Do the Consequence of Taxation Impact Household Consumptions in Nigeria? Absolute Outcome from Autoregressive Distributed Lag (ARDL)

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Do the Consequence of Taxation Impact Household Consumptions in Nigeria? Absolute Outcome from Autoregressive Distributed Lag (ARDL)

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ABSTRACT
Purpose: This study investigated taxes’ effect on household consumption expenditure in Nigeria. Taxation was examined through Petroleum Profit Tax, Company income Tax, Value Added Tax, and Customs and excise duties while household consumption expenditure was proxied with the aggregation of households’ expenditure expended on daily needs and procurement of others useful products.

Design/Methodology/Approach: The established data are sourced through Central Bank of Nigeria statistical bulletin and annual reports of federal Inland Revenue for a period of 31 years, spanning from 1990-2021, in order to examine the effect of taxation on household consumption expenditure in Nigeria. To achieve the motive behind this study, Autoregressive distributed lag Model, unit root test, Cointegration Test, correlation analysis, lag selection test, and regression, as well as normality test and stability test, were also involved as post-analysis confirmatory tests.

Findings: It was discovered that Petroleum Profit Tax has significant, strong, and positive influence on household consumption, but Company income Tax, Value Added Tax, and Customs and Excise duties have negative significant influence on household consumption. Conclusively, taxes have a negative effect on household consumption expenditure in Nigeria.

Originality: Having critically reviewed the existing studies, it was invariably realized that none of the extant studies examined how taxes influence household consumptions in Nigeria, their studies were confined to taxation effect on economic growth, investment, inflation, and government expenditure. Hence, this study incorporated Autoregressive distributed lag (ARDL) Model to analyze the effect of taxes on household consumption in Nigeria which made the study unique among the existing studies.

KEYWORDS
Household Consumption; Petroleum Profit Tax; Value Added Tax; Company income Tax; Customs and Excise Duties.

JEL CLASSIFICATION
H31, H250, H240

I. Introduction

Governments are elected globally to oversee the management of public funds for the betterment of the economy. Governments are not just saddled with the responsibility of gathering public funds but also equally in charge of how these funds are being utilized to achieve their constituted goals. One of these goals is to ensure productive consumption through which households maximize their consumption level. Cordella (2020) noted that government and household consumption are intertwined because part of government consumption is the household incomes (salaries) which are utilized for household consumption. Consumption is the part of household daily, monthly or annual incomes (salaries) which are utilized to purchase numerous goods and services to satisfy household needs and wants. Across different households, it has been discovered that the volume of consumption always changes with response to the fluctuation of income. That is, the increment and decrement in household income upsurges and downplay
consumption, respectively. Household consumption, according to Obiakor, Kwarbai and Okwu, (2015), is the aggregated household procurement of their needs annually, which is the essential component of the country's national income which invariably influences the economy of the country's overall performance.

Asogwa, & Nkolika, (2018) asserted that most governments globally are working on improving their economic performance, which is measured through households’ satisfactory level and standard of living. Meanwhile, the household standard of living is improved according to (Adegbite, 2018), through the residual income after the righteousness of tax payable has been fulfilled which boosts their purchase power to consume and achieve their desires. Adegbite, (2018) advocated further that household consumption is the expenditures incurred by households on the procurement of consumable items such as drugs, house rent, car maintenance, food stuff, and other ingredients which are indispensable to a successful and meaningful life.

Over the years, taxes have been the most recognized form of revenue to the government at all levels, most especially to the federal government. This was acknowledged in the submission made by Adegbite & Azeez, (2022) that more than 85% of federal revenue is generated from taxes in 2021. These incomes are duly realized from consumption taxes such as VAT and CED which are majorly derived from the taxes on households’ goods and services. Therefore, the increment and fluctuation in the price of consumable goods have gradually eroded the stagnant income household coupled with the increment VAT charges recently implemented on goods and services as ultimately borne by the households. The consumption level of many households appeared to have been sustaining a steady decline over the years. This is evidenced in the non-payment of salaries to some civil servants, and the high inflation rate. Also, the implementation of the minimum wage which ought to have enhanced household consumption across various parastatals seems to be neglected. It has been observed recently that households including the civil servants have been groaning on the recent increment in VAT, CED, and other taxes on the effects on their desires and need accomplishment which have been downplayed due to the reduction in their disposable income, multiple taxes, increment in exchange rate and inflation. These groaning prompted the examination of the effects of taxes on household consumption expenditure which has not been in existence in Nigeria. Therefore, this study intends to investigate the effect of on household consumption expenditure in Nigeria.

II. Literature Review and Hypotheses Development

Life-Cycle Hypothesis was propounded by Franco Modigliani in 1957. This theory is an extension of Kanye’s theory. During evaluation of Kanye’s theory by different scholars (Ando, & Modigliani, 1953), several critics were established. Keynes established that an increase in savings is expected to yield a better income. However, this assumption was not applicable to the public sector unlike the private sector which encourages savings and investments for expansion. Another problem established by Keynes theory was that he failed to address households’ consumption patterns over time. Modigliani (1957) described individual spending and savings over time lifetime. He argued that it is a common practice among households that they could only save when there is a rise in their income and consumption, and they prefer to borrow to sustain their increased comparison level than reducing it. Alexander and Gelardi (2012) explained that households plan their consumption over their lifetime considering their future
earnings. Many individuals take debts when they are young and vibrant, considering their future earnings to pay off their debts, then save during their middle age just to sustain their consumption level after retirement. According to Ajibola and Olowolaju, (2017), people do not have a smooth consumption over a lifetime. This is because people could not value their earnings in the future. The retirement of an individual requires a greater plan, effort, forecasting and adequate knowledge/information about financial instruments after retirement such as pension and gratuity. The ability to forecast a reduction in income after retirement encourages better ideas of savings during youthful and middle age.

