recipients of public sector administration aid with some measures of success. Hang (2007) examined this nexus for Vietnam and found that Vietnam successfully reduced its aid dependence through the management of donors by the government as well as by increased public infrastructure investments. Through efficient aid management and the mobilization of resource rents towards investment projects that enhanced domestic development, Botswana succeeded at reducing its reliance on foreign aid Leith (2005) and Wangwe (2007).

Kagina (2012) examined the significance of foreign aid for DRM in Ghana, Tanzania, South-Africa, Uganda and Zambia. Ghana's tax administration has enjoyed long-term support from donors ranging from United Nation's (UN) support in the implementation of the automated systems for customs data (ASYCUDA) introduced by the customs, excise and preventative service (CEPS) to joint collaboration between the Harvard institute of development and the

crown agents of the UK on the VAT visibility study in 1989. The Department of International Development (DFID) provided around 1.5 million pounds to the VAT project in Ghana to get the implementation of the system off the ground. Ghana has also benefited from the Multi-Donor Budget support programmes project.

For Tanzania, efficient tax administration has been at the centre of donor funding. According to Luoga (2002) donors have funded over 12 studies on tax administration reform in the country since 1990. Established in 1996, the semi-autonomous Tanzania Revenue Authority (TRA) benefitted from the 73 million US Dollar World Bank funded tax administration project. Donor participation in the area has also extended to the provision of increased staff numbers. The IMF has also been involved in Tanzania's tax policy with recommendations on the VAT threshold in 2004 as well as the removal of tax exemptions. Donor funds aimed at policy reforms have focused on improving aspects of the country's tax administration efficiency.

Significant reliance on trade taxes and the large un-taxable informal sector has been attributed to Uganda's poor tax effort performance where tax/GDP ratio has stagnated at 12 percent for many years (Matovu, 2010). All these coupled with excessive corruption between 1991 and 1996 in the tax revenue agency (URA) led to the development of a modernization plan in 2006 backed by the DFID, World Bank, IMF and countries such as China and Japan. Financial assistance and technical cooperation to the tune of 15 million USD set in motion reform to enhance the efficiency of the tax administration. The electronic tax (E-tax) system was introduced amongst others.

As with Uganda, tax administration efficiency was at the centre of donor funding to Zambia. According to Muzondo *et al.*, (2011) in 1991, the IMF began the provision of technical assistance to the Zambia government through the IMF's fiscal Affairs department. The DFID provided technical support amounting to 15.8 million pounds to the Zambia Revenue Authority to aid the attainment of improved efficiency. Assistance included the provision of technical equipment such as computers to assist with the computerization of the VAT system.

Foreign assistance to enhancing revenue generation through technical support, training, policy reform advice has yielded some notable benefits in the above countries. In Ghana, there was an observed increase in tax effort given by the increase in the tax- GDP ratio from 5.6 percent in 1983 to 21 percent by 2005. In Tanzania, foreign assistance contributed to

better tax collection methods, a widening of the country's tax base as well as an increase in the tax-GDP ratio. Similarly in Uganda, the tax – GDP ratio increased. However the most significant improvements were observed in tax policy which improved capacity, administration and compliance and also succeeded in bringing improvements in sectors such as agriculture. In Zambia, the provision of computer equipment and the training of staff resulted in improved tax collection and skill enhancement of tax officials. The tax – GDP ratio increased from 15.3 percent to 21.9 percent by 2011(Kagina, 2012).

Further afield in the case of Georgia, donor support for DRM was observed to have a positive impact in the reforming of the corrupt customs and border practices. Government committed to a zero tolerance corruption policy, tax and custom codes were revised, efforts were made to reduce administrative discretion in decision making and increase transparency. Collectively donor assistance to reform the sector saw an increase in tax revenue of 12 percent over a nine year period (Runde and Savoy, 2014).

### 3. Econometric Model

Following Morrissey *et al.*, (2014), Gupta *et al.*,(2003) and Hisali and Ddumba-Sentamu (2012), the econometric model employed in this study address two issues that have been omitted in earlier studies. First, most empirical examination of the aid – tax nexus use total revenue as proxy for tax effort. This approach is flawed because total revenue comprises of resource revenue which forms a significant proportion of many resource rich developing countries revenue and as such will mask the actual contribution of foreign assistance to DRM via non resource tax revenue mobilization. As Nigeria is heavily dependent on resource tax-revenue, it is important to make the distinction between resource tax and non-resource tax in order to adequately account for the impact of aid on non-resource tax effort. Therefore data on non-oil revenue is used to measure tax effort in Nigeria. Secondly, the literature consists of studies that utilize aggregate aid. This approach fails to take into account the potential differences of different aid modalities on tax effort. This study therefore disaggregates foreign aid into ODA loans and ODA grants.

The main model is thus written as:

$$TR/GDP_t = \gamma_0 + \gamma_1 IND/GDP_t + \gamma_2 AGRIC/GDP_t + \gamma_3 SERVICE/GDP_t + \gamma_3 LOANS/GDP_t + \gamma_4 GRANTS/GDP_t + \gamma_5 TRADE/GDP_t + \gamma_6 GDPC_t + \varepsilon_t \text{ --- (1)}$$

Where TR/GDP is the ratio of tax revenue to GDP, IND/GDP is the ratio of industry value added to GDP, AGRIC/GDP is the ratio of agriculture value added to GDP, SERVE/GDP is the service value added to GDP. TRADE/GDP is a measure of trade openness, measured as the sum of imports and exports as a percent of GDP and GDPC is per capita GDP.

