



## TAXATION, EXCHANGE RATES AND INFLATION: ANY MARRIAGE IN NIGERIA

OKOLO, MARVIS NDU, *PHD, ACA*

*Department of Accounting*

*Delta State University, Abraka-Nigeria*

*E-mail: marvisokolo@yahoo.com*

*mnokolo@delsu.edu.ng*

*ORCID: <https://orcid.org/0000-0002-4035-1070>*

### Abstract

*This research explored Taxation, Exchange Rates and the level of Inflation in the Nigerian Economy. Taxation (proxied with Petroleum Profit Tax, PPT), Exchange rates and Inflation rates were the Independent Variables while Gross Domestic Product (GDP) signifies the Nigerian Economy as a dependent variable. Due to the data set, the time horizon is from 2007 to 2022. Secondary data were obtained from the National Bureau of Statistics, Nigeria's Federal Inland Revenue tax Pro-max and Central Bank of Nigeria Statistical Bulletin. The theoretical anchorage was on Socio-political Theory. The Statistical tests employed were the descriptive statistics, normality test, correlation analysis, and variance inflation factor, with the help of Econometric Views in order to ascertain the suitability of the data. While testing the hypothesis the Pooled Ordinary Least squares was employed. Inferences from the findings the revealed that taxation (Petroleum profit tax, PPT) and Exchange rate (EXR) has a meaningful interference on Nigerian economy (GDP), the inflation rate has an insignificant influence on Nigeria economy (GDP). Emanating from the finding, it was recommended that in the imposition and collection of taxes (PPT), the relevant authorities (Government) should adopt decisive mechanism to impede the leakages so that the revenue generated would not be drain off to devious purse to maintain the marriage between taxes and economic growth. Again, monetary policies should be redirect micro economic indices enhance the standard of living of the citizenry.*

*Keywords: Petroleum Profit Tax, Exchange Rate, Inflation Rate, Nigeria Economy*

### Introduction

The intricate tapestry of any nation's development is woven from threads of social, political, and economic progress. This intricate engagement requires a well defined structure, and a robust tax system that would serve as a foundation upon which others should rest. Taxes, which are officially imposed by the government extract resources from individuals, businesses, and transactions, funneling them back into the system to stimulate public services and growth of the economy (Khosravi & Karimi, 2010; Iheanachor & Ozegbe 2021). The essence of the revenue generation is for social welfare promotion, and economic stimulation.

In the Nigerian context, taxation holds immense significance and constitutes the bulk of government income, enabling critical investments in infrastructure, debt reduction, and employment opportunities (Obaretin & Akhor, 2019). However, the delicate balance between tax collections and economic growth

demands careful consideration. Azubike (2009) aptly states that tax is a major player in every society of the world with immense wealth, finds itself firmly within this fiscal spotlight.

On discovery of Petroleum in 1956 in Nigeria, it was referred to as "black gold," against the exchange rate which was referred as "foreign gold" and it has over time emerged as a game-changer for Nigeria. The discovery marked a turning point which has eclipsed agriculture, the nation's previous economic mainstay. Taxation on the upstream sector of the petroleum industry plays a fundamental role in these dynamics as governed by the Petroleum Profit Tax Act (Cap P13, LFN 2004) as amended, targets the profits generated from exploration, drilling, extraction, and transportation of crude oil in Nigeria (Padonu, Obi & Eleshio, 2023).

Petroleum profit tax accounts for a whopping 95% of Nigeria's foreign earnings and 80% of its budgetary

revenue, whilst acting as lifeblood of the Nation's economic engine. Consequently, higher PPT

remittances translate to increased government spending fueling growths, debt reduction, and job creation ultimately impacting the standard of living for the citizenry (Osasu & Henry, 2019). However, falling oil prices and a sharp rise in interest rates particularly during 1973-74 and 1979 triggered economic crises in Nigeria because of the country's dependence on oil sales for her export earnings: the net effect was a negative real rate of economic growth which was compounded by the adoption of structural adjustment programme (SAP) from 1986.

Additionally, the dwindling in oil market caused shortage in foreign exchange earnings. According to Iheanachor and Ozegebe (2021), exchange rate fluctuation is the continuous whirl in the foreign exchange market and its adverse impact of the global economic and financial crisis on the Nigerian exchange rate was a phenomenon as the Naira exchange rate to the dollar rose dramatically from about ₦120/\$ to more than ₦180/\$ between 2008 and 2009, and has continuously been on the rise as linked to the sharp drop in foreign earnings and national revenue of Nigeria due to the continuous fall of crude oil price in the world market.