The relevance of this theory to different households cannot be crucified, however, several criticisms have been made against the assumptions of this theory. Firstly, it was claimed that people’s wealth diminishes in old age. However, in recent times, this was not appreciated in our society as many pass their wealth to children and grandchildren (Balli & Balli, 2011, and Charles, at el 2018). Also, the life-cycle hypothesis’ assumption supports more of the people on high income. They have more tendency to have adequate knowledge on wealth creation as they have luxury of being able to invest, save and reinvest. However, households on low income gets discouraged from savings as they have no disposable income to save after it has been eroded by excess taxes. Despite the criticisms of this theory, it holds a strong significance to this study. Firstly, the assumption that increase in earnings result in a rise in household consumption is very true. In the real sense, a step-up in income requires a single rise in the standard of living, through household consumption. Furthermore, the fact that debts are incurred by the youths to sustain their consumption level believing that an increase in their futuristic income will cater for the debts incurred is also applicable in developing nation like Nigeria.

**Household Consumption**

Consumption is a part of household daily, monthly, or annual incomes (salaries) which are utilized to purchase numerous goods and services to satisfy household needs and wants. Consumption according to Ajibola and Olowolaju (2017), is the component of household income employed to finance the procurement of several services, goods and other necessity needs to sustain household essentialities. Globally, it has been observed that household needs vary from another and change according to their desires and priorities. Alexander and Gelardi (2012) explained that household consumption consists of the costs incurred by residents’ households, on individual’s consumption including those goods and services sold at uneconomical prices. In addition, Ndubueze-Ogaraku, Oyita, and Anyanwu (2016) argued that household consumption includes numerous kinds of imputed expenses of which the imputed rent for services of owner-occupied housing is generally the most significant one. However, the household sector consists of not only people living in traditional households, but also those living in communal establishments.

Household consumption includes but not limited to households purchase of products for their daily needs, partial payments for products provided by government, payments for licenses and permits, rents, procurement of foods stuff, house maintenances, and children up keeping. From the reviews, it can be deduced that household consumption refers to aggregate market value for all products which include durable products such as house appliances, cars, kitchen equipment home computers and other products like fridge procured by households from their income to satisfy their needs and improve their living standard. Gelardi (2012) explained that household consumption comprises the costs expended by households on consumption which includes all the goods and services.
disposed at economical prices. In addition, Ndubueze-Ogaraku, Oyita, and Anyanwu (2016) argued that household consumption includes numerous categories of attributed expenses such as house rents, goods, food stuffs, and other essential services for fulfilling life. However, the household sector comprises people not only residing in traditional households but also residing in communal settlements. According to Adegbite, (2018), household consumption embedded with households’ procurement of goods, products for daily needs, payments for goods, products services provided by government, payments for permit, licenses, and service’s input rents for housing. Household consumption invariably refers as the aggregated market value for all goods and services which includes durable products such as washing machines, electrical appliances, home computers, and cars procured by households from the income realized daily, monthly, and annually to quench their needs, improve standard living and empower their financial potency.

Taxation

Taxes serve as indispensable source of generating revenue which is imposed against income, wealth, and profit of corporate organizations and individuals by the government. Onaolapo et al., (2013) defined tax as the dues of mankind (followers) to their leaders for the betterment of life, and the progress of the country. In the same vein, Jonathan, Louis and Onyinyechi (2020) opined taxes as the major player for the expedient growth of the country. Adegbite, (2021) opined that those days are gone when taxes were voluntarily paid by the people, on the contrary, taxes have been enforced on people due to the negligence of the people to comply with the government directives on tax payment. Thus, Onakoya and Afintinni, (2016) explained taxes as compulsory charges enforces by the government through its agencies and the people. Taxes income is not limited to the income made from personal income for instance business profits, salaries, dividends, interests, royalties and discounts but also extended to compulsory levied against the profits of the companies, capital gains, capital transfer, and other companies that engage in offshore and on shore petroleum. Taxes’ imposition is expected to dispense influx income for the provision of social amenities, and security amenities as well as creation of good atmosphere conditions for wellbeing of economy, society, and populace.

Petroleum Profit Tax (PPT)

Over the years, petroleum has been a steady source of revenue to Nigerian government. This could be attributed to high charges levied on the huge profits earned by the petroleum industry. This form of charges is simply conceptualized as petroleum profit tax. Eugene and Abigail (2016) defined petroleum profit tax as a form of tax imposed by the federal government on the revenues of companies that are into petroleum operations. Petroleum operations include exploration, production and development functions but exclude refinery activity. This form of tax is governed by the petroleum profit tax Act 1990. It was stated by Adegbite, (2019) that all companies that are into the extraction, processing and marketing of petroleum products are subjected to a certain percentage of their total annual revenue as tax payable by the government on yearly basis. According to Festus & Samuel, (2011), PPT is a main revenue channel for Nigeria Government to meet her statutory responsibilities of guaranteeing economic development in the country. It was stated further that the government achieved macroeconomic objective such as fiscal policy and monetary policies through PPT which invariably confirmed that a strong and significant relationship existed between PPT and economic development. Household expenditure is one of the
yardsticks in determining development of economy. PPT gives an opportunity to collect and generate additional revenue by the government in addition to existing other income sources which is absolutely needed to discharge sustainable households’ welfare with the emphasis on upholding household income, and economic development and growth through provision of necessary and basic amenities which can be affordable by the household in the country. Therefore, it is projected that:

\[ H_{O1}: \text{PPT does not significantly affect Household consumption negatively in Nigeria.} \]