At the core of the Nigerian economy is the significant oil sector that provides more than 80 percent of government's revenue. This sector tends to be more formal and the process of taxation of activities in this sector is more formalised. Therefore the share of industry to GDP is included in the model and is expected to be positively related to tax effort. Nigeria also has a large agriculture sector which contributes significantly to GDP (36 percent between 2000 and 2012). At the same time there is a large amount of subsistence activities in the country's



agriculture sector which makes formalization of taxation or tax revenue collection difficult. Therefore the variable is expected to negatively impact on tax effort.

Nigeria relies on trade taxes as a source of revenue thus the trade-GDP ratio is also included in the model and the variable is expected to have a positive impact on revenue. The recent economic rebasing in Nigeria put the service sector as one of the main contributors to GDP, thanks in part to the film banking and telecommunications industries (Donnelly, 2014). The service sector is therefore included in the analysis as this sector also contributes significantly to the economy and it is expected to have a positive impact on tax effort.

Per capita GDP is included to capture economic performance. A high per capita GDP is thus expected to translate into higher tax revenues. The coefficient of per capita GDP is expected to be positive. Inflation rate is included to proxy the effect of macroeconomic imbalance. High inflation is expected to have a negative effect on tax effort.

The issue of tax compliance has always been at the centre of domestic tax revenue generation in Nigeria. A major reason for the dismal trend in non-oil tax revenue has been attributed to limited tax compliance in the economy. Therefore following Bothole (2010), the degree of urbanization measured by the share of urban population is included as proxy for tax compliance. This variable reflects the extent of citizens' demand for public services and given the lack of the provision of public goods in Nigeria, the expectation is that urbanization variable will have a negative impact on tax effort. Lastly, to capture the impact of governance on tax effort, a political rights variable is included.

Considering the two aid modalities, the expectation is that because loans are repayable, the impact on tax effort will differ from that of grants. The expectation is therefore that loans will have a positive impact on domestic tax revenue efforts while grants will have a negative impact.

#### **4. Data and Methodology**

The study uses secondary time series data from 1980 to 2013. Data on loans and grants are obtained from the OECD-CRS database. Data on the proportion of value added by the industry, agriculture and service sectors, trade as a proportion of GDP, inflation rate and per capita GDP, urbanization and resource rents are obtained from World Bank World Development Indicator (WDI) available online. Political rights data is obtained from the Freedom house, Freedom index online database.

The specification of the equation (1) indicates a potential endogeneity problem that would result in biased estimates if the standard ordinary least squares (OLS) technique is employed. Potential endogeneity in this case stems from the per capita GDP and foreign aid variables. It is assumed that higher per capita GDP will result in higher tax revenue; however it is also possible that the increased development or increased per capita GDP arises due to the revenues that are used to improve economic and social conditions of the populous. According to Bolthole (2010), endogeneity can arise from the foreign aid variables. Loans and grants can enhance or substitute the mobilization of tax revenue but on the other hand, low tax revenues may induce more aid, especially in the form of grants. The possibility that the right hand side variables (regressors) might be correlated with each other and thus with the error term implies that instrumental variables estimation technique is more appropriate. The Generalized Method of Moments (GMM) technique is thus employed in the analysis.

##### ***Measuring tax effort***

The use of the tax-GDP ratio as a proxy for effort and the use of total revenue to measure tax revenue prevalent in both the taxation and the foreign aid – DRM literatures is problematic for a number of reasons. Firstly, the tax-GDP ratio does not capture the actual effort made by government in collecting taxes. Rather, it is a measure of the contribution of tax to GDP. In addition the use of total revenue in such estimations masks the true contribution or amount of the different domestic taxes. For many resource rich SSA countries especially, it is important to make the distinction between total tax revenue, resource tax revenue and domestic tax (non - resource) revenue. Given the above, this study goes further to determine the tax effort in Nigeria by estimating the predicted tax revenue, i.e. the amount of domestic tax revenue that could be collected given Nigeria's economic, social and institutional characteristics.

Following Piancastelli (2001) a structural equation with the tax –GDP ratio as the dependent variable and GDPC, trade, agriculture, industry and service value added as the regressors is estimated to obtain the fitted tax ratio and the eventual tax effort. Instead of using total revenue – GDP as in Piancastelli (2001), the study uses non – oil revenue since we are interested in examining domestically generated revenue. The estimated tax effort index obtained is reported in table 1

