Effect of Tax Incentives on Non-Oil Tax Revenue: Econometric Case Study from Nigeria (1981-2022)

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Original Research Article

ABSTRACT

The non-oil tax income in Nigeria is low and contributes less than 10% of the GDP. Also, non-oil export in Nigeria contributes less than 15% to the GDP reflecting an abysmal performance over the years. This study therefore empirically examined the effect of tax incentives on non-oil tax revenue in Nigeria from 1981-2022. Tax incentives was measured by export expansion grant while non-oil tax revenue was measured by total tax revenue, non-oil export, tax rate and real effective exchange rate. Unit root test was conducted using Augmented Dickey Fuller (ADF), Phillip Perron statistics and Kwiatkowski-Phillips-Schmidt-Shin test statistic and it was found that the variables are not in the same order of integration. Bound test result indicated long run significant relationship within the variables. Autoregressive Distributive Lag Model (ARDL) found that Export expansion grant had short run significant negative effect on non-oil tax revenue in Nigeria (β_9 **= -0.07**, p-value **=** 0.0299 < 0.05) but had an insignificant positive effect in the long run (α_8 **=** 1.29, p-value = 0.3738 > 0.05). Tax

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rate had positive significant effect on non-oil tax revenue in the short run ($\beta_3 = 0.01$, p-value $= 0.0027 < 0.05$). However, in the long run, tax rate had negative insignificant effect on non-oil tax revenue ($\alpha_2 = -0.28$, p-value $= 0.4822 > 0.05$). the study concluded that export incentives have become a drain to government resources over the years. Based on the result, we recommended that export expansion grant processing time frame and payment should be improved.

1. INTRODUCTION

Nigeria is largely seen as a mono-product economy in the late 1990s and 21st century despite the promises by successive governments to transform the country to multi-product export-oriented economy with non-oil contributing 40 to 50 percent of the GNP (Trading Economics, 2018). Nigeria was mainly an agriculture- based economy up to 1960s. The discovery of crude oil in commercial quantities in the late 1960s and early 1970s changed the entire economic landscape of the country. Due to oil glut in the late 1970s and 1980s, most economies that were dependent on oil, and had not managed their boom period prudently collapsed. Nigerian economy suffered the same fate. It was also clear that oil revenue which is a major revenue base for Nigeria is no longer enough to support development due to decline in oil prices and production shortfalls (Ihuarulam, Sanusi, & Oderinde, 2021).

The need to generate more revenue and meet the development needs of the increasing population of the country led the government to intensify its revenue generation efforts through other sources. Adeniyi, Kumeka & Alagbada, (2022) posited that the glaring challenge revenue authorities contend with is how to use taxation to leverage sufficient revenue for government expenditure and provide an atmosphere that is investment friendly. According to Adeusi, Uniamikogbo, Erah & Aggreh, (2020), Nigeria government had become aggressive and innovative in the mode of collecting non-oil revenue from existing sources- personal income tax (PIT), corporate income tax (CIT) and VAT. The need to diversify the economy in order to create multiple revenue stream, reduce huge foreign exchange outflow resulting from import of almost everything, create sustainable environment for employment became more compelling.

It is believed that export expansion grant can yield positive results that spread across the economy and specifically improve productivity, thus, enhance employment generation and revenue. But Ndu, & Ugwu, (2022) has noted that substantial part of Nigeria's export is based on renewal resources (oil), which accounts for more than 80% of the foreign exchange earnings. It is noted that the share of non-oil earning in 1984 was just 2.74% compared to 97.2% in 1960 (Kabir, 2023). Currently, it is estimated that oil sector accounts for 95% of foreign exchange revenue of the government. Export incentive administration has witnessed changes over the years. The export expansion grant which is administered by Nigeria Export Promotion Council (NEPC) arguably is one of the few incentive schemes that is still active (Dalhat, 2019). It is to be noted however that the scheme had been suspended twice between 2004 and 2021 due to abuses and malpractices in the incentive administration. Obviously, the element of corruption has constrained the achievement of the intended benefits and objectives. It is important to note that between 2004 and 2021, the incentive rates have been reviewed downwards from 30% to 15% as the highest rate, with graduated rates depending on the value addition ratio as determined by the assessment template of NEPC. The challenge of declining manufactured export is more visible now than before. On this background, this study seeks to examine the effect of tax incentives on non-oil tax revenue in Nigeria knowing fully well that more revenues other than oil revenue is very pertinent to Nigeria economy.

2. LITERATURE REVIEW

World Bank, (2023) defines tax revenue as the fundamental way countries generate public revenue to finance investment in human capital, infrastructure and provision of other services for the citizens and businesses.

OECD, (2023) defines tax revenue as the revenues collected from taxes on income and profits, social security contributions, taxes levied on goods and services, payroll taxes, taxes on the ownership and transfer of property, and other taxes. Total tax revenue as a percentage of GDP indicates the share of a country's output that is collected by the government through taxes. It can

be regarded as one measure of the degree to which the government controls the economy's resources. The tax burden is measured by taking the total tax revenues received as a percentage of GDP. National Bureau of Statistics says tax revenue is the entire amount received by government from sources within and outside government entities (internal and external). Myles (2000) affirms that many economists believe that tax revenue is one of the significant factors that contribute to the growth of any country.