The net effect of oil price and its associated tax (PPT), exchange rates and inflation rates have impact on economic growth. Economic growth, defined as the inflation-adjusted increase in the market value of goods and services produced within a year, thrives in environments free from political, social, and financial upheavals. The devaluation and some other unfriendly policies had given rise to inflation. In Nigeria for instance, they seem to be a downturn in the economy which are occasioned by exchange rates, inflationary rates, tax evasion and many other unwanted events. As enumerated in, Owolabi and Adegbite (2017), that the combined roles of exchange rates and inflationary pressures in determining the relative prices of domestic and foreign goods have influenced the Nation's participation in international trade and thereby created complex web of challenges for the Nigerian economy.

Okolo, Ideh and Emengini (2021) opined that tax evasion and avoidance further complicate the events, casting a shadow over the effectiveness of the PPT operations. Therefore, there is need to examine the marriage between taxation, exchange rate, inflation rates and Economic growth in Nigeria.

#### Literature Review

##### Petroleum Profit Tax

The narrative of taxation often gets entangled with the notion of penalty, but it's crucial to remember its distinct role. Unlike a punishment for wrongdoing, taxes are fees imposed by the government for the collective good. Taxes as a compulsory levy on revenues, benefits or properties, are targeted at funding public services and infrastructure. In the same vein, Okoye and Ezejiofor (2014) ascribed the Nigerian tax system as heavily influenced by the pre-independence British mode of 1984, which is purportedly an income generation mechanism. Within the local laws, diverse arrays of taxes exist, each serving specific purposes. Adegbite, (2019) observed that PPT is generated from exploring, drilling, extracting, and transporting crude oil.

PPT provides for the imposition of tax on the chargeable profits of companies involved in the upstream activities while the industries in the downstream pays company income tax. However, on the 16<sup>th</sup> of August, 2021, the Petroleum Industry Act (PIA) was enacted into law to repeal the extant Petroleum Act 2004. This PIA provides the fiscal framework for regulating the Nigerian Petroleum Industry. In Nigeria, the Federal Inland Revenue Service is responsible for the assessment and collection of petroleum tax. The revenue from this tax constitutes a major source of income to government and there is a need for its imposition to be put in check so its brunt does not outshine its benefits. Pinar (2012) warns that the asymmetries in the tax system could possibly discourage entrepreneurship and risk-taking, potentially stifling innovation and economic dynamism.

Furthermore, Sinebe and Emudainohwo (2023) remarked that high company taxation is a major concern to firms as it results in effective tax rate exceeding the statutory income tax rate. It causes a high-cost structure for the firms, whose consequence is corporate bodies continually implement methods to postpone, reduce or evade tax payments.

#### Exchange Rate, Inflation and Economic Growth

Mordi (2006) referred to exchange rate as the price of one currency in terms of another. It is the basis of international settlement between Nations. According to Babatunde, and Akinwade (2010) the volatility in exchange rates of developing nations is one of the main sources of economic instability around the globe. The impact of the global economies in developing countries such as Nigeria is driven considerably by the swing in the currencies of the major economic powers of the world like the United States of America Dollar. These imbalances often trigger major economic distortions, protectionist trade pressures and inevitably sharp currency reversals. Inflation is the general rise in the prices of goods and services over a given period. The common measure of inflation is inflation rate (INR). Nigeria's annual inflation rate stood at about 25.8% in August 2023, from 24.08% in July and marking the highest rate since September 2005. Multiple exchange rates, high rate of inflation and ineffective government expenses contributes to increase in the cost of production, reduce incentives for investments that would increase productivity.

#### Theoretical Framework

The theories are socio-political theory and benefit-received theory as used herein. The socio-political theory prioritizes social and political objectives when designing and implementing tax systems. It argues that taxes should not solely serve economic ends but act as instruments for societal betterment. Superlatively, a tax system that demonstrably addresses societal issues fosters greater compliance and minimizes evasion and avoidance. By aligning taxation with social and political goals, achieve a fairer and more just society

(Isola, Oluwafunke, Victor & Asaleye, 2016). On the other hand, the benefit-received theory views taxation as a form of exchange between citizens and the state. Under this framework, citizens contribute to the cost of public goods and services they receive, proportional to the benefits they gain. Implementing this theory emphasizes transparency in the tax system, encouraging economic growths by ensuring citizens perceive a direct link between their contributions and the value they receive (Jameela, 2010; Iheanachor & *et al.*, 2021). Analyzing taxation through these contrasting lenses, this research strives to gain a multifaceted understanding of its impacts and inform potential policy shifts that balance economic objectives with broader social and political aspirations.

