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Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics

Düsternbrooker Weg 120

24105 Kiel (Germany)

E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)

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The Impact of Petroleum Tax Incentives on Foreign Direct Investment Inflow: Evidence from Nigeria

Adam Konto Kyari*

Department of Accounting, College of Business Administration, Imam Abulrahman Bin Faisal University, Dammam, Saudi Arabia.

*Email: akkyari@iau.edu.sa

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ABSTRACT

Recent events in the Nigerian oil and gas industry has called to question the appropriateness of the Nigerian petroleum tax incentives in attracting foreign direct investments into the nation's oil and gas sector. There were instances of multinational oil companies relocating to other countries due to uncertainty of operating environment. As a result, this study investigates whether the Nigerian petroleum tax incentives package is appropriate in attracting foreign direct investments. Data was collected via a five point Likert questionnaire and analysed using descriptive statistics and Kruskal-Wallis technique. The study revealed, among others, that Nigeria's petroleum tax incentive package is sufficient in number and appropriate in mix in attracting foreign direct investment. This study concludes that Nigeria's petroleum tax incentive package is suitable in attracting foreign direct investments. Equally, the study concludes that the tax incentives is sufficient in number and appropriate in mix in attracting foreign direct investments into the nation's oil and gas industry. Finally, the study recommends further study on other possible ways of attracting inflow of FDI into the Nigerian oil and gas industry.

Keywords: Foreign, Investments, Oil, Gas, Taxation, Incentives

JEL Classifications: F21, H21

1. INTRODUCTION

Before the discovery of oil, agriculture had been the main stay of the Nigerian economy contributing about 95% to foreign exchange earnings and 56% to gross domestic earnings (World Bank, 2013). However, since the discovery of oil in the early 1970s (Budina et al., 2007), Nigeria became heavily dependent on oil as its source of foreign exchange earnings. Oil became the backbone of the Nigerian economy contributing approximately 90% of foreign exchange earnings and about 80% of government total revenue (Nweze and Edame, 2016).

Despite this heavy dependant on oil, Nigeria, like most host developing countries, does not possess the technical knowledge to explore its crude resources. As a result, it entered into petroleum and exploration contract for the exploration of its

crude oil resource. Through its national oil company, Nigeria has been in partnerships with several multinational oil companies (MNOCs) through joint venture and production sharing contracts (Nwokeji, 2007). This arrangement, which stemmed from the lack of technical knowhow, was sponsored by the organisation of petroleum exporting countries' resolution of 1968 which enjoined member countries to acquire participation in the ownership of the concession-holding companies.

In order to sustain the contractual relationships and to encourage inflow of foreign direct investments (FDI), government has provided several petroleum tax incentives to the MNOCs. However, recent events unfolding in the Nigerian petroleum industry have called to question whether these tax incentives are collectively and individually appropriate in attracting the MNOCs' to increase their investments in the Nigerian oil and gas

industry. From the point of view of the MNOCs, it may not be out of place to suggest that their much needed investments have been static, if not decreasing over the past few decades. For example, benchmarking oil reserve as indicator of MNOCs' investments, Nigeria's oil reserve increased from 34 billion barrels in 2004 to slightly above 37 billion barrels in 2011 which was far the government's target of 40 billion barrels in 2010 (CIA, 2012), that to date has not been achieved.

This lack of investments by the MNOCs and associated effects on reserve growth might be attributed to years of uncertainty in the Nigerian operating atmosphere. These uncertainties may not be unconnected to the MNOCs concerns with the nation's petroleum industry bill (PIB) (EIA, 2012) that was passed recently by the national assembly. The bill, if signed into law, will among other things, reform the entire Nigerian petroleum industry by reducing the tax incentives and increasing greater share of oil revenue to the government as well as to the oil producing communities. This development has caused Nigeria huge investment in the oil sector as evidenced suggest that the MNOCs have put on hold investment decisions, with some of them had since relocated to neighbouring countries like Ghana and Angola (Alike, 2011).

Literature on the role of tax incentives in promoting FDI is massive (e.g. Grubert and Mutti, 2000; Klemm and Parys, 2009; Munongo, 2015; Sebastian, 2009; Gumo, 2013; Musyoka, 2012; Fahmi, 2012; Olaleye, 2016; Olaleye et al., 2016; Effiok et al., 2013; George and Bariyima, 2015) However, majority of this studies were on non-oil sectors suggesting dearth of studies that relates to the oil and gas industry. This study fills this gap by not only investigating the impact of the Nigerian petroleum tax incentives on FDI inflow but also examines the appropriateness of the incentives package in attracting foreign direct investments into the Nigerian oil and gas industry.