Tax revenue in Nigeria is classified into two broad areas. Oil and non-oil revenue. Non-oil tax revenue are revenues generated from sources other than oil producing and related activities (Adeusi et al., 2020). They include personal income tax, corporate (company) income tax, value added tax, custom and excise duties, education tax, etc. others are aids, grants, levies and fines (Ndu & Ugwu, 2022).

The operational concept of tax revenue for the study is that tax revenue is the compulsory financial charges imposed by the government of Nigeria on individuals, corporate institutions and on goods and services principally to raise funding for government expenditure. This tax revenue is based only on non-oil activities. There are different categories of non-oil taxes in Nigeria. They include personal income tax, company income tax, value added tax, with-holding tax, education tax, stamp duties, and information technology tax among others (Ibenegbu, 2017). For our study, we define non-oil tax as taxation on corporates, individuals, goods and services produced within and those imported into the country excluding royalties on oil and oil related taxes. We will focus on three major tax components which are collected by the federal government – Custom Duties, CIT, and VAT.

2.1 Export Incentive Schemes

Incentives are economic policy stimulation strategy for achieving set targets and objectives. UNCTAD, (2013), defines incentives as any tangible benefit given from government to an organization, company or an enterprise with the understanding that business failures sometimes arise due to investment challenges and outside competition. There are several types of incentives which government gives depending on its objectives. Export incentives are policies government use to encourage participation, growth of export in specific sector or across sectors of the economy in order to achieve set objectives, which include but not limited to economic growth, employment generation, revenue generation, diversification of economic activities amongst others.

Export incentive is any measure taken by government to improve and increase return on export. Such revenue and profit reduce cost of production (Balassa, 1978). Export incentives differ from country to country depending on the aim and objective of government policy. World Trade Organisation, (2023) defines export incentives as a subsidy comprising financial contribution by government or a public institution that confers a benefit on the recipient to achieve an objective. Kento, (2021) defines export incentives as regulatory, legal and monetary programmes designed to encourage businesses to export certain types of goods and services. It is a regulatory policy to increase tradeable products and create new global markets for the economy. It is an economic assistance that government provide to firms or industries within the national economy in order to help them become more competitive in the global markets. Uwaoma & Ordu, (2016) indicates that incentives for manufacturing industry acts as catalyst for industrial growth in the domestic economy.

There are, however, contentions against incentives generally by neoclassical economists who contend that it is segregative and leads to inefficiency in economic resources (Uwaoma & Ordu, 2016). One of the arguments is that tax rebates benefits violate healthy tax system of horizontal equity, and thus creates imbalances and distorts demand signals potential investors face. This argument nonetheless, has also been deflated by postulation that incentives exist because of the market failures in some sectors, and therefore, government intervention is necessary to encourage investment in such sectors (Suranovic, 2010). Wells & Allen, (2001) also noted that tax incentives are easy way for government to compensate for obstacles it created in the business environment. In other words, fiscal incentives are government response to its failure as well as market failure.

But UNCTAD, (2005) made an outstanding revelation that calls for reassessment of fiscal incentives. It noted in a report on economic development in Africa that recently, profit remittances in many SSA countries exceed total FDI inflows, and loss to government revenue.

Export incentives can be categorized into three dimensions; i) Regulatory incentives which are policies of government aimed at attracting investment projects by offering derogations from national or sub-national rules and regulations. Examples include free economic zones and export retention scheme. ii) Fiscal incentives- This involves easing of the tax burden on the investing companies so as to encourage more capital inflow. General fiscal incentives take the form of reduced corporate tax rates or tax holidays, encouragement of capital formation and preferential treatment of foreign operators. Examples include pioneer status, capital allowances and tax reliefs. iii) Financial incentives which involve the out of hand public spending to attract or induce companies to invest in fresh businesses or increase the volume and level of existing investments, in order to achieve the target objective (increased tax revenue). Examples include grants, loans and credit guarantees (Dalhat, 2019). Dana et al., (2009) reported that USA was the first country to introduce export incentives in 1942 to correct unfavourable external trade.

2.2 Stylised Facts

Total non-oil tax revenue (TTR) trend in Fig. 2 showed an increase from 1996 through to 2001, and there was a leap from 2005 forward. The explanation for these changes emanates from introduction of VAT in 1994, review and changes in tax laws and administration as well as international trade policy. Custom duties in grey line showed a flat trend from 1999 to 2006. There was progressive increase from 2006 to 2010 with a sharp rise between 2010 and 2014. There was a sharp increase from 2014 upwards which may be due to a number of factors beyond trade openness.

Fig. 4 shows export expansion grant (EEG) trend was flat from 1986 to 2004. Between 1986 and 1991, the EEG was not operational as depicted in Fig. 4, however, payment of EEG to exporting companies started in early 1990s, but the NEPC secretariat could not provide record of EEG paid to company between 1992 and 2004 when the incentive was operational. Between 2005 and 2009, there was progressive increase up to 2007, and then a decline in the value of pay-out in 2009. Between 2011 and 2020, we noticed significant increase and decline across the years. It is to be noted also that EEG was suspended between 2004 and 2006, and 2014 to 2017 due to abuse of the incentive as shown in Fig. 4.