**Company Income Tax (CIT)**

CIT is collected from the income declared by the corporate organisations such as manufacturing companies and other companies that possessed more turnover than hundred million naira, and other companies with turnover ranging from N25,000,000 to N100,000,000 With the CIT flat rate of 30% and 20% respectively. According to Chukwumah and Umobong (2016), CIT is payable specifically on profits or income of companies accruing in, brought into, derived from or received in resident country. Edewusi and Ajayi (2019) opined that companies registered under any established enactment agencies in Nigeria are required to be subjected to companies’ income tax, that is, payment of a certain percentage from the annual profits of the company to the federal government. According to Yahaya & Bakare, (2018) CIT is levied on the profits of companies operating within the economy with the exception of the companies absolutely exempted from CIT Acts. The total income of all the companies or corporate organizations are assessable to CIT irrespective whether the profit has been received in or derived from or brought into Nigeria. CIT. Company income tax is ignited to generate income for the government with the benefits of providing social amenities, produce essential commodities which cannot be provided by any individual and companies for the benefit of household which invariably enhanced the growth of economy (Adegbite, 2015). Any company that produces consumer goods and industrial goods which are for household consumption pays tax to the government which invariably affect the price of the commodities. Thus, it is absolutely projected that:

\[ H_{O2}: \text{CIT does not significantly affect Household consumption in Nigeria.} \]

**Value Added Tax (VAT)**

The contributions of VAT as a form of tax to Nigerian economy has hit the edges of research world. Several scholars have conceptualized VAT from different perspectives. VAT is an indirect tax levied at every stage of production of services and goods. Edewusi and Ajayi (2019) explained VAT as consumption tax, charged at the stages of the chain of consumption. Primarily, the burden of VAT on a particular product or service is shouldered by the final consumers. The charges made on the change in value of a given product during the production process are known as VAT (Alpha, 2020). In advocating the submission, Worlu and Emeke (2015) concurred that VAT is the indirect tax charged on every increment in the value of services and goods produced or supplied. Ikeokwu and Micah (2019) reported that VAT had a significant impact on PCI after their investigation on the connectivity between indirect taxes and economic growth in Nigeria from 2000-2016. In fact, any added VAT on every stage of the productions changes the value of the goods and service during production which invariably increases the price of goods the reducing the disposable income of the households. Therefore, it is absolutely hypothesized that:

\[ H_{O3}: \text{VAT does not significantly affect Household consumption in Nigeria.} \]
**Customs and Excise Duties (CED)**

This refers to the levies put on the goods and services enter and exit the country. These levies, especially on the custom duties, is majorly under the purview of the custom authority who collected the levies on the imported goods and services on behalf of the government for effective utilization to achieve good governance. According to Fasina & Adegbite, (2015), excise duties is levied on manufactured goods, consumption or sale of good or service such as tobacco or alcohol only at 20% which is charged on all excisable goods or products so as to discourage its consumptions. Excise duties are not levied on imported goods. This levy is put on good in order to reduce the consumption or discourage the consumption by the populace in the country. These types of taxes also reduce the disposable income or purchases power of household and increase the income generated by the government. Therefore, it is hypothesized that:

\[ H_0: \text{CED negative effect on Household consumption in Nigeria} \]

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**Empirical Review of Related Studies**

Onakoya and Afintinni (2016) conducted a study which revealed a positive significant effect of corporate income tax, petroleum profit tax on gross domestic product but a negative significant effect of CED on economic growth proxied with gross domestic product. The outcome variable of the reviewed study was delimited to economic growth while the current study focuses on household consumption in Nigeria. In 2016, Eugene & Abigail investigated the influence of tax policy on the growth of Nigerian economy using OLS regression analysis method. The findings revealed that PPT, CIT, CED, and VAT had significant effects on the economic growth in Nigeria. It is in the interest of the researcher to examine the effect of taxes on consumption of household in Nigeria.

Adesola (2018) examined government taxes’ effects on unemployment rate in Nigeria from 2002 to 2016. The outcome of regression techniques employed in the study showed that government taxes possessed a positive impact on unemployment. The reviewed study adopted weighted least square regression techniques while the current study adopted ARDL estimation technique. In a similar study, it was reported by Olaoye, Ogindipe & Oluwadare (2019) that CIT PPT, and
VAT had positive but insignificant effect of HDI for the period covered in Nigeria (2002-2017) when determined the correlation amidst tax revenue and economic development in Nigeria using VECM. But methodologically, the reviewed study used VECM while the current used ARDL analysis method for data analysis.

Micah, Chukwumah and Umobong (2016) reported that the CIT had significant but negative influence on Nigeria economic growth when taxes’ effect was examined on Nigeria economic growth from 2010 to 2014 through regression analysis. However, the study reviewed engaged data and limited its scope to 2014 from 2010 but the current study extended the data to 2021 from 2012. Similar, in another study carried out by Cornelius, Ogar and Oka (2016) which concentrated on tax revenue’s impact on Nigeria economy by employing regression analysis method. The result from the analysis indicated that CIT has no significant effect on Nigeria economic growth. The reviewed study focused on the growth of Nigerian economy while this study concentrated on household consumption in Nigeria. Also, Patrick and Joseph (2018) examined Tax Revenue contribution on Nigeria economic growth ranging from 1997 to 2016 by employing OLS which displayed a significant contribution of CIT and VAT on Nigeria economic growth after data realized from CBN were thoroughly analyzed. Hence, the reviewed study made use of time series data from 1997 to 2016 which went against this study.