**Table 1: Tax Effort Indices for Nigeria. (1980-2013).**

Year	Tax Ratio Actual (a)*	Tax Ratio Fitted (b)**	Tax Effort Index (c =a/b)
1980	2.145571	1.83541	1.168987
1981	2.623724	1.776074	1.477261
1982	2.316846	1.775291	1.305051
1983	2.151474	1.74464	1.233191
1984	2.008965	1.694134	1.185836
1985	2.040005	1.707761	1.19455
1986	1.016598	1.692908	0.600504
1987	1.255972	1.61332	0.778502
1988	1.127141	1.604353	0.702552
1989	1.348227	1.567113	0.860325
1990	1.641368	1.528914	1.073552
1991	1.198146	1.549229	0.773382
1992	0.868573	1.3468	0.644916
1993	0.891156	1.563433	0.570000
1994	1.184385	1.688852	0.701296
1995	2.370062	1.479567	1.601862
1996	2.156118	1.407149	1.532261
1997	2.497156	1.55935	1.601408
1998	2.470361	1.756869	1.406116
1999	0.791828	1.666361	0.475184
2000	1.106077	1.436309	0.770083
2001	1.368237	1.699371	0.805143
2002	2.274327	1.610975	1.411771
2003	1.509273	1.621259	0.930927
2004	1.248733	1.659932	0.75228
2005	1.362708	1.657071	0.822359
2006	1.616984	1.791018	0.902829
2007	1.487267	1.828587	0.813342
2008	1.882081	1.813807	1.037641
2009	1.800469	1.947073	0.924705
2010	1.932461	2.156526	0.896099
2011	1.977978	2.172452	0.910481
2012	2.262526	2.151085	1.051807
2013	2.262526	2.092333	1.081341

Notes: \* is the Non-oil revenue/GDP. \*\* derived from the following equation.

$$\frac{tax}{gdp} = f\left(\left(\frac{industry}{gdp}\right), \left(\frac{agriculture}{gdp}\right), \left(\frac{service}{gdp}\right), \left(\frac{trade}{gdp}\right), gdp\right). \text{ All variables are in natural logs.}$$

Three classifications of tax effort are determined: high tax effort indicated by index greater than 1; medium tax effort indicated by index between 1 and 0.84; and a low tax effort indicated by an index less than 0.84. From the estimated index above, it appears that of the 34 years, 15 were high tax effort years, 6 were medium tax effort years and 13 were low tax effort years.

## 5. Empirical results and interpretation

Table 2 presents the GMM estimation results. The estimation is carried out in four models. Column 1 the aid variables are assumed to have a contemporaneous impact on effort. Column two provides the result with both aid variables lagged by one period. Columns 3 and 4 respectively provide the result with the quadratic effect of both loans and grants on tax-GDP ratio.

**Table 2: Determinants of Tax effort**

Variable	Model 1	Model 2(Lagged aid)	Model 3(Loan squared)	Model 4 (Grant squared)
Loan	0.12* (0.06)	-	0.11 (0.14)	0.1488 (0.07)
Loan(-1)	-	0.46*** (0.14)	-	-
Loan <sup>2</sup>	-	-	-0.006 (0.04)	-
Grant	-0.09 (0.07)	-	-0.12* (0.06)	-0.39*** (0.11)
Grant(-1)	-	-0.08 (0.07)	-	-
Grant <sup>2</sup>	-	-	-	0.12*** (0.03)
Industry	-2.89*** (0.61)	-4.50*** (0.96)	-2.70*** (0.60)	-3.72*** (0.41)
Agriculture	-1.51** (0.54)	-2.41** (0.88)	-1.40** (0.52)	-1.99*** (0.33)
Service	-2.47*** (0.69)	-4.67*** (1.49)	-2.34*** (0.67)	-3.31*** (0.49)
Trade	0.19 (0.23)	0.25 (0.40)	0.21 (0.27)	0.58** (0.37)
GDPC	0.68* (0.38)	1.45*** (0.40)	0.76 (0.46)	1.65*** (0.37)
Inflation	-0.15** (0.06)	-0.09 (0.07)	-0.13** (0.06)	-0.03 (0.07)
Resource Rent	0.35** (0.17)	-0.28 (0.35)	0.27* (0.14)	0.19 (0.14)

Urbanization	-1.09* (0.57)	-3.37*** (0.91)	-1.14 (0.72)	-1.94*** (0.43)
C	22.72*** (5.63)	44.37*** (13.54)	21.10*** (5.37)	25.5*** (4.47)
JB Normality	8.26(0.01)	0.88(0.64)	1.61(0.44)	0.08(0.95)
Cragg Donald F-test	0.34	0.20	0.23	0.26
Endogeneity test	1.33(0.995)	1.95(0.99)	1.52(0.99)	2.37(0.98)
No of Observations	34	34	34	34

Note: Dependent variable is tax effort. \* \*\* \*\*\* denote level of significance at the 10%, 5% and 1% level of significance. (Standard errors are in parentheses)

From the regression results, per capita GDP, grants, the share of agriculture in GDP, the share of industry in GDP, the share of urban population in total population, the share of service industry in GDP, loans – GDP and inflation rate are drivers of tax effort in Nigeria. Across all specifications of the model, per capita GDP remains positive and statistically significant implying that in Nigeria, the better off its citizens the greater the tax revenue that can be derived. Specifically a one percent increase in per capita GDP increases the tax effort by between two and three units. As expected the share of agriculture in GDP is negative and statistically significant and the result is constant across all specifications. Nigeria has a large agriculture sector<sup>4</sup>that contributes significantly to GDP; in addition, the sector employs about 70 percent of the labour force (African Economic Outlook, 2014) however a significant portion of the agriculture sector is subsistence farming and therefore proves difficult to tax. Therefore it is expected that the larger the contribution of this sector is to the economy, the lower its contribution to tax revenue. A one percent increase in the share of agriculture in GDP results in a three to four percent decline in tax effort. Contrary to expectations of a positive relationship between the share of industry in GDP and tax revenue, the result indicates a negative and highly significant impact across all specifications, suggesting that as the sector gains prominence, the tax revenue declines. Specifically, a one percent increase in the industry-GDP ratio results in a decline in tax revenue between six to eight units. While unexpected, the result is indicative of the reliance of resource (oil) revenues in Nigeria. A large component of the industry-GDP ratio is the mining sector thus it appears that reliance on this sector for revenues has reduced government’s focus in generating domestic tax revenues through non resource means. The result also confirms the existence of a negative effect of the service-GDP ratio on tax revenue. Similar results are obtained by Gupta *et al.*,