2.3 Empirical Review

Uwaoma & Ordu, (2016) examined the impact of tax incentives on economic development in Nigeria between 2004 and 2014. It is a primary-research that focused on selected manufacturing companies in South-south zone of Nigeria. The results show that sufficient tax incentives encourage industrial growth, which invariably leads to more employment, income and tax revenue for the government. It also motivates domestic organizations, as well as foreign companies to invest in the country. The authors claim that tax incentives and corporate growth are inseparable.
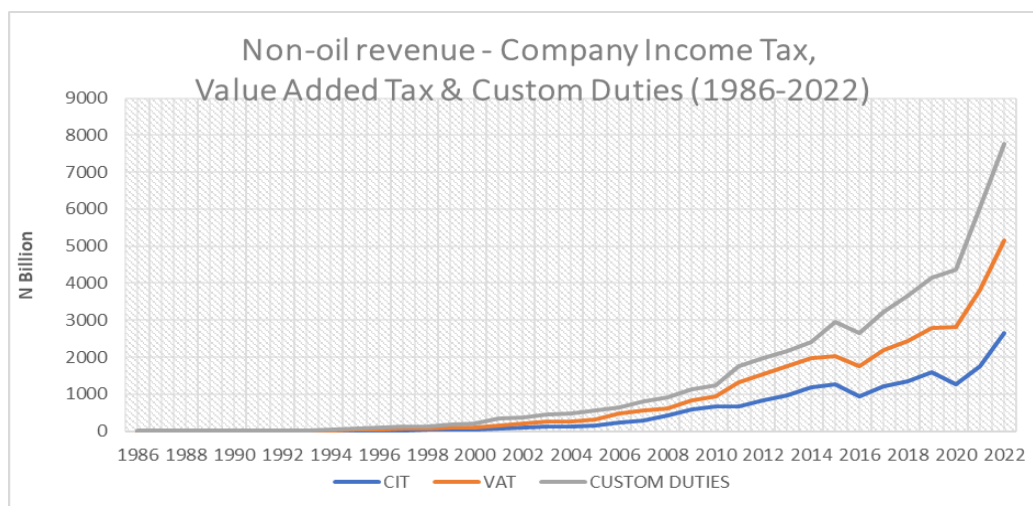

Fig. 1. Showing non-oil tax revenue - CIT, VAT & CED in Nigeria (1986-2022)
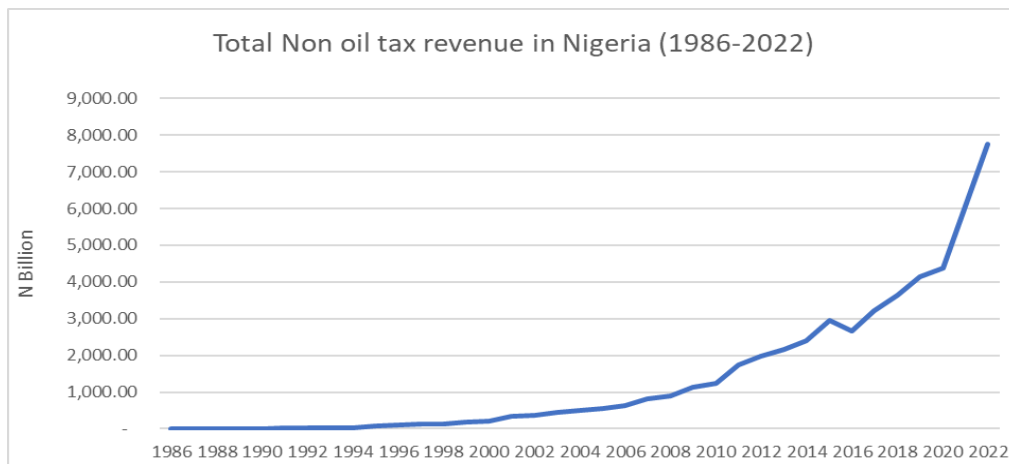*Source: Data from CBN statistical bulletin 2022*

Fig. 2. Showing total non-oil tax revenue in Nigeria (1986-2022)
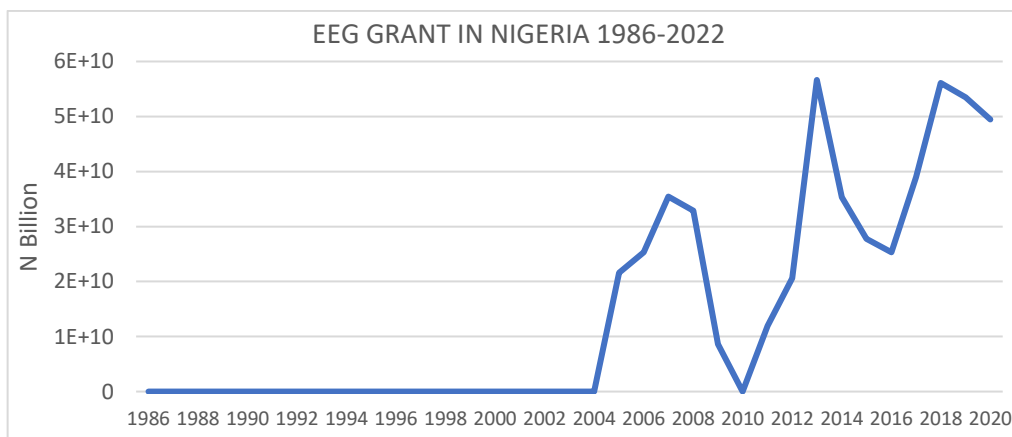*Source: Data from CBN statistical bulletin 2022*