#### Empirical Review

Etale and Bingilar (2016) scrutinized the connection between Nigeria's petroleum profit tax, personal income tax and economic growth for 14 years employing the ordinary least square method in data analysis. The result showed that there was a significant positive relationship of petroleum profit tax on economic growth. Ibadin and Oladipupo (2015) analyzed the impact of indirect taxes on Nigeria's economic growth from 1981 to 2014. The data collected were analyzed and tested for unit root using the Dickey Fuller co-integration method; they showed that Petroleum Profit Tax exercised a positive and substantial relationship with Gross Domestic Product.

Onaolapo, *et al.* (2013) employed multiple regression methods in examining the impact of petroleum profit tax on the Nigerian economy. The study found that petroleum income tax has a strong impact on inflation, exchange rates and gross domestic product. In the context, Eyisi, Oleke and Bassey (2015) explored the impact of taxation on macroeconomic performance in Nigeria spanning 2002 to 2011. The least square method of regression was adopted and the result revealed that government tax revenue has a positive

and significant impact on Nigeria's real gross domestic product, while government tax revenue has a negative impact on Nigeria's unemployment rate.

Olayiwola (2023) aimed at assessing the impact of exchange rate on Nigeria's economic growth by decomposing it into positive and negative components. Non-linear ARDL model was used and the asymmetric effects test was used to measure the effects of changes in the value of the naira. It found that in the short run, when the Naira depreciates against the US dollar, economic growth tends to decline, while when it appreciates, economic growth tends to increase, while in the long run, these effects work in the opposite direction. Okoh, Onyekwelu & Iyidiobi, (2016) offered contrasting conclusions regarding the impact of taxes and inflation on national income. This underscores the need for further investigation within the Nigerian context. Zermeñoa, Martínezb and Preciadoc (2018) carried out research see whether inflation assert influence on the conditional distribution of financial development. It reported a consistently negative and nonlinear effect of price increases on financial variables.

$$\text{Log}(GDP) = a_0 + a_1 \text{Log}(PPT) + a_2 \text{Log}EXR + a_3 \text{Log}INR + \mu$$

Where:

$a_0$	-	Intercept
$a_1$	-	Coefficient
LOG		Natural Logarithm

## Results Presentation

### Summary of Descriptive Statistics

Table I, shows the mean for the log of gross domestic product, petroleum profit tax, exchange rate and inflation rate are 7.632587, 3.362049, 249.1056 and 11.93062 while the standard deviation are 0.161654, 0.191892, 135.4563 and 3.144020 respectively. The

Ani and Udeh (2021) examined the effect of exchange rate on the economic growth of Nigeria. The data were sourced from the Central Bank of Nigeria Statistical Bulletin for a period of 10 years (2009 -2018). Ex-post facto research design was utilized. Ordinary Least Square technique was employed in the analysis of hypotheses. It was found that while exchange rate had significant effect on GDP and GNP, it was non-significant on unemployment. This implies that micro economic indices of GDP and GNP could be used to consciously adjust standard of living of the citizens

### Methodology

The time series data were collected from the National Bureau of Statistics, Federal Inland Revenue Service of Nigeria and the Central Bank Nigeria Statistical Bulletin for a period of sixteen (16) years spanning from 2007 to 2022. It considered some statistical tests that were importance such as the descriptive statistics, normality test, correlation analysis, and variance inflation factor. The study employs the E-view whilst adopting the longitudinal research design techniques for data estimation through econometric views. The model is specified as follows:

GDP	-	Gross Domestic Products
PPT		Petroleum Profit tax
EXR	-	Exchange rate
INR	-	Inflation Rate
$\mu$	-	Disturbance Term

*Apriori expectation is  $a_1$ - $a_3$  less than or greater than 0*

table also revealed that exchange rate is volatile with a value of 135.4563. The value of their kurtosis is below 3 which depicts it is playtokurtic in nature except for exchange rate that has a leptokurtic value of 3.000704. The Jarque- Bera probability of 0.619030, 0.486138, 0.223052 and 0.801576 shows a normal distribution since it is greater than 0.05.