<sup>4</sup>The share of agriculture to GDP was 36.1 between 2000 and 2010, while the share of industry in GDP was 37.5 percent in the same period.

(2003), Bothole (2010) and Morrissey *et al.*, (2014). Bothole ascribes this result to the significance of the informal sector and the shadow economy in many of the SSA countries. While the share of trade in GDP has the expected sign, the coefficient is insignificant across all specifications. The result for inflation rate is mixed Inflation is significant in only two of the four model specifications; however the sign of the coefficient conforms to expectations. A high inflation rate reduces tax revenue in Nigeria by between 0.05 and 0.41 percent.

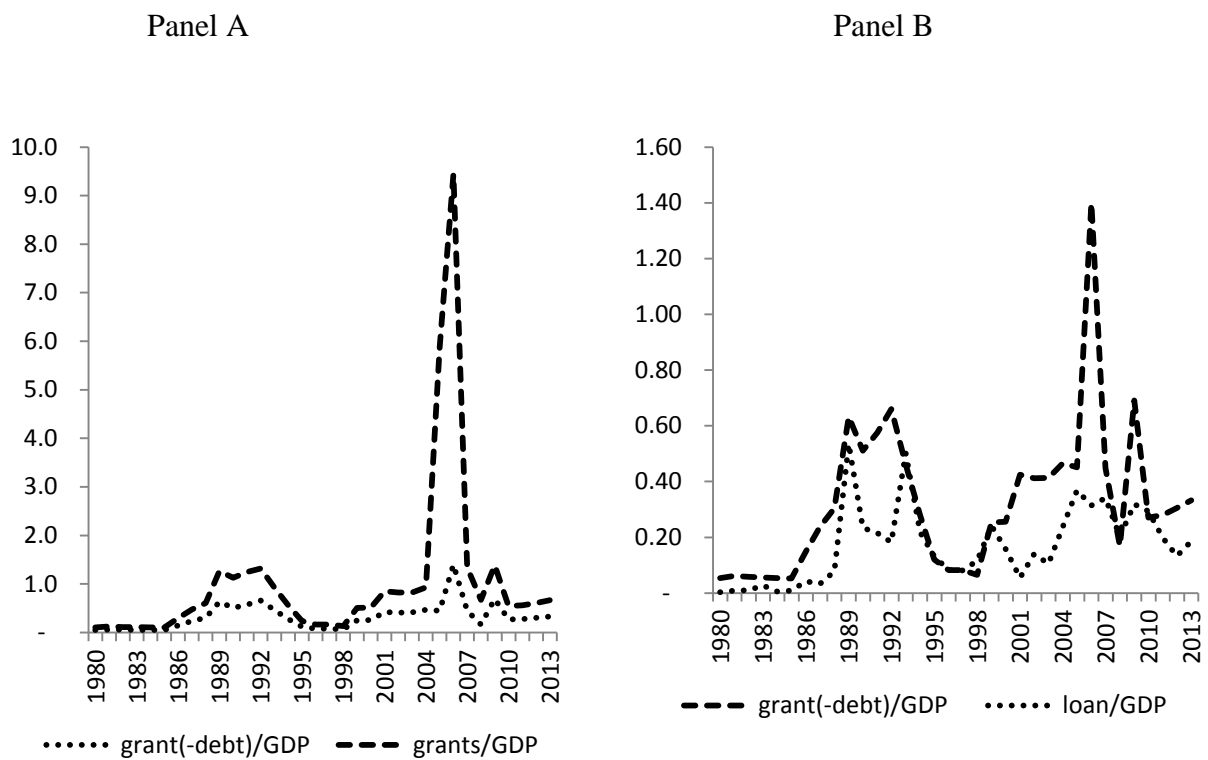
Domestic tax revenue generation in Nigeria has been hindered by compliance issues. The low contribution of the non – oil sector to tax revenue has been attributed in part to the low tax compliance in the country. Using the degree of urbanization to capture compliance, the result points to a negative effect of non-compliance on tax revenue generation in Nigeria. The provision of public services in Nigeria has been fraught with challenges and therefore the negative impact reflects non-compliance on the part of citizens as a result of a lack of confidence in the government to provide public goods. A few studies have observed a difference in the impact of mining share on the tax ratio between oil exporting and non –oil exporting countries, and since the industry-GDP ratio is a composite of mining, manufacturing, construction and electricity it is therefore important to untangle the impact of the resource sector on domestic tax (non-oil resource) revenue in Nigeria. Therefore the resource rent is also included as proxy for mining share. The coefficient of the natural resource rent is positive however it is only significant in one of the specifications.