Fig. 3. Export expansion grant (EEG) in Nigeria (1986-2022)
Source: Author's illustration based on data from NEPC 2022
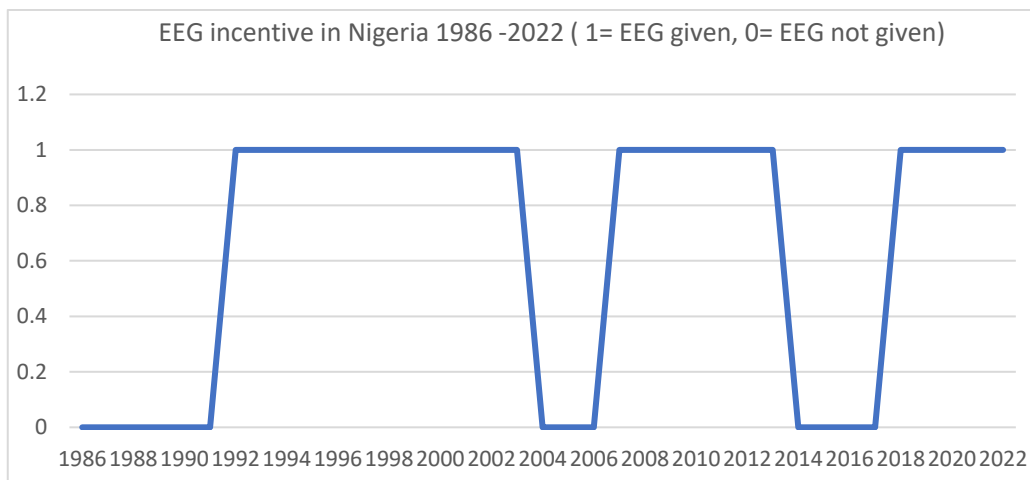

Fig. 4. Export expansion grant (EEG) in Nigeria (1986-2022)
Source: Author's illustration based on data from NEPC 2022

Sani & Salihu, (2020) analysis of the relationship between exports incentive schemes and manufactured exports in Nigeria covering 1990 to 2014 showed that there is no long run relationship between export incentives scheme and manufactured exports since the effect of

EEG and other incentives under study was insignificant. This result was collaborated by Ali and Madueme, (2019) on the effect of export expansion grant on the growth of Nigeria's non-oil export covering from 1986 to 2015. The result shows that EEG had no significant effect on non-oil export. This is contrary to studies by Udah, (2012) and Usman, (2010) which noted that expansion of export yield positive results that spreads across the economy.

Cavusoglu & Usman, (2021) on the impact of trade openness and export expansion grants in Nigerian economy (1986-2019); New evidence from quantile regression examines the effect of trade openness and export expansion grants on Nigerian economy between 1986 and 2019. The result indicates a positive relationship between trade openness and economic growth in the first and last quantiles, while the remaining quantiles-2nd to 6th had statistically significant negative relationship with GDP. EEG was positively related with GDP in all the quantiles, but it was statistically significant only in the 6th and 7th quantile. The study also reported a bi-directional causality between GDP and trade openness, but it was unidirectional between GDP and EEG.

Does incentive improve export performance of firms? Onah, Amuka, Asogwa, Onuigbo & Ezeudeka, (2022) study involving sixty firms that had benefitted from the EEG incentive was seen to have significantly improved their export performance. Although, the period of study was too short to make a valid conclusion. Cage & Gadenne, (2016), in their novel work involving a panel dataset of tax revenues covering 130 developed and developing countries from 1792 to 2006. The study shows that in the period since 1970, developing countries are more likely than rich countries to experience a fall in total tax revenues as they decrease trade taxes. It observed similar decreases in trade tax revenues in today's rich countries when they were at earlier level of development in the 19th and early 20th centuries. But they were less likely to experience a simultaneous decrease in total tax revenues than today's developing countries, and that when they did, this decrease was smaller and shorter-lived. The reason may be that developing countries decrease taxes on trade before developing tax administrations capable of taxing domestic transactions.

Karimi, (2016) study of the impact of trade liberalization on tax revenue structures in developing countries collaborates positive effect of trade liberalization on total tax revenue in the long run, but that trade tax revenue follows Laffer curve with respect to tariff rate administration. This view was supported partially by Kassim, (2016) study covering twenty-eight SSA countries for 30 years (1981–2010) period on the revenue implication of trade liberalization in SSA: Some new evidence. The conclusion is that trade liberalization resulted in overall increase in total tax revenues. Although the reduction in tariffs and freer trade decreased trade tax revenue, it caused a greater increase in domestic tax revenue which also indicated that greater urbanization increases tax revenue leading to higher net tax revenue in SSA countries. Gnangnon (2020) study of export product diversification and tax performance quality in 115 developing countries shows that diversification of export products induces higher quality of tax performance among the developing countries, and that generally, low-income countries among the developing countries enjoy even a greater tax performance quality due to product diversification, compared to those with higher income level.

2.4 Gaps in Literature

Various research on this topic and related topics have used different approaches and estimation methods to show the relationship between export incentives and tax revenue. To the best of our knowledge, the impact of export incentives scheme on non-oil tax revenue have not been fully investigated. Some studies on the effect of export incentives on economic growth have divergent results. Thirdly, other studies have not investigated the impact of export incentives on non-oil tax revenue in Nigeria. This current study will bridge that gap.