Luper, Terungwa & Victoria (2019) in their study analyzed tax revenue effect on Nigeria economic growth using descriptive statistics and regression analysis. It was deduced from their study that insignificant contribution was dispensed on economic growth by tax revenue which invariably signified insignificant effect of taxation revenue on the growth of economy in Nigeria after the data gathered from CBN were thoroughly analyzed. This study however was on taxation revenue and economic growth in Nigeria but absolutely differed from the scope of the current study. In Egypt, Abo-Ahmed (2021) investigated the influence of CIT on human capital development (HDI) from 2000-2019. Outcome of the result regression analysis revealed a positive significant effect of CIT on HDI. The study was materialized and implemented in Egypt, but it was not done for policy implementation in Nigeria.

Kolahi and Noor (2016) adopted GMM analysis method to examine the influence of VAT on economic growth of 19 nations covering a period of 16 years (1995-2010). The study revealed that VAT dispensed negative effect on productivity and growth of capital accumulation but displayed positive effect on economic growth. The reviewed study adopted GMM analysis method while this current study adopted ordinary least square analysis method. Madugba and Joseph (2016) focused on VAT and economic development in Nigeria between the periods of 2001-2015. The study used multiple regression analysis method, and the result unveiled a negative but significant relationship between VAT and GDP as a proxy of economic development. The reviewed study examined the connectivity between VAT and Nigeria economic development while this, current study, investigated the effect of taxes on household consumptions in Nigeria. Ibanichuka, Ikebujo and Akani (2016) concluded after examined taxes effects on HDI in Nigeria that positive influences were put forward by VAT, CIT and CED on HDI which were also significant during the period of 1995 and 2014 in Nigeria. Thus, the study absolutely employed OLS regression examined the contribution of tax revenue on economic growth in Nigeria. But the results of the reviewed study might not be tenable in the current economy situation of Nigeria. This is because of the current reforms in Nigerian taxation system.
Ogwuru & Agbaraevoh (2017) showcased their study on the impact of VAT, CIT and CED on the development as well as growth of Nigeria which involved methodology of OLS regression. Positive significance of all the incorporated taxes were showcased on GDP from the analysis of the data garnered from CBN and other relevant bulletins in Nigeria. The reviewed study examined the effect of all incorporate taxes on GDP in Nigeria as against the current study of taxes and household consumption expenditure. In the same vein,Nwokoye and Rolle (2017) examined tax reforms’ influence on Nigeria investment using OLS analysis to scrutinize the data extracted from CBN bulletin. The study exposed that tax reform positively significantly, and strongly inspired Nigeria investment. Nevertheless, the reviewed study examined tax reforms and Nigeria investment, but this study ultimately examined taxes effect on consumption of household in Nigeria.

Uzoka and Chiedu (2018) used linear regression to analyze the data garnered through CBN from 2001 to 2017 to investigate the contribution of tax income on Nigeria economic growth. The study displayed that both PPT and CIT had positive significant, strong and statistical influence on GDP in Nigeria while VAT had a negative, insignificant, and downplayed effect on Nigeria economic growth. The study area of the scope methodologically, and conceptually differed to this study. Asogwa and Nkolika (2018) focused on VAT and investment growth in Nigeria from 2010-2015 using OLS regression estimate. It was concluded that a significant relationship exists between VAT and investment in Nigeria. The reviewed study was delimited to VAT while the current study focused on PPT, CIT, VAT and CED.

Muresan, David, Elek, and Dumiter (2019) examined VAT and its impacts on the economic activity in Romania. The regression results show that an increase in VAT engender a rise in economic activity of Romania significantly. The reviewed study was carried out in Rome while the current study was carried out in Nigeria. In Kenya, Owino (2019) determined VAT impact on Kenya economic growth ranging from 1973 to 2010 with the involvement of OLS technique. The results discovered that positive effect was showcased by Kenya VAT on economic growth with insignificant relationship. Geographically, the study was conducted in Kenya but not in Nigeria in which this study is domiciled. Cordella (2020) sampled VAT and CED as indirect tax and their impact on consumption in Nigeria for 15 years (2005 to 2019) using different economic estimation method such as trend analysis, Granger causality tests, cointegration test and ordinary least squares estimation. It was discovered that VAT influence consumption positively though at an insignificant level while CED contributed contrarily. The reviewed study used time series data spanning from 2005 to 2019 but this study employed a time series data spanning from 2012 to 2021.

**Gaps of the Literature**

However, it has been observed that extant studies that incorporated taxes such as petroleum profit tax, company income tax, value added tax and CED tax to capture taxes’ effect on households’ consumption are relatively scarce. Most of these studies related taxes to different outcome variables and confined their studies to taxation effect on economic growth, investment, inflation, and government expenditure. Also, none of these studies examined how taxes influence household consumption in Nigeria. Hence, this study analyzes the effect of taxes on household consumption in Nigeria with respect to petroleum profit tax, company income tax, value added tax and CED as proxies for taxes, and household final consumption expenditure as the proxies for consumption of household in Nigeria. Also, the uniqueness of the full analysis of the econometric model incorporated in this
study for capturing the effect of taxes on household which has not common among the extant literature contributes to the existing literature consumption globally.