Turning to the two foreign aid variables, loans and grants, the impact of grants on tax effort is negative and significant in all the specifications and the impact of loans is positive and significant in three of the four specifications. The results conform to the theory and other findings from the literature (Gupta *et al*, 2003 and Morrissey *et al*, 2014) that because of the element of repayment associated with loans; the government is more likely to increase the domestic tax revenues in order to meet its commitments. Therefore a one percent increase in the loan-GDP ratio results in a 0.4 unit increase in tax effort. On the other hand, grants are taken as additional revenue and therefore induce a decrease in domestic tax revenue. Essentially, grants substitute for domestic resources.

***The impact of debt forgiveness, political regime and economic policy reforms on tax effort.***

The linkage between DRM and foreign aid is impacted not only by the amount of aid provided but by the political environment and economic evolution of the country. Like a number of developing countries, Nigeria has been a beneficiary of debt forgiveness from both multilateral and bilateral sources. It is therefore important to decompose the amount of debt forgiven from the actual aid provided. Figure 1 indicates the grant series with and without debt forgiveness (panel A) and loan/GDP and grant (less debt)/GDP (panel B). Nigeria had 8 years of debt forgiveness in the form of grant debt forgiveness with the most significant amount coming in 2005 and 2006, reaching its peak in 2006 when debt forgiveness amounted to 9665.95 million dollars (see table 5.15). This figure over inflates the actual amount of grants provided in aid to Nigeria in those years and would potentially bias the results. The amount of grant debt forgiven is subtracted from the total grants to provide the true picture of grants provide (see panel B). The actual grant/GDP ratio in 2006 for example is 1.4 percent as opposed to the 8 percent if debt forgiveness is factored in.

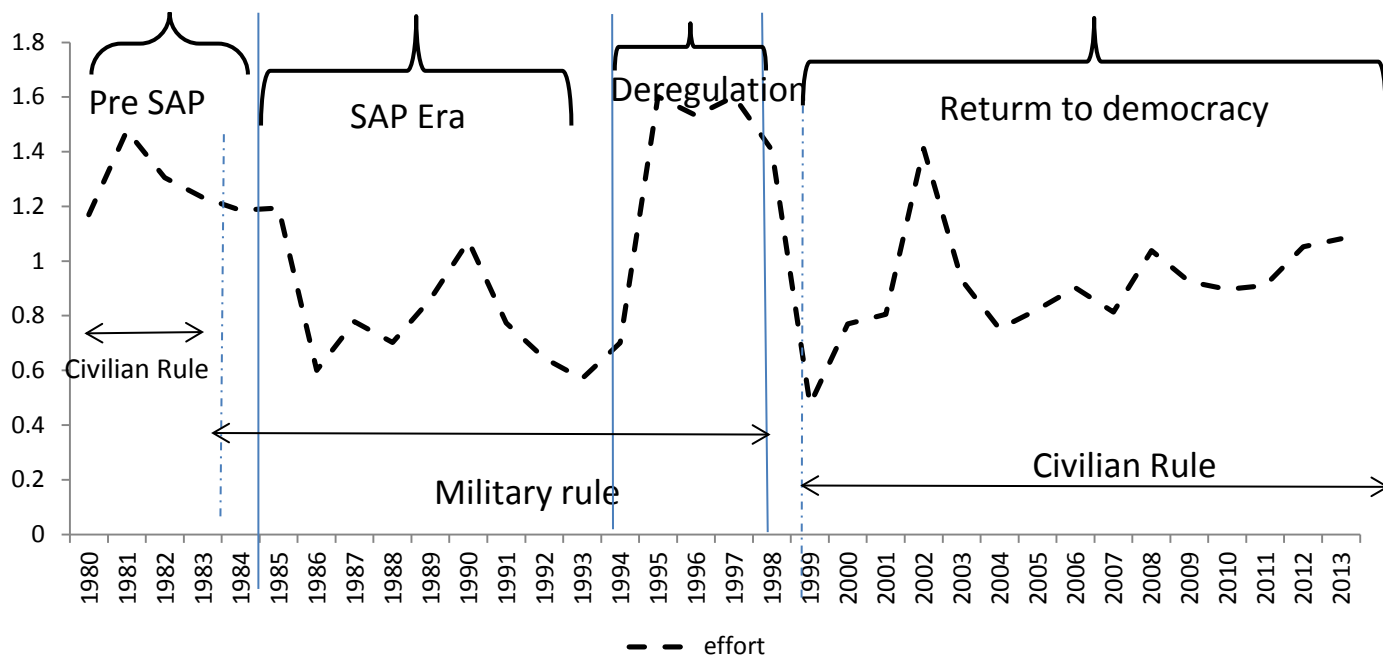
**Figure 1: Grant/GDP ratio Pre and post debt forgiveness.**



Source: OECD-CRS online database

In addition, the calculated tax effort reported in table 13 reflects varying periods of political and economic changes that occurred in Nigeria in the time under consideration. The political tapestry in Nigeria comprises of periods of civilian rule and periods of military rule. Between 1980 and 2013, the country experienced 17 years of civilian rule and 18 years of military rule. The general perception has been that the military era further worsened the socio-economic degeneration in the country with rampant corruption, political instability, and general mismanagement of the economy and resource earnings. While there have been a few tax policy reforms initiated and implemented, the success of said reforms have been questioned. According to (Oriakhi, 2014), economic management between 1967 – 1979; and 1983 – 1999 did not result in an expansion of the tax base. Additionally, Odusola (2006) maintains that the few tax reforms undertaken during the periods of military rule did not contain sufficient initiatives that enabled increased revenue productivity.