3. METHODOLOGY

The study covered the period 1986-2022. The choice of this period is based on the remarkable policy changes. It marked the commencement of structural adjustment programme (SAP), which heralded a comprehensive non-oil export strategy in Nigeria. The variables of interest include total non-oil tax revenue (TTR), export expansion grant (lnEEG), real effective exchange rate (REER) and tax rate (TAX). These variables are directly connected with international trade, and they have interrelationship with non-oil tax revenue.

3.1 Model Estimation

$$\Delta\,ln\,TTR_t = \alpha_0 + \alpha_{1i}\sum_{i-1}^{p}\Delta\,ln\,TTR_{t-1} + \alpha_{2i}\sum_{i=1}^{p}\Delta TAX_{t-1} + \alpha_{3i}\sum_{i=1}^{p}\Delta REER_{t-i}$$

$$+ \alpha_{4i}\sum_{i=1}^{p}\Delta\,ln\,N\,OEX_{t-i} + \alpha_{5i}\sum_{i=1}^{p}\Delta\,ln\,E\,EG_{t-i} + \beta_1 TAX_t + \beta_2 REER_t + \beta_3 NOEX_t$$

$$+ \beta_4\,ln\,E\,EG_t + \varepsilon_t \qquad\qquad 3.1$$

Table 1. Data source and measurement

S/No	Variable	Description	Measurement	Source
1	TNTR	Total non-oil tax revenue (the revenue from vat, cit and ced)	Naira	FIRS & NCS
2.	NOEX	Non-oil export (shows the effect of export incentives on non-oil export)	Naira	NEPC
3	TAX Rate	Average weighted tariff rate for all products	Percentage. (%)	WDI
4	REER	Real exchange rate	Percentage (%).	WDI
5	EEG	Export expansion grant. (Proxy for export incentives). It is a grant given for exported non-oil products based on value added.	Naira	NEPC

Source: Author's computation (2024)

4. ESTIMATION RESULTS

4.1 Pre-estimation Test

Export (lnNEOX) and total non-oil tax revenue (lnTTR) are stationary at first difference while tax rate (TAX) and real effective exchange rate are stationary at levels. This implies that the variables are integrated in order I(1) and I(0). This justifies the use of Autoregressive Distributive Lag Model (ARDL) for the study.

4.2 Estimation

Short Run:

lnTTR = 1.51 + 0.40lnTTR(-1) + 0.01TAX − 0.00006REER − 0.06lnNOEX − 0.07lnEEG
4.1

Long Run:

lnTTR= 26.59 - 0.28TAX− 0.02REER + 3.36lnNOEX + 1.29lnEEG
4.2

From Table 8, lag value of non-oil tax revenue had a significant positive effect on the non-oil tax revenue (β_1 = 0.4, p-value = 0.0488 < 0.05). The result denoted that the previous value of non-oil tax revenue was significant factor in determining the current value of non-oil tax revenue in Nigeria.

Export expansion grant had short run significant negative effect on non-oil tax revenue in Nigeria

(β_9 = -0.07, p-value = 0.0299 < 0.05) but had an insignificant positive effect in the long run (α_8 = 1.29, p-value = 0.3738 > 0.05). A percentage increase in export expansion grant led to 0.04% decrease in non-oil tax revenue in the short run but to 1.29% increase in the long run. This implies that export expansion grant has significantly affected non-oil tax revenue in Nigeria only in the short run within the period under study.

The result further depicted that tax rate had positive significant effect on non-oil tax revenue in the short run (β_3 = 0.01, p-value = 0.0027 < 0.05). However, in the long run, tax rate had negative insignificant effect on non-oil tax revenue (α_2 = -0.28, p-value = 0.4822 > 0.05). A unit increase in tax rate led to 2% increase in non-oil tax revenue in the short run but to a 28% decrease in non-oil tax revenue in the long run. These imply that tax rate significantly affect non-oil tax revenue in the short run only in Nigeria.

In similar way real effective exchange rate had both short run and long run negative insignificant effect on non-oil tax revenue in Nigeria (β_6 = -0.00006, p-value = 0.9204 > 0.05; α_5 = -0.02, p-value = 0.4357 > 0.05). The findings show that a unit increase in real effective exchange rate led to 0.0006% decrease in non-oil tax revenue in the short run and to 0.02% decrease in the long run though the decrease was not significant to non-oil tax revenue in Nigeria.

Table 2. Augmented dickey fuller (ADF)

	ADF											
	At levels						**At First Difference**					
Intercept			**Trend and Intercept**		**None**		**Intercept**		**Trend and Intercept**		**None**	
Variables	ADF statistics	5% Critical value	ADF statistics	5% critical value	ADF statistics	5% critical value	ADF statistics	5% Critical value	ADF statistics	5% Critical value	ADF statistics	5% critical value
LNEEG	-1.98	-2.94	-2.14	-3.55	0.03	-1.95	-5.58	-2.94	-6.09	-3.54	-5.22	-1.95
LNNEOX	-1.62	2.94	-3.61	-3.20	3.43	-1.95	-10.93	-2.94	-15.68	-3.54	-6.24	-1.95
LNTTR	-3.26	-2.94	-2.35	-3.55	5.19	-1.95	-5.27	-2.94	-5.83	-3.54	-1.08	-1.95
TAX	-7.84	-2.97	-5.38	-3.54	-8.29	-1.95	-	-	-	-	-	-
REER	-4.28	-2.94	-4.23	-3.54	-	-	-7.30	-2.94	-7.06	-3.54	-7.44	-1.95