Table 1

VARIABLE	LOGGDP	LOGPPT	LOGEXR	LOGINR
Mean	7.632587	3.364049	249.1056	11.93062
Median	7.661639	3.305764	175.8650	11.84500
Maximum	7.860060	3.640024	569.1200	16.50000
Minimum	7.315074	3.076386	118.5700	5.400000
Std. Dev.	0.161654	0.191892	135.4563	3.144020
Skewness	-0.523094	0.040739	1.060670	-0.292652
Kurtosis	2.413231	1.531275	3.031178	2.433480
Jarque-Bera	0.959203	1.442528	3.000704	0.442351
Jarque-Bera	0.619030	0.486138	0.223052	0.801576
Sum	122.1214	53.82479	3985.690	190.8900
Sum Sq. Dev.	0.391980	0.552339	275226.1	148.2729
Observations	16	16	16	16

Source: Author's Computations, 2023.

#### Correlations Analysis

A critical observation from table 2, reveals that there is a positive relationship between GDP proxy for economic growth and the studied variables. PPT has a weak positive correlation with economic growth. The

correlation between EXR and GDP is strongly positive (0.815876). Whereas the correlation between GDP and inflation rate (INR) is positive and moderate (0.548552.)

Table 2

VARIABLE	LOGGDP	LOGPPT	LOGEXR	LOGINR
LOGGDP	1.000000			
LOGPPT	0.115190	1.000000		
LOGEXR	0.815876	-0.217081	1.000000	
LOGINR	0.548552	-0.270346	0.614107	1.000000

Source: Author's Computations, 2023.

#### Multicollinearity Test

In table 3, the Centered Variance Inflation Factor (CVIF) indicates the absence of multicollinearity

problems among the variable under studied because the cut-off value of VIF is 10. Values of VIF that exceed 10 are often regarded as indicating multicollinearity.

Table 3

Variance Inflation Factors (VIF)			
Sample		2007 - 2022	
Included Observations		16	
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.195153	413.1196	NA
LOGPPT	0.014830	356.3593	1.083744
LOGEXR	4.43E-08	7.430621	1.612749
LOGINR	8.45E-05	27.12321	1.657922

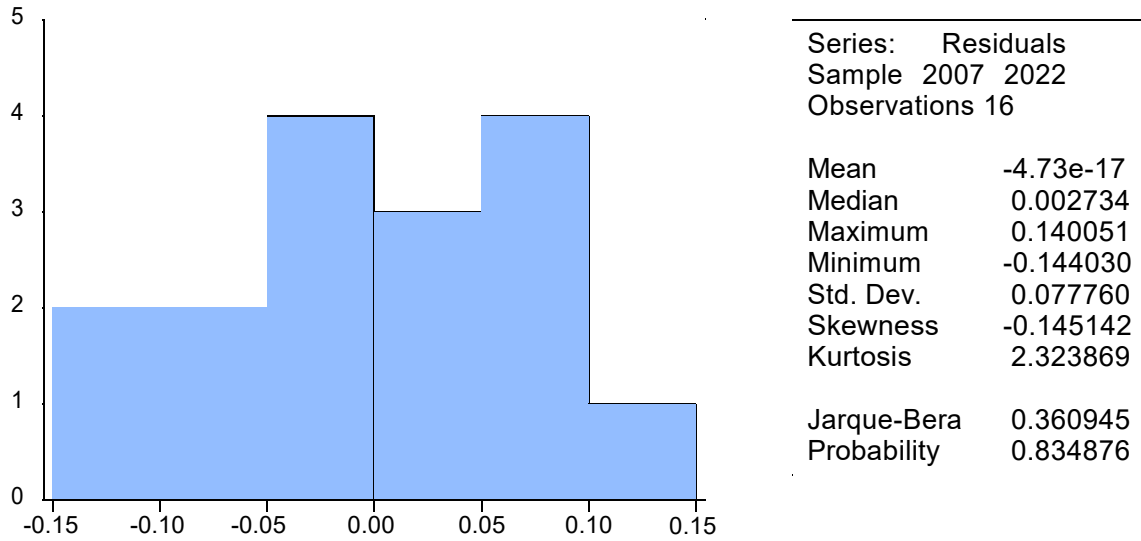
Source: Author's Computations, 2023.

Data Normality Test

Figure 1, affirms that the result earlier display in the descriptive statistics (table 1) of the data set is normally

distributed and suitable for analysis. That is because the Jarque-Bera probability is 0.834876 which is greater than 5% (0.05).