**Figure 2: Decomposition of tax effort by political regime and SAP**



Source: Derived from tax effort calculated by the author and shown in table 1

The Nigerian economy has also undergone periods of mandated Structural Adjustment Programmes which could potentially have had some impact on tax effort. It is also important to consider the significant periods in the country’s economic evolution. Following Akanbi



(2011) the pre structural adjustment programmes (SAP) (19700-1984); the SAP era (1985-1993); the period of deregulation (1994-1998); and the return to democratic dispensation (1999-2013) are identified. The tax effort can be decomposed by the differing political regimes as well as the different economic periods. During the first civilian rule (1980-1983), tax effort in the country was at its highest, with the index over 1. This high effort period also coincided with the Pre Sap era in Nigeria. Nigeria then entered into an 18 year period of military rule that brought about fluctuation in government's tax effort. Effort ranged from a high of 1.60 to a low 0.47 within this period. However predominantly, tax effort can largely be categorized as low. Specifically the military era from 1983 – 1993 which were low effort years also coincided with the period of structural adjustment programmes in the country. The few years of military rule (1994 to 1998) in which tax effort was high coincided with the period of deregulation in the Nigerian economy. One can conclude therefore that structural adjustment programmes implemented by Nigerian during military regimes were detrimental to tax effort while on the other hand, deregulation period, though under military rule was beneficial to effort. The year 2000 saw the lowest tax effort levels in the country. This period was the period of regime hand over from military to the caretaker government before power was finally handed over to the civilian government. After the return to democracy and civilian rule, tax effort has stabilised and remains predominantly a medium effort period (the index varies between 1 and 0.84).

It is clear that government's ability to generate resource domestically i.e. tax effort could potentially be affected by the amount of aid it actually receives, the political environment prevalent in the country as well as economic reforms undertaken. Therefore to account for the effect of these three factors, three steps are taken. First, the amount of debt forgiven is removed from the aid figures in order to capture only the impact of aid actually provided on tax effort. Second, the periods of regime changes is accounted for by including a regime dummy (1 = civilian rule and 0= military rule) to determine whether civilian rule encouraged increased effort than military rule. The Dummy variable is then interacted with both loans and grant to separate the impact of aid provided during the two regimes on tax effort. Lastly, to capture the structural breaks that arise from the four economic periods explained above, four dummy variables were included in separate equations.

**Table 3: debt forgiveness, political regime and structural adjustment programme periods.**

Debt forgiveness		Political Regimes		Structural adjustment Programme	
Year	Debt forgiven (\$Million)	year	Regime	Year	Period
1990	36.31	1979-1983	Civilian rule (Shehu Shagari)	1970-1984	Pre SAP
1991	31	1983-1985	Military rule (Buhari)	1985-1993	SAP era
1996	1.42	1985-1993	Military Rule (Ibrahim Babangida)	1994-1998	Period of deregulation
2005	5547.88	1998-1999	Military Rule (Sani Abacha)	1999-2011	Return to democratic dispensation
2006	9665.95	1999-2013	Civilian rule (Obasanjo, Jonathan)		
2007	763.29				
2008	72.45				
2010	18.25				

Source: OECD-CRS online, Akanbi (2014) and OnlineNigeria.com.

The regression results with the consideration of debt forgiveness, governance and political regime and structural adjustment programmes are provided in tables 4, 5 and 6.

**Table 4: Debt forgiveness regressions**

Variable	Model (1)	Model 2 (lagged aid)	Model 3 (loan squared)	Model 4 (grant squared)
Loan	0.10** (0.04)	-	0.02 (0.36)	0.14** (0.06)
Loan(-1)	-	0.23*** (0.04)	-	-
Loan <sup>2</sup>	-	-	-0.01 (0.03)	-
Grant	-0.28*** (0.06)	-	-0.28*** (0.07)	-1.40** (0.51)
Grant(-1)	-	-0.35*** (0.08)	-	-
Grant <sup>2</sup>	-	-	-	-0.15** (0.06)
Industry	-3.23*** (0.63)	-4.74*** (0.67)	-3.68*** (0.70)	-3.03*** (0.97)
Agriculture	-1.72*** (0.58)	-2.59*** (0.48)	-1.79** (0.71)	-1.68** (0.65)
Services	-2.62*** (0.67)	-4.35*** (0.69)	-2.71*** (0.74)	-2.39*** (0.82)
Trade	0.55*** (0.18)	0.68*** (0.12)	0.80*** (0.25)	0.55* (0.30)
GDPG	1.36*** (0.26)	1.97*** (0.19)	1.52*** (0.28)	0.89** (0.36)
Inflation	-0.06 (0.05)	0.01 (0.05)	-0.06 (0.07)	-0.13** (0.06)
Resource rents	0.24 (0.17)	-0.07 (0.14)	0.30* (0.17)	-0.13 (0.29)
Urbanization	-3.21*** (0.41)	-3.96*** (0.45)	-3.41*** (0.48)	-3.24*** (0.40)
C	26.33*** (6.94)	40.04*** (6.84)	26.85*** (8.11)	27.8*** (8.18)
JB Normality test	0.38(0.82)	0.22(0.89)	0.57(0.74)	0.53(0.76)
Cragg Donald F-test	0.28	0.25	0.17	0.30
Endogeneity test	1.86(0.99)	1.85(0.99)	2.60(0.98)	1.78(0.99)
No of Observations	34	34	34	34