This study is underpinned by the theory internalisation which assumes that firms must internalise the market values of their intangibles by engaging in FDI when it expects the benefits to be derived from using its intangibles abroad will be more than the cost of running a foreign subsidiary, which is most often large (Ethier and Horn, 1990). This theory is applicable to this study because Nigeria lacks the technical-knowhow to exploit its crude oil which necessitates the engagement of the MNOCs to bring in their technical knowledge to make possible the exploitation. The theory is also applicable to this study because the MNOCs are looking for jurisdiction where they can invest at minimal risks and the provision of tax incentives will reduce their risks and create the opportunity for them to make improved profit.

The sample of the study consists of petroleum taxation experts drawn from across the government agencies, MNOCs and the general public. These experts were purposively selected and surveyed. The analysis of the data using descriptive statistics and Kruskal-Wallis tests revealed a number of findings. First, the study revealed that the Nigerian petroleum tax incentives are effective in sustaining inflow of FDI. Similarly, the study revealed that the tax incentives are sufficient in attracting FDI into the country's oil and gas industry. Finally, the study revealed that the mix of the

incentives package is appropriate in attracting the flow of FDI in the Nigeria's oil industry.

The study contributes to knowledge in so many ways. First, the study contributes to the literature on the role of tax incentives in attracting FDI into the oil and gas industry. Thus, because of the limited amount of literature on the role of tax incentives on FDI inflow in the oil industry, this studies could help bridge the gap. In same manner, the study contributes to knowledge in serving as a reference material for policy debates pertaining to the role of incentive package in attracting FDI inflow.

The rest of the study is divided into six sections. The section that follows presents review of related literature and theoretical framework. Research methodology is discussed in section three while results are presented in section four. Discussion of results is given in section five. Section six concludes the study.

2. LITERATURE REVIEW

Tax incentives, otherwise referred to as tax breaks, tax holidays, tax exemptions or tax concessions, are special tax treatments given to certain groups of tax payers leading to those tax payers paying less tax or deferring the tax liability to date (Diane, 2019). Tax incentives are fundamental aspect of oil and gas taxation. Since governments across most oil producing countries lack the technical and financial ability to undertake exploration and production activities (Anenih, 2003), they turn to the MNOCs who possess both financial and technical fortes required for exploration and production of petroleum resources by offering them incentive packages mainly designed to attract inflow of investments. This assists the host government to realise their needs for increased FDI while at the same time make the investment environment economically attractive to the MNOCs. In this way, the interests of both the host government and the oil companies are captured in the tax system.

Petroleum tax incentives can take several forms. It can come as accelerated depreciation of capital expenditure, fiscal stability clauses, infrastructure tax credits, and double deduction, among others. Table 1 presents some of the tax incentives offered in the oil and gas sector.

The role of tax incentives in promoting FDI is well researched. However, majority of the studies were mainly conducted on industries other than the petroleum industry. For example, Grubert and Mutti (2000) conducted a study on the impact of effective tax rate on the investment decisions of sixty multinational plant and equipment companies in the United States (US). The study revealed a significant negative relationship between the two variables. Similarly, Klemm and Parys (2009) investigated the impact of effective tax rate on FDI among forty countries. Unlike Grubert and Mutti (2000) study, their findings revealed a strong positive relationship between tax incentives and FDI. Furthermore, using South African Development Community (SADC) as case, Munongo (2015) studied the relationship between tax incentives and FDI inflows. The study revealed that tax incentives positively impact on the inflow of FDI into SADC countries.