III. Methodology

The established data are sourced through CBN statistical bulletin for a period of 31 years, spanning from 1990-2021 in order to examine the effect of taxation on household consumption expenditure in Nigeria. This study adapted the model employed by Osho, et al (2019) where tax revenue’s influence was examined on Nigeria government capital expenditure. The model was given as:

Capital Expenditure = \( f(CIT, PPT, VAT) \) (1)

But the model is modified to.

i. Customs and Excise Duties (CED) is added to the form of taxes.

ii. Capital Expenditure is replaced with household consumption expenditure (HFCE)

iii. Also, the models are controlled with inflation (INF) and exchange rate (EXC).

To achieve the motive behind this study, I made use of ARDL Model, unit root test, Cointegration Test, correlation analysis, lag selection test, and regression. The ARDL Model was considered appropriate since it incorporated variables possessed different levels of stationary in Unit root test as shown in Table 4. I also involved Normality test and stability test as post analysis for confirmation of non-existence of spurious results in the analysis.

The new models are specified thus:

HFCE = \( f(CIT, PPT, VAT, CED, INF, EXC) \) (2)

This model is therefore replaced with econometric model stated below:

\[
HFCE = \beta_0 + \beta_1 CIT + \beta_2 PPT + \\
\beta_3 VAT + \beta_4 EDT + \beta_5 INF + \\
\beta_6 EXC + \mu t \] (3)

ARDL model are as follows:

\[
\Delta HFCE_t = \alpha + \sum_{k=1}^{k-1} \beta_k \Delta HFCE_{t-k} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta PPT_{t-n} + \\
\sum_{i=1}^{i-1} \phi_i \Delta VAT_{t-i} + \sum_{s=1}^{s-1} \phi_s \Delta CED_{t-s} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{2t} \] (4)

\[
\Delta CIT_t = \alpha + \sum_{k=1}^{k-1} \beta_k \Delta HFCE_{t-k} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta PPT_{t-n} + \\
\sum_{i=1}^{i-1} \phi_i \Delta VAT_{t-i} + \sum_{s=1}^{s-1} \phi_s \Delta CED_{t-s} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{3t} \] (5)

\[
\Delta PPT_t = \alpha + \sum_{k=1}^{k-1} \beta_k \Delta HFCE_{t-k} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta PPT_{t-n} + \\
\sum_{i=1}^{i-1} \phi_i \Delta VAT_{t-i} + \sum_{s=1}^{s-1} \phi_s \Delta CED_{t-s} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{4t} \] (6)

\[
\Delta VAT_t = \alpha + \\
\sum_{i=1}^{i-1} \phi_i \Delta HFCE_{t-i} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta CED_{t-n} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{5t} \] (7)

\[
\Delta CED_t = \alpha + \sum_{k=1}^{k-1} \beta_k \Delta HFCE_{t-k} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta PPT_{t-n} + \\
\sum_{i=1}^{i-1} \phi_i \Delta VAT_{t-i} + \sum_{s=1}^{s-1} \phi_s \Delta CED_{t-s} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{6t} \] (8)

\[
\Delta INF_t = \alpha + \sum_{k=1}^{k-1} \beta_k \Delta HFCE_{t-k} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta PPT_{t-n} + \\
\sum_{i=1}^{i-1} \phi_i \Delta VAT_{t-i} + \sum_{s=1}^{s-1} \phi_s \Delta CED_{t-s} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{7t} \] (9)

\[
\Delta EXC_t = \alpha + \sum_{k=1}^{k-1} \beta_k \Delta HFCE_{t-k} + \\
\sum_{m=1}^{m-1} \phi_m \Delta CIT_{t-m} + \sum_{n=1}^{n-1} \phi_n \Delta PPT_{t-n} + \\
\sum_{i=1}^{i-1} \phi_i \Delta VAT_{t-i} + \sum_{s=1}^{s-1} \phi_s \Delta CED_{t-s} + \\
\sum_{k=1}^{k-1} \phi_k \Delta INF_{t-k} + \sum_{s=1}^{s-1} \phi_s \Delta EXC_{t-s} + \mu_{8t} \] (10)

Where HFCE proxied as household consumption expenditure. \( \alpha \) are intercepts, \( \beta_k \), \( \phi_m \), \( \phi_n \), and \( \phi_s \) are the coefficients of HFCE, VAT, CIT, PPT and CED respectively. \( \mu_{1-8t} \) are stochastic (error terms).

Where:

HFCE - Household final consumption expenditure,

CIT - Company Income Tax

PPT - Petroleum Profit Tax

VAT - Value Added Tax

CED - Customs and Excise Duties
IV. Findings and Discussion

Effects of Taxes on Household Consumption in Nigeria

Table 1: Descriptive Analysis

<table>
<thead>
<tr>
<th></th>
<th>HFCE</th>
<th>PPT</th>
<th>VAT</th>
<th>CED</th>
<th>CIT</th>
<th>INF</th>
<th>EXC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>86003.31</td>
<td>2039.718</td>
<td>514.5140</td>
<td>202.1974</td>
<td>1234.347</td>
<td>12.36548</td>
<td>255.3778</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>26499.39</td>
<td>665.4942</td>
<td>193.3384</td>
<td>44.15970</td>
<td>289.4950</td>
<td>3.266087</td>
<td>82.53368</td>
</tr>
<tr>
<td>Minimum</td>
<td>42115.91</td>
<td>1157.808</td>
<td>347.6900</td>
<td>130.1227</td>
<td>820.5655</td>
<td>8.062486</td>
<td>157.3117</td>
</tr>
<tr>
<td>Maximum</td>
<td>126437.3</td>
<td>3201.320</td>
<td>969.4100</td>
<td>279.3587</td>
<td>1747.990</td>
<td>16.95285</td>
<td>358.8108</td>
</tr>
</tbody>
</table>