Dependent variable is tax effort. \* \*\* \*\*\* denote level of significance at the 10%, 5% and 1% level of significance.(Standard errors are in parentheses)

**Table 5: Regime and governance regressions**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Loan	0.08 (0.09)	0.13** (0.05)	0.15*** (0.05)	0.12* (0.06)	0.20*** (0.05)	0.02 (0.05)
Grant	-0.34*** (0.06)	-0.35*** (0.07)	-0.39*** (0.08)	-0.32*** (0.07)	-0.28*** (0.07)	-0.06 (0.07)
Industry	-4.26*** (0.97)	-4.39*** (1.18)	-4.21*** (1.15)	-4.04*** (0.93)	-4.19*** (0.95)	-3.42*** (0.94)
Agriculture	-2.55*** (0.83)	-2.30** (0.94)	-2.24** (0.91)	-2.43*** (0.81)	-2.61*** (0.83)	-2.22** (0.85)
Services	-3.78*** (1.18)	-3.54** (1.25)	-3.44*** (1.19)	-3.53*** (1.09)	-3.74*** (1.10)	-3.18** (1.15)
Trade	0.78*** (0.23)	0.40* (0.21)	0.37* (0.21)	0.82*** (0.25)	0.84*** (0.25)	0.72*** (0.23)
GDPC	2.10*** (0.39)	1.36*** (0.33)	1.31*** (0.34)	1.88*** (0.30)	1.86*** (0.25)	1.80*** (0.25)
Inflation	-0.04 (0.06)	-0.04 (0.05)	-0.03 (0.05)	-0.05 (0.06)	-0.03 (0.06)	-0.01 (0.05)
Resource rents	0.03 (0.18)	0.46** (0.19)	0.39** (0.18)	-0.05 (0.24)	-0.08 (0.20)	-0.21 (0.17)
Urbanization	-4.36*** (0.61)	-3.43*** (0.58)	-3.49*** (0.64)	-4.30*** (0.62)	-4.18*** (0.57)	-3.84*** (0.44)
Regime	-0.30* (0.15)	-	-	-	-	-
Regime*loans	-	0.09** (0.03)	-	-	-	-
Regime*grants	-	-	0.11** (0.04)	-	-	-
Political Rights	-	-	-	0.07** (0.03)	-	-
Political rights*loans	-	-	-	-	-0.02*** (0.007)	-
Political rights*grants	-	-	-	-	-	-0.03*** (0.007)
C	35.6*** (10.37)	35.9*** (12.0)	35.6*** (11.7)	34.7*** (10.1)	36.6*** (10.36)	30.6** (10.84)
JB Normality test	0.24(0.88)	0.49(0.78)	0.79(0.67)	0.36(0.83)	0.45(0.79)	0.80(0.66)
Cragg Donald F-test	0.25	0.15	0.16	0.24	0.24	0.19
Endogeneity test	2.78(0.99)	1.79(0.99)	1.65(0.99)	1.85(0.99)	1.57(0.99)	2.10(0.99)
No of Observations	34	34	34	34	34	34

Dependent variable is tax effort. \* \*\* \*\*\* denote level of significance at the 10%, 5% and 1% level of significance.(Standard errors are in parentheses)

**Table 6: Evolution of the Nigerian economy regression**

Variable	Model 1	Model 2	Model 3	Model 4
Loan	0.16** (0.07)	0.15** (0.07)	-0.07 (0.08)	-0.02 (0.09)
Grant	-0.32** (0.12)	-0.19 (0.14)	0.01 (0.07)	-0.24*** (0.06)
Industry	-4.84*** (1.27)	-4.76*** (1.38)	-3.97*** (0.94)	-4.17*** (0.81)
Agriculture	-2.67** (1.00)	-2.67** (1.01)	-2.80*** (0.65)	-2.58*** (0.65)
Services	-3.96*** (1.36)	-3.99** (1.43)	-4.25*** (0.97)	-3.98*** (0.92)
Trade	0.68** (0.27)	0.55* (0.29)	0.39** (0.18)	0.55** (0.22)
GDPC	1.62** (0.71)	1.15** (0.50)	1.75*** (0.33)	1.82*** (0.27)
Inflation	-0.08 (0.07)	-0.10 (0.07)	-0.08** (0.04)	-0.04 (0.06)
Resource rents	0.37 (1.69)	0.34 (0.21)	-0.21** (0.10)	0.05 (0.16)
Urbanization	-3.70** (1.69)	-2.65** (1.04)	-2.80*** (0.59)	-2.94*** (0.56)
Pre SAP	-0.02 (0.41)	-	-	-
SAP era	-	-0.21 (0.14)	-	-
Deregulation	-	-	0.69*** (0.59)	-
Democracy	-	-	-	-0.57*** (0.17)
C	39.10*** (13.3)	39.4*** (13.6)	36.7*** (8.38)	33.8*** (7.99)
JB Normality test	0.22(0.89)	0.50(0.77)	7.22(0.02)	0.78(0.67)
Cragg Donald F-test	0.27	0.24	0.45	0.23
Endogeneity test	3.26(0.98)	2.54(0.99)	3.21(0.98)	2.45(0.99)
No of Observations	34	34	34	34