Table 1: Petroleum tax incentives

Incentives	Description
Exemptions	Income that are excluded from the tax base (e.g., tax holidays)
Allowances	Amounts deducted from tax liability (e.g., social and community infrastructure tax credits and the research and development tax offset)
Credits	Amounts deducted from tax liability (e.g., social and community infrastructure tax credits and the research and development tax offset)
Rate reliefs	Reduced rate of tax applied to a class of taxpayers or activities (e.g. company income tax and employee taxes)
Tax deferrals	Relief that takes the form of a delay in paying tax (e.g., accelerated depreciation that allows a faster schedule than is available to the rest of the economy)
Duty exemptions	Duty not collected on imports that in the usual course would be collected
Goods and services tax/value added tax exemptions	Consumption tax not collected either on imports, mineral production or value-added
Privilege zones and project-specific tax relief	Include tax-free zones, fully deductible resource exploration costs

Source: Diane (2019), tabulated by the author

A study on the impact of tax incentives on FDI in OECD countries by Sebastian (2009) found that both costs and benefits are derived from every tax incentive and thus, concluded that tax incentives alone are not likely to attract or increase FDI. In the same vein, Gumo (2013) investigated the effect of tax incentives on FDI inflows of Kenya. Consistent with other studies, the study revealed that tax incentives have positive connection with FDI inflow in Kenya. On the other hand, Musyoka (2012) investigated the impact of investment incentives, trade incentives and import duty exemption on FDI. The findings of the study mainly revealed that tax incentives result in losses of revenue to the government. Similarly, Fahmi (2012) conducted a research on the relationship between tax holiday and FDI in Indonesia and found a positive relationship.

Studies relating to Nigeria also followed the same patterns. For example, Olaleye (2016) studied the impact of tax incentives on FDI inflow on Nigerian listed companies. The findings of the study disclosed a significant positive relationship between tax incentives and FDI inflow into Nigerian listed companies. Similarly, Olaleye et al. (2016) examined the effect of reduced company income tax on FDI in the Nigerian manufacturing industry. Consistent with Olaleye (2016), the study revealed a significant positive relationship between reduced income tax and FDI inflow in the manufacturing sector. Effiok et al. (2013) examined the impact of tax policy and incentives on FDI and economic growth. Their findings showed that tax rate policy had significant positive relationship with FDI. On their part, George and Bariyima (2015) studied the influence of tax incentives on the location of FDI in Nigeria. Unlike most of the studies, their findings revealed a negative relationship between tax incentives and FDI. Furthermore, in their study on the impact of tax incentive policy on the pattern of FDI in non-oil sector, Ethier and Horn (1990) found that tax incentives policy has the potentials of changing the flow of FDI.

It is obvious from the above review that study on the relationship between tax incentives and FDI inflow in the oil and gas industry is lacking. As a result, this study aims to fill this gap by not only investigating the impact of the Nigerian petroleum tax incentives on FDI inflow but also examines whether the incentives package is appropriate, both in terms of sufficiency and mix, in attracting foreign direct investments inflow into the Nigerian oil and gas industry.

2.1. Hypothesis

The main objective of the Nigerian petroleum tax system is to ensure the generation to the government of fair share of the oil wealth accruing from the extraction of the petroleum resources while at the same time encouraging the MNOCs to ensure optimal economic recovery of oil resources (Nakhle, 2008). In order to achieve this broad objective, various tax incentives are given to the MNOCs to encourage them minimize wastages so that the profit available for share between them and the government is improved (ESMAP, 23). Though it is significant that Nigeria improves on the incentives it gives the MNOCs, it is worth noting that the effectiveness of tax incentives as determinant of FDI inflow, as reviewed above, is not conclusive. Some scholars are of the view that tax incentives attract and increase FDI (Allen and Wells, 2001) while others are not convinced (Morisset and Pirnia, 2001). On the basis of this conflicting views, this study hypothesis as follows.

H_1 : Nigeria's petroleum tax incentives package positively influences FDI into the nation's oil and gas industry.

There is no particular tax incentives package that is applicable to all nations. A tax incentive package that is appropriate for a particular country might not be good for another country as there is no single tax system that can meet the needs of every nation (Bird and Zolt, 2003). An appropriate tax system for any country is determined by its circumstances, needs and objectives (Otto and Cordes, 2002). However, whatever the circumstances and tax objectives a country has, its tax system should not be far from what is obtained in other countries as this has the potentials of making the MNOCs diverting their investments elsewhere (Daniel, 1995). Thus, a tax incentive package should be relatively sufficient enough to attract inflow of FDI from the MNOCs. Nigeria, as one of the oil producing nation competing for a share of the MNOCs FDI, has offered tax holiday/exemptions, investment allowances/credit, duty/VAT exemption/reduction, research and development (R&D), guaranteed profit margin and offsetting of new projects' costs on ongoing projects as tax incentives to the MNOCs (ESMAP, 2004; UNCTAD, 2000). The question as to whether these incentives are sufficient to attract FDI hinge on what is obtained in other jurisdictions. On the basis of this discussion, this study hypothesis as follows.