Source: Author's computation (2024) using E-Views 10

Table 3. Phillip peron test

	Phillip Peron Test											
	At Levels						**At First Difference**					
Intercept			**Trend and Intercept**		**None**		**Intercept**		**Trend and Intercept**		**None**	
Variables	PHP Statistics	5% Critical value	PHP statistics	5% critical value	PHP Statistics	5% critical value	PHP Statistics	5% Critical value	PHP statistics	5% Critical value	PHP statistics	5% critical value
LNEEG	-2.90	-2.96	-1.92	-3.56	0.01	-1.95	-5.98	-2.96	-7.45	-3.57	-5.23	-1.95
LNNEOX	-2.39	2.94	-3.65	-3.53	3.48	-1.95	-10.93	-2.95	-15.68	-3.54	-6.24	-1.95
LNTTR	-5.30	-2.94	-2.72	-3.54	3.15	-1.95	-5.27	-2.95	-5.93	-3.54	-2.65	-1.95
TAX	-4.54	-2.94	-5.38	-3.54	-1.94	-1.95	-	-	-	-	-	-
REER	-4.40	-2.94	-4.35	-3.54	-2.12	-1.95	-	-	-	-	-	-

Source: Author's computation (2024) using E-Views 10

Table 4. Kwiatkowski-Phillips-Schmidt-Shin test statistic

	KPSS							
	At Levels				**At First Difference**			
	Intercept		**Trend and Intercept**		**Intercept**		**Trend and Intercept**	
Variables	KPSS statistics	5% Critical value	KPSS statistics	5% critical value	KPSS statistics	5% Critical value	KPSS statistics	5% Critical value
LNEEG	0.67	0.46	0.18	0.15	0.29	0.46	0.14	0.15
LNNEOX	0.74	0.46	0.16	0.15	0.38	0.46	0.31	0.15
LNTTR	0.73	0.46	0.19	0.15	0.33	0.46	0.12	0.15
TAX	0.62	0.46	0.10	0.15	0.30	0.46	0.20	0.15
REER	0.06	0.46	0.05	0.15	-	-	-	-

Source: Author's computation (2024) using E-Views 10

Table 5. Order of Integration

Variables	ADF with Intercept	ADF with trend and intercept	ADF AT NONE	PHILIP-PERRON Intercept	PHILIP-PERRON Trend and Intercept	PHILIP-PERRON at none	KPSS with Intercept	KPSS with trend and intercept
LNEEG	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
LNNEOX	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
LNTTR	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
TAX	1(0)	1(0)	1(0)	1(0)	1(0)	1(0)	1(1)	1(1)
REER	1(1)	1(1)	1(1)	1(0)	1(0)	1(0)	1(0)	1(0)

Source: Author's computation (2024) using E-Views 10

Table 6. Lag length criteria result

Lag	LogL	LR	FPE	AIC	SC	HQ
1	248.4080	NA	108.1733*	18.85572*	20.03443*	19.22488*
2	230.6270	23.29925	202.6617	19.35359	21.71099	20.09190
3	202.2637	27.38525	241.1687	19.12163	22.65774	20.22910

Source: Author's computation (2024) using E-Views 10

Table 7. Bound test

Test Statistics	Value	K
F-statistic	9.484819	8
	Critical Value Bounds	
Significance	10 Bound	11 Bound
10%	1.85	2.85
5%	2.11	3.15
2.5%	2.33	3.42
1%	2.62	3.77

Source: Author's computation (2024) using E-Views 10

Table 8. Regression output

Panel A: Short Run Model				
Variable	**Coefficient**	**Standard error**	**T-statistics**	**Probability**
LNTTR (-1)**	0.398868	0.183535	2.173248	0.0488
TAX**	0.010214	0.002771	3.686596	0.0027
REER	6.11E-05	0.000600	0.101907	0.9204
LNNOEX	-0.062570	0.073043	-0.856617	0.4072
LNEEG**	-0.073177	0.030030	-2.436817	0.0299
C	1.513615	2.408995	0.628318	0.5407
CointEq (-1)***	-0.056926	0.004493	12.66935	0.0000
Panel B: Long Run Model				
TAX	-0.275919	0.381413	-0.723414	0.4822
REER	-0.020123	0.025021	-0.804276	0.4357
LNNOEX	3.363494	4.162018	0.808140	0.4335
LNEEG	1.285471	1.395578	0.921103	0.3738
C	26.58914	60.03863	0.442867	0.6651