Source: Author’s Computation (2023)

The result in Table 1 shows that HFCE has a mean value of 86003.3, minimum and maximum value of 42115.91 and 126437.3 respectively between 2012 and 2021. The mean value of PPT is ₦2039.718billion with a minimum value of ₦1157.808billion and a maximum value of ₦3201.320billion for the period 2012-2021. VAT stood at an average of ₦514.5140billion during the period under review and fall between ₦347.6900 billion and ₦969.4100 billion. CED has a mean value of ₦202.1974billion with a minimum and maximum value of ₦130.1227 and ₦279.3587billion respectively. CIT stood at an average of ₦1234.347billion during the period under review and fall between ₦820.5655 billion and ₦1747.990 billion. INF has an average value of ₦12.36548billion with a minimum and maximum value of ₦8.062486 and ₦16.9528 billion respectively. For EXC, an average value of ₦255.3778 with a minimum and maximum value of ₦157.3117 and ₦358.8108 respectively.

Trend Analysis of Household Final Consumption Expenditure

As shown in Fig.1 is the trend analysis of household consumption expenditure in Nigeria for 10 years spanning 2012 to 2021. According to the graphs, there have been a steady increase in the household consumption level in Nigeria between 2012

Fig. 2: Household Final Consumption Expenditure (HFCE) in Nigeria.

Source: Author’s Compilation (2023)
and 2021. This might be attributed to the steady flow of income in different households and even the inflation level of the value of goods and services in the country during the period covered.

Table 2: Correlation Analysis Matrix

<table>
<thead>
<tr>
<th></th>
<th>HFCE</th>
<th>PPT</th>
<th>VAT</th>
<th>CIT</th>
<th>EDT</th>
<th>INF</th>
<th>EXC</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFCE</td>
<td>1</td>
<td>0.491</td>
<td>0.267</td>
<td>0.017</td>
<td>0.340</td>
<td>0.572</td>
<td>0.555</td>
</tr>
<tr>
<td>PPT</td>
<td></td>
<td>1</td>
<td>0.171</td>
<td>0.320</td>
<td>0.225</td>
<td>0.396</td>
<td>0.454</td>
</tr>
<tr>
<td>VAT</td>
<td></td>
<td></td>
<td>1</td>
<td>0.129</td>
<td>0.098</td>
<td>0.552</td>
<td>0.409</td>
</tr>
<tr>
<td>CIT</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0.202</td>
<td>0.553</td>
<td>0.055</td>
</tr>
<tr>
<td>EDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0.257</td>
<td>0.303</td>
</tr>
<tr>
<td>INF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0.309</td>
</tr>
<tr>
<td>EXC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Author’s Computation, (2023)

As represented in Table 2, a positive relation exists between HFCE, PPT, VAT, CIT, CED, INF and EXC indicating that all variables share a common characteristic relationship which showed that all variables possessed positive relationship with one another. A similar relationship exists between other variables of the study for the period covered indicating that an increase in one would engender a rise in the other.

Table 3: Variance Inflation Factor

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFCE</td>
<td>2.48</td>
<td>0.40</td>
</tr>
<tr>
<td>PPT</td>
<td>3.67</td>
<td>0.27</td>
</tr>
<tr>
<td>VAT</td>
<td>5.23</td>
<td>0.19</td>
</tr>
<tr>
<td>CIT</td>
<td>4.35</td>
<td>0.23</td>
</tr>
<tr>
<td>CED</td>
<td>3.45</td>
<td>0.29</td>
</tr>
<tr>
<td>INF</td>
<td>3.12</td>
<td>0.32</td>
</tr>
<tr>
<td>EXC</td>
<td>2.41</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Mean VIF 2.32

Source: Researcher’s Compilation, (2023)

From the VIF Table 3 results, the values of all the variables incorporated in this study are less than 10 which advocated that multicollinearity is absent from this study.

Table 4: Unit Root Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level Test statistic</th>
<th>p-value</th>
<th>First difference Test statistic</th>
<th>p-value</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HFCE</td>
<td>-2.375364</td>
<td>0.0237**</td>
<td></td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>PPT</td>
<td>-0.653133</td>
<td>0.3490</td>
<td>-5.474812</td>
<td>0.0150**</td>
<td>I(1)</td>
</tr>
<tr>
<td>VAT</td>
<td>-0.512164</td>
<td>0.4421</td>
<td>-6.154156</td>
<td>0.0120**</td>
<td>I(1)</td>
</tr>
<tr>
<td>CIT</td>
<td>-2.046177</td>
<td>0.5407</td>
<td>-8.412165</td>
<td>0.0000*</td>
<td>I(1)</td>
</tr>
<tr>
<td>CED</td>
<td>-1.790333</td>
<td>0.6667</td>
<td>-4.799177</td>
<td>0.0109**</td>
<td>I(1)</td>
</tr>
<tr>
<td>INF</td>
<td>-2.996225</td>
<td>0.1584</td>
<td>-4.175815</td>
<td>0.0208**</td>
<td>I(1)</td>
</tr>
<tr>
<td>EXC</td>
<td>-2.173525</td>
<td>0.2843</td>
<td>-3.183646</td>
<td>0.0183**</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Researcher’s Compilation, (2023)

It was only HFCE that is stable at level, according to Table 4, although PPT, VAT, CIT, CED, INF, and EXC are stationary at first difference. The test results demonstrate
that the stationary of variables are the mixture of I (0) and I(1) series. This advocates that a bounds test should be done as suggested by Pesaran, Shin, and Smith (2001) as the only way to conduct the test for long-run relationships (cointegration).