H_2 : Nigeria's petroleum tax incentives package is sufficient to attract FDI into the nation's oil and gas industry.

A country's tax structure is one of the important considerations when deciding on the tax incentives to offer the MNOCs. The MNOCs are interested in the overall impact of the tax system to both share the government receives as taxes and the manner in which the taxes are imposed throughout the life of an oil field. Thus, the ability of the government, Daniel (1995) note, to structure its tax system by providing adequate mix of tax incentives such that

the risks affecting the MNOCs are reduced has the likelihood of securing increased FDI in the long run. However, structuring a tax system to have an appropriate mix of tax incentive is not an easy task for a number of reasons. First, governments do not give all the incentives applicable to the industry to the MNOCs (UNCTAD, 2000). Instead, they decide on certain number of incentives based on their needs and circumstances. Second, each of the incentives has its advantages and disadvantages (Sebastian, 2009). This underscores the government's desire for better incentives package to the MNOCs. Third, incentive preferences of the MNOCs is also another reason that makes the determination of a good incentives mix difficult. Some MNOCs, for example, might prefer tax holiday for import exemption and vice versa. This questions the appropriateness of the tax mix provided by host governments. Accordingly, the following hypothesis is developed.

H₃: Nigeria's petroleum tax incentives package is adequately mixed to attract FDI into the nation's oil and gas industry.

2.2. Theoretical Framework

There are number of theories that underpin the relationship between tax incentives and FDI inflow (e.g., internalization theory, market imperfections theory and eclectic theory, among others). However, this study is guided by the internalization theory.

The internalization theory was first coined by Coase (1937) at the national level and then later on Hymer (1976) gave it international dimension. The theory assumes that intangible assets have some features of public goods because their value increase in direct proportion to firm's market value. Since intangibles are mainly based on proprietary information, they cannot be exchanged at arm's length for a number of reasons stemming from economics of information and of public goods (Errunxa and Lemma, 1984). Thus, in order to ripe the extra value of using these intangibles, a firm must internalize the market for their intangibles by engaging in FDI. This can be done if a value maximising firm expects that the benefits to be derived from using its intangibles abroad will be more than the cost running a foreign subsidiary, which is most often large (Ethier and Horn, 1990).

This theory is applicable to this study for three reasons. First, Nigeria lacks the intangible assets, that is the technical know-how, to explore its crude oil and hence the need for MNOCs to bring in their technical knowledge to make possible the exploitation of the crude resources. Second, the MNOCs are looking for jurisdiction where they can invest at minimal risks. In this way, the provision of tax incentives by the host government will reduce their risks and create the opportunity for improved profit. Finally, the more appropriate the tax incentives package is, the more likely the MNOCs will achieve their value maximising objectives.

3. METHODOLOGY

This study employs qualitative research method because it measures the perception of people on the impact of tax incentives in attracting FDI inflow into the Nigerian oil and gas industry. The choice of the qualitative method seems appropriate because the findings of the study cannot be generalised across oil producing countries due to the peculiarity of each country. Sequel to

constraints bordering time and resources, as noted by Patton (2002), a purposive sample of 150 respondents was drawn from the population of experts in the petroleum matters. Consistent with Sandelowski (1995), the purposive sampling is chosen because it permits the determination of appropriate sample size. Equally, the sampling techniques is employed because of its extreme level of accuracy (Thietart, 2001).

A five point Likert questionnaire was used for the collection of data for the study. The questionnaire was first pilot tested with some of the respondents across the experts group (Blaxter et al., 2010). Similarly, reliability and validity tests were conducted in order to reduce possible threats to the credibility of the research (Golafshani, 2003). The administration of the questionnaire was done personally to the respondents. Out of the 150 questionnaires administered, 127 were returned, and except for 3 questionnaires, all were completed correctly. Thus, a total of 124 questionnaires, representing 83% of the total administered questionnaires were used for the study. This high percentage suggests that the questionnaire was well developed (Walonick, 2010). The data was analysed using descriptive statistics and the Kruskal-Wallis test.