Source: Author's computation (2024) using E-Views 10
*, ** and *** denote significant at 10%, 5% and 1% respectively. The dependent variable is non-oil tax revenue (lnTTR), the dependent variables are export expansion grant (lnEEG), tax rate (TAX) and real effective exchange rate (REER)
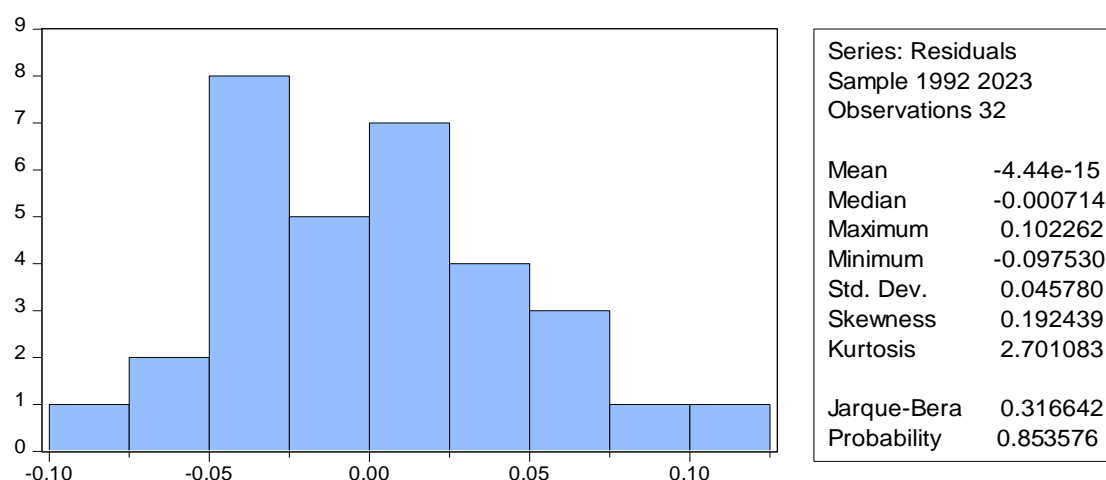
Graph 1. Jarque-Bera normality test
Source: Author's computation using E-views 10.0 (2024)

Furthermore, non-oil export had negative insignificant effect on non-oil tax revenue in Nigeria in the short run (β_8 **= -0.06**, p-value **=** 0.4072 > 0.05) but had an insignificant positive effect in the long run (α_7 **=** 3.36, p-value = 0.4335 > 0.05). By implication, a percentage increase in non-oil export led to 0.06% decrease in non-oil tax revenue in Nigeria in the short run but to 3.36% increase in the long run. However, both the decrease and increase did not significantly affect non-oil tax revenue in Nigeria within the period under study.

The equilibrium (ECM) version coefficient of -0.056926 which is negative and significant at 1% significant levels shows that approximately 5% disequilibrium in the short run can be corrected in the long run. This implies at the speed up of 0.05, there is possibility of convergence to the long run equilibrium.

4.3 Post Estimation Test

Breusch-Godfrey Serial Correlation Lm Test:

Hypothesis:

H_0: The sample data are not significantly different than a normal population.
H_1: The sample data are significantly different than a normal population.
Probabilities > 0.05 accept the null hypothesis.
Probabilities < 0.05 reject the null hypothesis.

From the result, the probability values is 0.854 > 0.05 at 5% significant level. Therefore, the null hypothesis was not rejected. This means that the residuals were normally distributed.

The result in Table 9 panel; A shows the prob. (chi-square) having value of 0.0801 > 0.05 at 5% level of significance. Therefore, we do not reject the null hypothesis which states that there is no serial correlation. This section in conclusion reflected the absence of serial correlation or autocorrelation.

Furthermore, at panel B, the test helps to ascertain whether the variance of the error term is constant. The results showed prob. (chi-square) having value of 0.7437 > 0.05 at 5% level of significance. Therefore, we accept the null hypothesis which states that the variance of the error term is constant. This implies that, there is homoscedasticity.

At panel C, The test for linearity was carried out using the Ramsey RESET Test. The decision criteria for linearity is to accept the null hypothesis when the probability of the F-statistics is significant at 5% level of significance. Therefore, given that the probability of the F-statistics as shown in the Table 9 panel C above is 0.6120, we do not accept the null hypothesis, i.e. there is linearity in the model.

There are two important lines in the Graphs 2 and 3. The red lines represent 5% significant level while the blue line represents CUSUM stability line. If the blue line is in-between the two red lines, the model is stable. But if the CUSUM blue line is above or below the two red lines, the model is not stable. Based on the results, the red line lines lie in-between the blue lines in the both Graphs 2 and 3. This shows that the model is stable.

Table 9. Other post estimation tests

Panel A: Breusch-Godfrey Serial Correlation LM Test			
F-statistic	1.270565	Prob. F (1,12)	0.2817
Obs*R-squared	3.063778	Prob. Chi-Square (1)	0.0801
Panel B: Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.015904	Prob. F (11,20)	0.0834
Obs*R-squared	16.82511	Prob. Chi-Square (11)	0.1132
Scaled explained SS	7.656471	Prob. Chi-Square (11)	0.7437
Panel C: Ramsey Reset Test			
	Value	Df	Probability
t-statistic	0.520801	12	0.6120
F-statistic	0.271234	(1, 12)	0.6120

Source: Author's computation using E-views 10.0(2024)