**Cointegration Test**

Table 5: Bounds Test Result

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>Significance level</th>
<th>Critical value bounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower bound</td>
</tr>
<tr>
<td>4.413136</td>
<td>1%</td>
<td>3.41</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>2.26</td>
</tr>
</tbody>
</table>

Source: Researcher’s Compilation, (2023)

Table 5 demonstrates that the null hypothesis may be rejected since the F-statistic is more than both the critical values (upper and lower bound) at 0.05 sig. level. This suggests that all the incorporated variables possessed long-run relationships which invariably called for cointegration.

**Long-run Results**

Table 6: Long-run results of Taxes on Household consumption in Nigeria

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.481231</td>
<td>0.0021*</td>
</tr>
<tr>
<td>PPT</td>
<td>0.001501</td>
<td>0.0212**</td>
</tr>
<tr>
<td>VAT</td>
<td>-0.000900</td>
<td>0.0236**</td>
</tr>
<tr>
<td>CIT</td>
<td>-0.001200</td>
<td>0.0342</td>
</tr>
<tr>
<td>CED</td>
<td>-0.034778</td>
<td>0.03364**</td>
</tr>
<tr>
<td>INF</td>
<td>-0.098376</td>
<td>0.0264**</td>
</tr>
<tr>
<td>EXC</td>
<td>-0.02843</td>
<td>0.0437</td>
</tr>
</tbody>
</table>

Source: Researcher’s Compilation (2023)

The long-term effects, as shown in Table 6 above, is that VAT, CED and INF have low but significant negative impact on household consumption in Nigeria, (β = -0.000900; -0.084778; -0.098376, p = 0.0236; 0.03364** and 0.02640.05 respectively. This suggests that a 1% increase in INF, CED and VAT causes 0.0009%, 0.084778% and 0.09838% fall in HFCE respectively. The effects of CIT and EXC on household consumption in Nigeria are negative but significant (β = -0.001200; -0.02843, p = 0.0342; and 0.0437 < 0.05) respectively. Furthermore, the effect of PPT on household spending in Nigeria is positive with coefficient values of 0.001501 which shows that only PPT’s positive effect is significant (0.0212 < 0.05). This suggests an increase in PPT would engender a rise in household consumption in Nigeria by approximately 0.0015% at 0.05 sig. level.
Short Run Results

Table 7: Short run Effect of Taxes on Household Consumption in Nigeria

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.001731</td>
<td>0.0180</td>
</tr>
<tr>
<td>D(PPT)</td>
<td>-0.200926</td>
<td>0.4987</td>
</tr>
<tr>
<td>D(VAT)</td>
<td>-0.021620</td>
<td>0.0019</td>
</tr>
<tr>
<td>D(CIT)</td>
<td>-1.13E-06</td>
<td>0.7699</td>
</tr>
<tr>
<td>D(CED)</td>
<td>-5.73E-06</td>
<td>0.0027</td>
</tr>
<tr>
<td>D(INF)</td>
<td>-4.25E-06</td>
<td>0.0073*</td>
</tr>
<tr>
<td>D(EXC)</td>
<td>-1.43E-07</td>
<td>0.9465</td>
</tr>
<tr>
<td>CointEq(-1)</td>
<td>-0.60E-05</td>
<td>0.0171*</td>
</tr>
</tbody>
</table>

Source: Researcher’s Compilation (2023)

According to ARDL model as shown in Table 7, D(PPT), D(VAT), D(CIT) and D(EXC) have a contemporaneous negative effect on HFCE. The negative effect is significant for D(VAT), D(CED), and D(INF) as against the insignificant negative effect of D(PPT), D(CIT) and D(EXC) on HFCE. The dynamic model's lag error correction term CointEq(-1), which evaluates how quickly equilibrium is restored over the long time, has the predicted negative effect but statistically significant at 1% level.

Residual Diagnostic Tests

Table 8: Breusch-Godfrey serial correlation LM test

<table>
<thead>
<tr>
<th>Lag</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.288728</td>
<td>0.7609</td>
</tr>
<tr>
<td>2</td>
<td>1.760075</td>
<td>0.4148</td>
</tr>
</tbody>
</table>

Source: Researcher’s Compilation, (2023)

The result as displayed in Table 8 shows that there is no inclusion of first or second order serial correlation in the model.

Table 9: Breusch-Godfrey Pagan Heteroskedasticity Test

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>0.423044</td>
</tr>
<tr>
<td>Obs^* R-squared</td>
<td>5.989026</td>
</tr>
</tbody>
</table>

Source: Researcher’s Compilation (2023)

According to Table 9 results as displayed above, it is impossible to rule out the possibility that the residuals are not heteroskedacity, indicating that the model is not biased as a result of heteroskedasticity.
Table 10: Jarque-Bera Normality Test

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.28818</td>
<td>0.318539</td>
</tr>
</tbody>
</table>

Source: Researcher’s Analysis (2023)

Table 10 demonstrates that the residuals’ normal distribution hypothesis cannot be invalidated, it proves that the residuals follow a normal distribution in the model because p-value above 0.05 sig. level.