4. RESULTS

Tables 2 present the descriptive statistics of the respondents' views on the impact of petroleum tax incentives in attracting FDI into the Nigerian oil and gas industry. Panel A of Table 2 presents the effectiveness of the Nigeria's petroleum tax incentives in influencing the inflow of FDI into the nation's oil and gas sector. From Panel A, 87% of the respondents agreed that tax holidays or tax exemptions are effective in attracting FDI into the Nigerian oil and gas industry, while about 7% were neutral and 6% in disagreement. Thus, with a mean of 3.9 and median of 4.0, the results suggest that tax holidays are effective in attracting the inflow of FDI. This trend is the same for all the tax incentives.

Panel B presents the respondents' views on the sufficiency of the tax incentives in attracting FDI into the Nigeria oil and gas sector. On whether the number of petroleum tax incentives offered by Nigeria is above the global average, 93% of the respondents agreed that the number of tax incentives offered by Nigeria is more than the global average. The respondents were also in the affirmative when asked whether Nigeria offers more tax incentives relative to regional competing oil producing nations. Precisely, 65% of the respondents were in agreement while 25% were neutral and just above 10% were in disagreement. In relation of the expectations of the MNOCs, 88% of the respondents disagreed that the number of the incentives offered by Nigeria exceed the expectations of the MNOCs. With a mean of 1.6 and median of 1.0, the majority of the respondent were in disagreement. Similarly, 79% of the respondents agreed that the Nigerian petroleum tax incentives package has adequately provided for any unforeseen increase in the risks of the MNOCs.

The appropriateness of the petroleum tax incentives mix in attracting the inflow of FDI into the Nigerian oil and gas sector

Table 2: Descriptive statistics

Questions	M	Md	Std.	Responses (%)					
				SD	D	N	A	SA	TR
Panel A: Influence of tax incentives on FDI inflow									
Tax holidays/exemptions	3.9	4.0	0.7	2 (1.6)	6 (4.8)	8 (6.5)	91 (73.4)	17 (13.7)	124 (100)
Investment allowance/credit	3.7	4.0	0.9	6 (4.8)	8 (6.5)	17 (13.7)	84 (67.7)	9 (7.3)	124 (100)
Duty/VAT exemption	3.9	4.0	0.8	2 (1.6)	7 (5.6)	17 (13.7)	78 (62.9)	20 (16.2)	124 (100)
R&D allowances	3.8	4.0	1.0	6 (4.8)	8 (6.5)	11 (8.9)	79 (63.6)	20 (16.2)	124 (100)
Guaranteed profit margins	3.8	4.0	0.7	2 (1.6)	6 (4.8)	12 (9.7)	96 (77.4)	8 (6.5)	124 (100)
New projects' costs offset	4.1	4.0	0.5	0 (0.0)	2 (1.6)	4 (3.2)	93 (75.0)	25 (20.2)	124 (100)
Panel B: Sufficiency of tax incentives in attracting FDI inflow									
The number of petroleum tax incentives in Nigeria is above global average	4.3	4.0	0.6	0 (0.0)	0 (0.0)	9 (7.3)	65 (52.4)	50 (40.3)	124 (100)
The number of petroleum tax incentives in Nigeria is more than what is offered by regional producing nations	3.7	4.0	1.0	6 (4.8)	7 (5.6)	31 (25.0)	55 (44.4)	25 (20.2)	124 (100)
The number of petroleum tax incentives in Nigeria is more than what the MNOCs are expecting.	1.6	1.0	1.0	77 (62.1)	32 (25.8)	4 (3.2)	8 (6.5)	3 (2.4)	124 (100)
The number of petroleum tax incentives in Nigeria has provided allowances for unforeseen increase in risks of the MNOCs	3.9	1.0	1.0	6 (4.8)	8 (6.5)	11 (8.9)	66 (53.2)	33 (26.6)	124 (100)
Panel C: Appropriateness of tax incentives mix in attracting FDI inflow									
Nigeria's petroleum tax incentives package is based on the objectives, needs and circumstances of Nigeria	1.9	2.0	0.9	45 (36.3)	63 (50.9)	6 (4.8)	7 (5.6)	3 (2.4)	124 (100)
Nigeria's petroleum tax incentives package has captured the benefits and drawbacks of each tax incentive	3.9	4.0	1.0	7 (5.6)	9 (7.3)	5 (4.0)	77 (62.1)	26 (21.0)	124 (100)
Nigeria's petroleum tax incentives package has provided allowances for the generic tax incentives preferences of the MNOCs	4.0	4.0	0.8	3 (2.4)	2 (1.6)	14 (11.3)	79 (63.7)	26 (21.0)	124 (100)