Figure 1



5.5. Regression results

Table 4

Dependent Variable: LOGGDP				
Variable	Coefficie	Std. Error	t-Statisti	Prob.
C	6.3750	0.44176	14.431	0.00
LOGPPT	0.2764	0.12177	2.2697	0.04
LOGEXR	0.0009	0.00021	4.5134	0.00
LOGINR	0.0076	0.00919	0.8303	0.42
R-squared	0.7686	Mean dependent var		7.6325
Adjusted R-squared	0.7107	S.D. dependent var		0.1616
S.E. of regression	0.0869	Akaike info criterion		-1.8349
Sum squared resid	0.0906	Schwarz criterion		-1.6417
Log likelihood	18.679	Hannan-Quinn criter.		-1.8250
F-statistic	13.287	Durbin-Watson stat		0.8660
Prob(F-statistic)	0.0004			

Source: Author's Computation, 2024.

Results Presentation and Discussion

From table 4, the R-Squared (0.768615) < Durbin-Watson stat (0.866081). It suggests no spurious

regression results. Had R-Squared > Durbin-Watson stat (which will be near zero) if the residuals follow a random walk, there would have been a spurious

regression and the result would not have been acceptable. Thus, this regression result is acceptable.

In table 4, the coefficient of petroleum profit tax (PPT) is 0.2764 with a t-value of 2.2697 and an associated p-value ( $0.0425 > 0.05$ ). This suggests that PPT has a positive significant effect on Nigeria Economy growth (GDP). This implies a better marriage existence between variables and upturn/drop in PPT would lead to same effect on economy growth in Nigeria. This outcome is in congruence with those of Okoh, *et al.* (2016), and Eyisi, *et al.* (2015) which supported positive significant effect.

Exchange rate (EXR) has a coefficient of 0.0010 with a t-value of 4.5135 and an associated p-value (Sig. value) of  $0.0007 < 0.05$ . This suggests that EXR has a positive significant effect on Nigeria Economy growth (GDP). This implies a good marriage and an increase or decrease in EXR would lead to similar movement on the economy growth of Nigeria. This postulation contradicts that of Zermeñoa, *et al.* (2018) which found negative significant.

Inflation rate (INR) has a coefficient of 0.0076 with a t value of 0.8304 and an associated p-value (Sig. value) of  $0.4225 > 0.05$ . This suggests that INR has a positive insignificant effect on Nigeria Economy growth (GDP). The coefficient is positive which implies that an upturn/drop in INR would lead to upturn/drop on economy growth in Nigeria, but insignificantly. However, the result also contradicted that of Zermeñoa *et al.* (2018).

#### Conclusion

This research explored Petroleum profit tax, Exchange rates and Inflation rates on influence on Economic Growth with the aid of Econometric Views. Other statistical test (descriptive statistics, correlation analysis, variance inflation factor, and normality tests were carried out to determine the suitability of the data as employed. Pooled Ordinary Least squares was used to test the hypothesis and it was resolved that Petroleum profit tax (PPT) and Exchange rate (EXR)

has a meaningful influence on Nigeria economy while inflation rate has an insignificant influence on Nigeria Economy. Again, the coefficient of determination of this study stood at 77% meaning there are other factors that influence the growth of the Nigeria economy other than PPT, EXR and INR. Emanating from the above, this study recommends that the Nigerian government should apply stringent rules in the imposition and collection of taxes (PPT). Also, the relevant authorities (Government) should adopt decisive mechanism to impede the leakages so that the revenue generated would not be drain off to devious purse. In the same manner, institutions like the Central Bank of Nigeria that is in charge of monetary policies and other economic regulations should step up to enhance micro economic indices of GDP which could be used to consciously adjust standard of living of the citizens for a successive marriage between variables.

#### References

- Adegbite, T. A. (2019). An evolution of the effect of taxation policy on inflation in Nigeria. *Copernican Journal of Finance & Accounting*, 8(2), 9-25.
- Ani, A. G., Udeh, S. N. (2021). Exchange rate and economic growth in Nigeria. *Advance Journal of Management and Social Sciences*, 5(5), 18-26.  
<https://aspjournals.org/Journals/index.php/ajms/index>.
- Azubike, J.U.B. (2009). Challenges of tax authorities, tax payers in the management of tax processes. *Nigeria Accountant Journal*, (2009), 42(2), 36-42.
- Babatunde, W.A., Akinwade, A. A. (2010). Exchange Rate Volatility in Nigeria: Consistency, Persistency and Severity Analysis. *Central Bank of Nigeria Journal Applied Statistics*, 2(2),
- Etale, L.M., Binglar, P.F. (2016). The relationship between petroleum profit tax, personal income tax and economic growth. *Research Journal of Finance and Accounting*, 7(12), 82-86.
- Eyisi, A.S., Oleke, D.O., Bassey, E.E. (2015). The effect of taxation on macroeconomic growth in Nigeria. *Journal of Economic and Sustainable Development*, 6(6), 175-184.