Table 11: Validation of Hypotheses

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Coefficient</th>
<th>P-Values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPT HFCE</td>
<td>0.001501</td>
<td>0.0212**</td>
<td>Accept H₀</td>
</tr>
<tr>
<td>VAT HFCE</td>
<td>-0.000900</td>
<td>0.0236**</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>CIT HFCE</td>
<td>-0.001200</td>
<td>0.0342**</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>CED HFCE</td>
<td>-0.034778</td>
<td>0.03364**</td>
<td>Reject H₀</td>
</tr>
</tbody>
</table>

Source: Author’s Compilation, (2023)

Table 11 displayed that the hypothesis that displays PPT does not significantly affect Household consumption negatively in Nigeria should not be rejected because P-Value (0.0212**) below 0.05. Contrarily it was discovered that VAT has negative significant effect on HFCE which invariably rejected the hypothesis that VAT does not significantly affect Household consumption (P-Value 0.0236**) in Nigeria. In the same vein, CIT and CED have also successfully proved the hypothesis wrongly by accepting that CIT and CED significantly affected the Household consumption negatively with P-Value 0.0342**; and 0.03364** respectively in the country during the periods covered.

Discussion of Findings

The study investigated taxes’ effects on household consumption in Nigeria. Taxes captured in the study are PPT, VAT, CIT and CED while the outcome variable captured was household consumption expenditure. To test the formulated hypotheses, trend analysis and auto-regressive distribution lag were used. Through the analysis, it was discovered that trended upward slowly in corresponding with tax revenue. This might be attributed to the government regulation for economic diversification and non-oil revenue enhancement. In line with the long run estimate result, PPT has significant, strong, and positive influence on household consumption in Nigeria with coefficient and significant values of 0.001501 and 0.0212 respectively. This signifies that a 1% increase in petroleum profit tax engenders a 0.021% increment in household consumption expenditure. Contrarily, it was discovered that there is a negative but significant effect of VAT on household consumption in Nigeria in terms of household final consumption expenditure to the tune of -0.0000900(p=0.0236<0.05), this indicates that a 1% increase in value-added tax, household consumption reduces by 0.00009. The implication is that the burdens of Value-added tax which is an indirect form of taxes is shouldered by the final consumers of taxable goods and services in Nigeria. Outright, there is an even increase in the VAT
rate paid by consumers in Nigeria when compared to the income of the individual and household who bear the taxes consumable and taxable goods and services. The finding negates the conclusion of Salami, Apelogun, Omidiya and Ojoye (2015; Obiakor, Kwarbai and Okwu (2015; Simionescu and Albu (2016); Ogundana et al., (2017), and Osho, et al (2019) but acknowledged the discoveries of Madugba & Joseph (2016), Adegbite (2016), Zehiwot, & Senapathy, (2019), and Amah, (2021).

Another discovery is that company income tax was found to exert a negative insignificant influence on household consumption in Nigeria ($\beta = 0.001200; p=0.0732 > 0.05$). This reflects that household consumption expenditure decreases by 0.0012% whenever there is a percentage increment in CIT. Indirectly, consumers of goods and services of certain taxable products shoulder the burden of company income tax. This implies that an increase in company income tax rate causes an increment in the prices of commodities. To meet individuals’ needs, there would be a decrease in consumption level as there is no corresponding increase in the income level of households and prices of the commodity. This outcome nosedived to uphold the discoveries of Salami, et al (2015), Kolahi & Noor (2016), Inyiama & Ubesie (2016), Ogwuru & Agbaraechi (2017), Nwokoye & Rolle (2017), and Osho, et al (2019) but advocated the summisions of Uzoka and Chiedu (2018), Owino (2019), Alade, Olaoye, & Ojo (2019) and Emmanuel and Onyedikachi (2020) that CIT has a negative and insignificant effect on consumption.

The last discovery is that CED also has negative and significant effect on household consumption in Nigeria ($0.034778; p=0.03364 < 0.05$). This stipulates that with just a 1% increase in CED, household consumption decreases by 0.035 significantly. This finding implies that CED has led to decrement in household consumption in Nigeria. This outcome supported the discoveries of Ekwueme & Chikezi, (2016), Kwaji, & Dabari (2017), Adedokun, (2018) and but invariably negated the outcome of Ajibola & Olowolaju (2017), Abomaye-Nniambo et al (2018), Abo-Ahmed, (2021), and Egbebuheat, & Tomquin, (2021).

V. Conclusion

This study investigated taxes’ effect on household consumption expenditure. The established data are sourced through CBN statistical bulletin and annual reports of federal Inland Revenue for a period of 31 years, spanning from 1990-2021 in order to examine the effect of taxation on household consumption expenditure in Nigeria. To achieve the motive behind this study, ARDL Model, unit root test, Cointegration Test, correlation analysis, lag selection test, and regression as well as normality test and stability test were also involved as pre and post analysis confirmatory tests. It was discovered that PPT has significant, strong, and positive influence on household consumption but CIT, VAT and CED have negative significant influence on household consumption. This explained the fact that VAT and CED are the consumption taxes which taxed away the purchases power of the households tremendously. The higher the consumption taxes the lesser is the disposable income which invariably downplays the purchases powers of the household consumptions, and desires to procure more. The burden of the CIT also bears by the household because every tax charged on the company will invariably affect the outputs’ price which are consumable to households in Nigeria. Conclusively, taxes have negative effect on household consumption expenditure in Nigeria. It is recommended that government should adhere to the implementation of the commensurable wages packages, and prompt payment of wages and salaries and other forms of compensation incentive or bail out so that the negative effect of taxes will be cushioned on households which will
invariably enhance the disposable income and purchase power of all household to meet up with their desires.

References