4.4 Stability Test
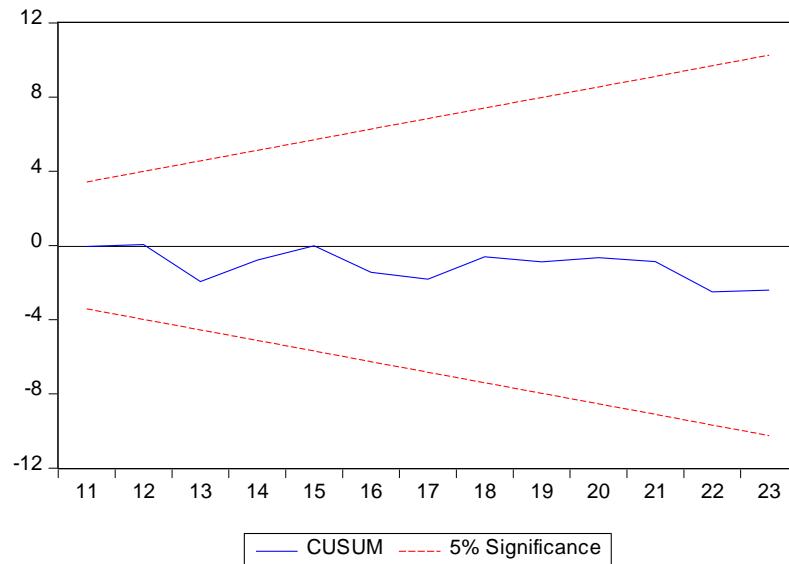
Graph. 2. CUSUM Stability Test
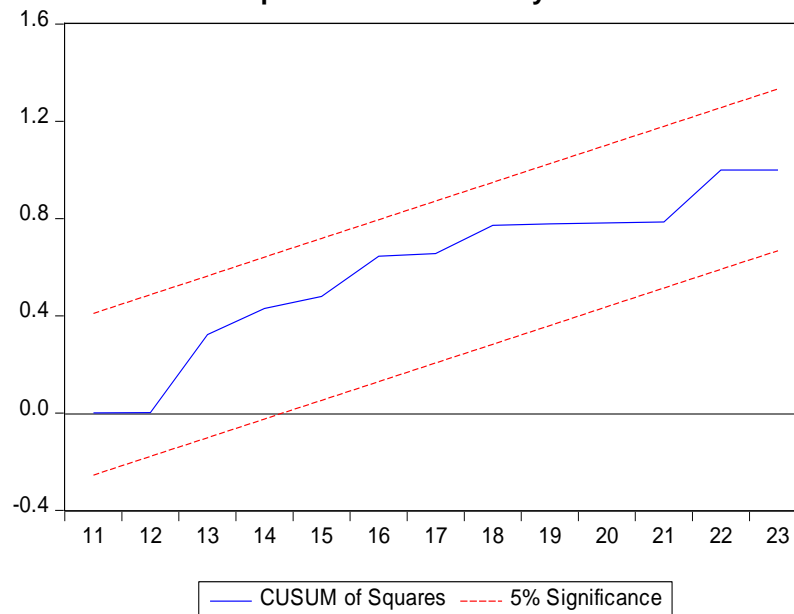
Graph. 3. CUSUM of Squares

5. CONCLUSION AND RECOMMENDA-TION

Export incentives proxied by export expansion grant (EEG) had negative and significant effect on total non-oil revenue (TTR) in the short run, and positive and insignificant in the long run. The implications of these outcomes are obvious. First, EEG failed in its core objective of being a catalyst to non-oil productive growth that would have generated employment, increase productivity, improve competitiveness of export goods and expand the productive capacity of the economy. The achievement of those expectations would have translated into increased non-oil tax revenue and reflect positive significant impact on the tax handles. The result validates the earlier positions by Ali & Madueme, (2019) and Sani & Salihu, (2020).

These results raise a fundamental concern of policy, implementation and evaluation. Karimi,

(2016) posited that incentives can be catalyst or a drain. Studies across the globe have also shown that mismanagement of incentives have led to humongous revenue leakages to governments generally both for developed and developing countries (Boakye, 2020; Dillion, 2017; Clausing, 2016). Tax holidays, waivers, exemptions and rebates which were meant to encourage specific sector products and diversification have become a waste of revenue as the result of this study has shown (EEG was significant and negatively correlated with TTR, it was insignificant with VAT & CIT and negative with CED). Expectedly, Jung (2023) reports that Nigeria lost N6.7 trillion in 2021 to tax waivers, import duty exemptions and rebates. Therefore, export incentives have become a drain to government resources over the years, but studies across the globe have also shown that incentives can be a catalyst to economic growth and development as in the case of Malaysia, Chile and Myanmar (Gnangnon, 2017; Ayres & Freire, 2014; Hanson & Lundwin, 2004).

Furthermore, tax rate (TAX) had positive and significant effect on non-oil tax revenue in Nigeria in the short run, implying that increase in tax rate initially generates a corresponding increase in non-oil tax revenue, but in the long run, tax rate became negative and insignificant. This implies that further increases in tax rate will result in decrease in non-oil tax revenue. This is in line with laffer curve theory (Laffer, 2004). The economic implication is that continuous increment of tax rate does not guarantee increase in tax revenue to government. The economic effect may become negative beyond the point tax payers (even for import) reduce their purchases or production, or resort to tax avoidance, evasion and other tax manipulative tactics to avoid tax payment.

The study therefore recommended that that export expansion grant processing time frame and payment should be improved. There is an urgent to review the implementation of export expansion grant and ensure timely processing, approval and disbursement of the grant to mitigate as loss in time. The present arrangement where export expansion grant approvals are given years after the export transaction had taken place need to be reviewed as it mitigates against the benefits it was intended to provide. It is important to remember that the essence of the export expansion grant was to encourage competitiveness of the export goods, and receipt of the grant within short period after the conclusion of transaction would help the company to maintain a healthy financial position.

5.1 Suggestions for Further Study

It would be interesting to undertake studies to determine the optimal tariff rate for a developing country like Nigeria and subject the analysis to Laffer curve theory. It would also be interesting to investigate the nexus of institutional efficiency on export incentives in Nigeria.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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