Dependent variable is tax effort. \* \*\* \*\*\* denote level of significance at the 10%, 5% and 1% level of significance. (Standard errors are in parentheses)

The consideration of debt forgiveness in the foreign aid – tax effort nexus has not changed the results significantly. The impact of loans and grants on tax effort is still positive and negative respectively. Loans are statistically significant in 3 of the 4 models while grants are now statistically significant across all 4 models. There does appear to be diminishing marginal effects in the grants received. All other covariates have the correct expected signs, trade is now statistically significant across all models and inflation is only statistically significant in one of the four models. The results of table 3 are therefore still confirmed after taking into account debt forgiveness.

The inclusion of governance and political regime in the estimations highlights the significance of good governance in the efficient utilization of foreign aid to enhance tax effort. The results for the interaction terms (aid and governance and aid and regime) provide some interesting insights. Foreign aid provided to civilian government enhances tax effort in Nigeria when compared with foreign aid provided to military regimes. The estimated results are also backed by the medium to high effort observed during civilian rule as provided in figure 2 above.

The significance of periods of economic changes is highlighted in the results provided in table 6. The signs of the coefficients of the Pre Sap and Sap era are as expected however the effect is not significant. Some statistical significance in the effect of tax effort is observed for the deregulation and democracy periods. Deregulation had a positive effect on tax effort in Nigeria while the period of return to democratic dispensation produced a negative impact on tax effort.

## 6. Conclusion

This study examined the role of foreign aid in enhancing domestic resource mobilization in Nigeria with a specific focus on taxation. Taxation play a significant role in any economy as it links the government to citizens through the social contract and ensures or endeavours to establish ease of compliance on the part of citizens and efficiency on the part of government in the way public funds are utilized. Despite many reforms, the Nigerian tax system continues to be challenged by structural and administration issues and at the same time, the country remains highly dependent on resource tax revenues to fund its development goals at the expense of other domestic tax types. This leaves the economy at the mercy of fluctuations in oil prices and other global financial and economic instabilities. Nigeria receives a significant amount of foreign aid in nominal terms from multilateral and bilateral source. However the amount is volatile at best and remains a small proportion of the country's gross domestic product and donor's focus in Nigeria's tax system or towards public administration finance is limited.

In addition to understanding the Nigerian tax system and the challenges faced, the study further empirically examined the role of the donor community in improving Nigeria's tax administration and tax policy with the view to enhance DRM. To examine the effect of donor funding on tax revenue effort in Nigeria, the study separates foreign aid into grants and loans, the study finds support for the provision of loans in order to enhance tax effort. In addition, the provision of grants is strongly advocated against as this reduces tax effort in Nigeria. Key from the results is the negative impact of the large informal sector as well as the large agriculture base on tax effort. According to the ATAF (2012) this suggests a need to encourage commercial agriculture so that the contribution of the sector to revenue can increase. Maintaining strong growth is crucial for enhancing tax revenues in Nigeria. At the same time, there is need to diversify the economy from its reliance on its resource base. There is need to focus more attention and encourage increased activity in other productive sectors such as manufacturing, whose share in total revenue has declined over the years (ATAF, 2012). The importance of good governance is also highlighted as necessary in enhancing tax revenue effort in the country.

Despite misgivings regarding the successes of donor funding in developing countries, the donor community can play an effective role in enhancing Nigeria's ability to mobilize resource domestically through improvements in the country's tax system. Successful linkages between foreign aid and improvements in tax administration and tax policy in other African countries such as Uganda and Kenya, countries with similar tax administration and revenue generation as Nigeria suggests there is a space within which foreign aid can enhance tax administration and DRM in Nigeria. Given the issues of non-compliance, tax multiplicity, insufficient number of tax officials, limited skills of tax officials, poor record keeping, donors can assist in providing the technical assistance necessary to tackle these challenges. There is need to ensure effective tax administration in Nigeria which focuses on maximising domestic taxes that are seen to be efficient, simple in the compliance requirements and also simple in its administrative requirements. The tax system needs to be decentralised and increased control over taxation given to states. Following successes in countries like South Africa, Uganda and Kenya, the revenue authority must be semi-autonomous with the view of making it autonomous eventually. As expounded by Taliercio (2004) as tax revenue agencies gain autonomy, their performance tends to improve compared to less autonomous revenue authorities.

Donor activity in the tax system must be undertaken hand in hand with the government together with representatives of stakeholders in Nigeria; businesses and citizens. There is need for a social contract to be re-drawn and expectations and responsibilities of all parties must be clarified and agreed upon. The Nigerian government must undertake to stamp out corruption in this sector and be more transparent in how it spends public funds. Tax practitioners must be provided with opportunities for training to be able to undertake their tasks more efficiently. Remuneration of said officials must be such that corruption is not deemed a suitable option by public officials. Perhaps the most significant aspect and most challenging of donor participation in DRM in Nigeria will in assisting the government to increase the tax base by reducing the size of the informal sector.



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