- Ibadin, P.O., Oladipupo, A.O. (2015). Indirect Taxes and Economic Growth in Nigeria. *EKON MISAO IPRAKSA DBK. GOD, XXIV(2)*, 345-364.
- Iheanachor, N., Ozegbe, A. E. (2021). The consequences of exchange rate fluctuations on Nigeria's economic performance: An autoregressive distributed lag (ARDL) approach. *International Journal of Management, Economics and Social Sciences (IJMESS)*, 10(2-3), 68 - 87. DOI:10.32327/IJMESS.10.2-3.2021.5
- Isola, L., Oluwafunke, A., Victor, A., Asaleye, A. (2016). Exchange rate fluctuations and the Nigerian economic growth. *European Economical*, 35(2),
- Jameela, L.B. (2010). Effect of Exchange Rate Volatility on Macroeconomic Performance in Nigeria. *Interdisciplinary Journal of Contemporary Research in Business*, 4(1), 149- 155.
- Khosravi, A., Karimi, M. S. (2010). To Investigate the Relationship between Monetary Policy, Fiscal Policy and Economic Growth in Iran: Autoregressive Distributed Lag Approach to Cointegration. *American Journal of Applied Sciences*, 7(3), 420-424.
- Mordi, C. N. (2006). Challenges of Exchange Rate Volatility in Economic Management in Nigeria. *CBNBullion*, 30(5), 17-25.
- Obaretin, O., Akhor, O. S. (2019). Taxation and inflation in Nigeria: An empirical analysis. *Research Journal of Financial and Accounting*, 10(4), 91-98.
- Okoh, J. L., Onyekwelu, U.L., Iyidiobi, F.C. (2016). Effect of petroleum profit tax on economic growth in Nigeria. *International Journal of Business and Management Review*, 5(1), 47-53.
- Okolo, M. N., Ideh, O. A., Emengini, S. E. (2021). Electronic Corporate Tax, Aggregate Federally Collected Tax Revenues and Economic Growth: A Multivariate VAR Approach. *Universal Journal of Accounting and Finance*, 9(3), 372 - 382. DOI: 10.13189/ujaf.2021.090311.
- Okoye, P.V.C., Ezejiofor, R. (2014). The impact of e-taxation on revenue generation in Enugu. *Nigerian International Advanced Research*, 2(2), 449-458.
- Olayiwola, A. M. (2023). Do exchange rate fluctuations effect economic growth in Nigeria: Empirical evidence. *İşletme Bilimi Dergisi (JOBS)*, 11(3): 146-162. DOI: 10.22139/jobs.1333105.
- Onaolapo, A.A., Fasina, H.T. & Adegbite, T.A. (2013). The analysis of the effect of petroleum profit tax on the Nigerian Economy. *Asian Journal of Humanities and Social Sciences*, 1(1), 1-12.
- Osasu, O., Henry, E. M. (2019). Petroleum profit tax and economic growth in Nigeria. *Amity Journal of Economics*, 4(2), 72-82.
- Owolabi, T. A., Adegbite, A. A. (2017). The impact of exchange rate volatility on the Nigerian economy: A time series analysis. *Journal of Economics and Finance*, 11(3), 111-122.
- Padonu, N., Obi, J.U., Elesho, Y.A. (2023). The impact of exchange rate, inflation and interest rate on economic growth in Nigeria. *Global Scientific Journals*, 11(6), 2994-3016.
- Pinar, H. (2012). The impact of tax system design on entrepreneurship: A comparative analysis of developed and developing countries. *International Journal of Entrepreneurial Finance*, 3(1), 21-38.
- Sinebe, M. T. and Emudainohwo, O. B. (2023). Tax Planning and Firms' Value in Nigeria. *International Journal on Economics, Finance and Sustainable Development*, 5(10), 25-36.
- Zermeñoa H.J, Martínez, Y.K., Preciadoc S.S. (2018). Effects of inflation on financial sector performance: New evidence from panel quantile regressions. *Investigación económica versión impresa*, 77(303), 0185-1667.