Survey Result, 2019. Where: M: Mean, Md: Median, SD: Standard deviation, SD: Strongly disagree, D: Agree, N: Neutral, A: Agree, SA: Strongly agree, TR: Total responses

is presented in Panel C of Table 2. From Panel C, 87% of the respondents disagreed that mix of the tax incentives was based on the needs and circumstances of Nigeria. However, 83% of the respondents believed that the incentives mix has captured the advantages and disadvantages of each incentive. Similarly, about 85% of the respondents agreed that incentives preferences of the MNOCs were taken into consideration when deciding on the mix of tax incentives. These results, except for issues bordering the needs and circumstances of Nigeria, suggest that Nigeria petroleum tax incentives mix is appropriate for sustaining the inflow of FDI into the nation's oil and gas sector.

4.1. Kruskal–Wallis and *Post-hoc* Pairwise Tests

Three groups of experts were surveyed in this study, namely: government, MNOCs and the public. In order to know whether any differences in response exists across these groups of experts, Kruskal-Wallis tests were conducted to test the hypotheses developed in section 2.3.

4.1.1. Test of hypothesis H_1

Table 3 presents the Kruskal-Wallis and *post-hoc* pairwise test results used to test hypothesis H_1 . Panel A of Table 3 shows that all the $P < 5\%$. This suggests that the relationship between the groups were significant for all the tax incentives, meaning the respondents differed in their responses for the effectiveness of tax incentives in attracting FDI. Accordingly, *post-hoc* pairwise tests were carried out to determine where the differences lie and the results are presented in Panel B of Table 3.

4.1.2. Test of hypothesis H_2

Panel A and B of Table 4 respectively present the Kruskal-Wallis and *post-hoc* pairwise test results used to test hypothesis H_2 . From Table 4 Panel A, all of the Kruskal-Wallis tests results are significant at less 5% level, suggesting that the groups differed in the distribution of their responses for the sufficiency of the petroleum tax incentives in attracting FDI. Thus *post-hoc* pairwise tests were conducted to determine where the differences lie and the results are presented in Panel B of Table 4.

4.1.3. Test of hypothesis H_3

Table 5 presents the Kruskal-Wallis and *post-hoc* pairwise test results used to test hypothesis H_3 . From Table 5 Panel A, the Kruskal-Wallis tests revealed significant differences in the distribution of the responses of the respondents' groups in respect of the appropriateness of the mix of petroleum tax incentives in attracting FDI inflow. The areas of differences were determined via *post-hoc* pairwise tests and the results are presented in Panel B of Table 5.

5. DISCUSSIONS OF RESULTS

The results presented in section 4 above disclosed a number of findings. First, from Table 3, the study revealed a significant difference among the three groups of experts. In respect of all the tax incentives studied, the general public held different views from that held by the government and the MNOCs. While, on average,

Table 3: Kruskal–Wallis and *post-hoc* pairwise tests for the effectiveness of petroleum tax incentives in attracting FDI inflow

Panel A: Kruskal–Wallis test			
Null hypothesis	Chi-square	Sig.	
The distribution of the effectiveness of tax holidays/exemption in sustaining FDI inflow is the same across all the groups	25.958	0.000	
The distribution of the effectiveness of investment allowance/credit in sustaining FDI inflow is the same across all the groups	20.623	0.000	
The distribution of the effectiveness of duty/VAT exemption in sustaining FDI inflow is the same across all the groups	37.831	0.000	
The distribution of the effectiveness of R&D allowances in sustaining FDI inflow is the same across all the groups	37.481	0.000	
The distribution of the effectiveness of guaranteed profit margins in sustaining FDI inflow is the same across all the groups	45.421	0.000	
The distribution of the effectiveness of new projects' costs offset in sustaining FDI inflow is the same across all the groups	7.750	0.021	
Panel B: <i>Post-hoc</i> pairwise tests			
Items	Difference	Mean rank	Adj. Sig.
Tax holidays/exemptions	General public and government	44.74 and 74.79	0.000
	General public and MNOCs	44.74 and 68.30	0.000
Investment allowance/credit	General public and government	45.45 and 68.74	0.001
	General public and MNOCs	45.45 and 73.50	0.000
Duty/VAT exemption R&D allowances	General public and government	40.76 and 64.51	0.001
	General public and MNOCs	40.76 and 83.55	0.000
	Government and MNOCs	64.51 and 83.55	0.016
Guaranteed profit margins	General Public and Government	39.11 and 69.40	0.000
	General public and MNOCs	39.11 and 79.57	0.000
New projects' costs offset	General public and government	40.21 and 76.59	0.000
	General public and MNOCs	40.21 and 69.87	0.000
Tax holidays/exemptions	General public and MNOCs	52.95 and 68.53	0.032

Significance level = 0.05

Table 4: Kruskal–Wallis and *Post-hoc* pairwise tests for the sufficiency of petroleum tax incentives in sustaining FDI inflow

Panel A: Kruskal–Wallis test			
Null hypothesis	Chi-square	Sig.	
The respondents views the number of Nigeria's petroleum tax incentives being above global average is the same across all the groups	7.750	0.000	
The distribution as to the number of Nigeria's petroleum tax incentives being more than what is offered in regional producing nations is the same across all the groups	23.090	0.000	
The distribution as to the number of Nigeria's petroleum tax incentives being more than what the MNOCs expected is the same across all the groups	65.757	0.000	
The distribution as to the number of Nigeria's petroleum tax incentives being enough to cater for unforeseen increase in the risks of the MNOCs is the same across all the groups	65.273	0.000	
Panel B: <i>Post-hoc</i> pairwise tests			
Items	Difference	Mean rank	Adj. Sig.
The number of petroleum tax incentives in Nigeria is above global average	MNOCs and general public	42.00 and 68.94	0.001
	MNOCs and government	42.00 and 73.94	0.000
The number of petroleum tax incentives in Nigeria is more than what is offered by regional producing nations	MNOCs and general public	29.26 and 63.37	0.000
	MNOCs and government	29.26 and 89.78	0.000
The number of petroleum tax incentives in Nigeria is more than what the MNOCs are expecting	MNOCs and government	39.00 and 95.28	0.000
	General public and government	48.10 and 95.28	0.000
The number of petroleum tax incentives in Nigeria has provided allowances for unforeseen increase in risks of the MNOCs	MNOCs and general public	28.57 and 66.16	0.000
	MNOCs and government	28.57 and 86.00	0.000

Significance level = 0.05

the study confirmed that petroleum tax incentives are effective in attracting FDI into the Nigerian oil and gas industry, the general public seemed not to be agreement with it. One possible reason for such disagreement could be the inability of Nigeria in achieving its reserve targets due to the MNOCs placing their investments in hold as a results of uncertainty connected to the proposed reform of

the Nigerian petroleum industry by the government (CIA, 2012). The general public's disagreement could also be due to the recent moves by the MNOCs to sell their stakes in major offshore oil blocks (Bouso, 2019) and in some cases attempting to relocate their investment to neighboring countries (Alike, 2011). Despite these reasons, which seem genuine, there are evidences suggesting

Table 5: Kruskal–Wallis and *Post-hoc* Pairwise Tests for the appropriateness of mix of petroleum tax incentives in sustaining FDI inflow

Panel A: Kruskal–Wallis test			
Null hypothesis	Chi-square	Sig.	
The distribution of Nigeria's petroleum tax incentives package being based on Nigeria's needs and circumstances is the same across all the groups	29.943	0.000	
The distribution of Nigeria's petroleum tax incentives package capturing the advantages and disadvantages of each incentive is the same across all the groups	51.090	0.000	
The distribution of Nigeria's petroleum tax incentives package adequately providing for the generic incentives preferences of the MNOCs is same across all the groups	53.378	0.000	
Panel B: <i>Post-hoc</i> pairwise tests			
Items	Difference	Mean rank	Adj. Sig.
Nigeria's petroleum tax incentives package is based on the objectives, needs and circumstances of Nigeria	General public and MNOCs	50.66 and 86.53	0.000
	Government and MNOCs	53.00 and 86.53	0.000
Nigeria's petroleum tax incentives package has captured the benefits and drawbacks of each tax incentive	MNOCs and government	32.92 and 71.44	0.000
	MNOCs and general public	32.92 and 80.10	0.000
Nigeria's petroleum tax incentives package has provided allowances for the generic tax incentives preferences of the MNOCs	MNOCs and Government	34.50 and 66.00	0.000
	MNOCs and general public	34.50 and 84.61	0.000

Significance level = 0.05

that the MNOCs are still investing in Nigeria. For, example China alone has invested up to \$16 billion in the Nigerian oil and gas industry in a span of about 15 years between 2005 and 2019 (Oduah, 2019). Accordingly, it is not out of place to conclude that Nigeria's petroleum tax incentives are effective in attracting FDI.

The respondents were in agreement, except for issues relating to expectations of the MNOCs, that the Nigerian petroleum tax incentives are sufficient in number in attracting the inflow of FDI. However, the tests result from Table 4 Panel B disclosed that the respondents' groups differed in their responses and the resultant *post-hoc* pairwise tests showed one main difference, that is between the MNOCs, on one hand, and the government and general public, on the other hand. With mean rank lower than that of the government and general public, the MNOCs disagreed that the tax incentives are sufficient in number. Consistent with profit maximisation objective of the firm, the MNOCs' disagreement might not be a surprise because they are always looking for jurisdiction where their investments will yield them a higher return. Equally, their disagreement might be connected to what is obtained in other countries. For example, Uganda, Indonesia and Morocco, among others, all provide more tax incentives than Nigeria (Sunley et al., 2002). Notwithstanding, the MNOCs' views, the views of the government and the general public that the tax incentives are sufficient stands as evidence have shown that the number of incentives offered by Nigeria is above the global average (UNCTAD, 2000; Sunley et al., 2002).

The results in Table 5 Panel B revealed that MNOCs differed with the government and the general public on the appropriateness of the mix of tax incentives. First, the general public and the government disagreed, with a mean rank of 50.66 and 53.00, that the tax mix is in line with the needs and circumstances of Nigeria, while the MNOCs, with a mean rank of 86.53, agreed that the tax mix appropriately captured the needs and circumstances of Nigeria. In this regard, the government and the general public might not be correct because the main features of a country's tax system are mainly determined by the objectives, needs and circumstances of that country (Otto and Cordes, 2002). In terms of the benefits and

drawbacks as well as the incentives preferences of the MNOCs, the MNOCs were in disagreement while the government and the general public believed they were appropriate. The agreement of the government and the general public might be based on the fact that the broad objective of any petroleum tax system is fairness in ensuring that maximum revenue accrues to the government while at the same time the investors are guaranteed a reasonable return on their investment (Nakhle, 2008). Similarly, the MNOCs disagreed that the tax mix does not provide for their generic incentive preferences and thus, it is not appropriate for attracting FDI inflow. The government and the general public, on the other hand, believed that the mix is appropriate for attracting the inflow of FDI. One reason supporting the views of the government and the public is that in the process of designing a petroleum tax system compromise are made because the interests of the government and that of the investors are conflicting rather than complementing (Stauffer and Gault, 1985). Another reason is that the MNOCs have choice of where to invest their resources and therefore, might not likely to invest in a country that provides incentives that is not their choice.

6. CONCLUSION

This study investigated the impact of petroleum tax incentives in attracting FDI into the Nigerian oil and gas industry. On the basis of the discussion of the empirical evidence in section 5, a number of conclusions are made. First, the study concludes that Nigerian petroleum tax incentives are effective in attracting and sustaining FDI into the nation's oil and gas industry. Despite the disagreement showed by the general public, the fact that the MNOCs investments is increasing (China in particular) is a confirmation that the incentives are effective in attracting FDI into Nigeria's oil and gas sector.

Second, it is also the conclusion of this study that the Nigeria's petroleum tax incentives are sufficient in attracting the inflow of FDI into the country. Being more than the global average and better than that of regional competitors, this conclusion is justified.

Third, this study also concludes that the mix of the Nigeria's petroleum tax incentives package is appropriate because all of the incentives are applicable to the oil and gas industry and are among the ones provided by most of the oil producing nations. In addition, the incentives provided are arguably the popular incentives desired by the MNOCs.

Whereas the conclusions above have met the objectives of this study, further studies are recommended to examine other likely ways of attracting FDI into the Nigerian oil and gas industry. In the same vein, it is recommended that further research be conducted to examine the extent to which the Nigerian petroleum tax incentives package has captured the interests of both the government and MNOCs.

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