FINANCIAL DEVELOPMENT AND TAX REVENUE IN EVOLVING MARKETS: EVIDENCE FROM NIGERIAN

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ABSTRACT

The paper deals with the impact of tax revenue on emerging markets' financial development but focuses on Nigeria as a crucial growing economy. Over the years, scholars have investigated the effect of tax revenue on economic growth and the extent to which financial development affects tax revenue. This reverse kind of study is yet to build good literature. Hence, the total annual market capitalization as the proxy for financial development in Nigeria is used in the study. The independent variables include tax revenue, foreign direct investment and inflation. This study's secondary data span from 2000 to 2019 and are analyzed using various econometric tools. The various diagnostic tests to confirm the normality of the regression model specified for the study provide evidence of the model normality and error freedom. The impact analysis is carried out with multiple regression techniques, and the results reveal that tax revenue impacts significantly and positively on Nigeria's financial development. The findings also show that FDI has an insignificant positive influence on economic growth while the inflation rate appears enormously hurtful to that effect. The study proposes supports for tax revenue drive both from the government and the citizens. The study also encourages the government to create a favorable political and economic environment for FDI inflows as well as to ensure inflation rate is continuously minimized.

Keywords: Financial development, Tax revenue, Market capitalization, FDI, Inflation

JEL Classification: E44, H20

INTRODUCTION

Tax revenue plays a vital role to stimulate and sustain the general economic performance of a nation. It is one of the greatest and easiest income springs, from which the government generates revenue without much struggle. Omodero & Dandago (2019) noted that the government needs tax revenue for efficient public service delivery. That means a decline in tax revenue could lead to macroeconomic challenges (Loganathan et al., & Mardani, 2017). It behooves on government to make available sufficient public goods and services for the citizens, and it is an obligation on the part of the citizens to pay tax as at when due. The payment of tax by citizens is part of their civic responsibility and loyalty to the government (Omodero & Dandago, 2019). Therefore, it is usually hurtful to an economy where tax evasion is experienced due to underground economic activities and corruption (Omodero, 2019; 2020). Over the years, Nigeria has witnessed a high rate of informal sector operations, resulting in evading tax with impunity (Omodero, 2019). The more significant percentage of the population that evade tax have the feeling that the practice is legal and serves as the best response to lack of good governance in Nigeria (Ibadin & Eiya, 2013). Notwithstanding the ugly scenario, studies have shown that tax

revenue gives an economy a boost and remains a beneficial primary source of income the government uses to provide goods and services to the public.

Previous studies support tax revenue's significance to economic growth (Omodero & Dandago, 2019; Egbunike et al., 2018). In Latin America, Gustavo et al. (2013) found tax revenue to be having a general significant positive effect on economic growth. However, Khumbuzile & Khobai (2018) noticed a negative relationship between tax revenue and economic growth in South Africa. However, the empirical study on how tax revenue affects financial development is still very scarce. Tsaurai (2020) puts forward that "the nexus between tax revenue and financial development has so far been one-sided, which investigated the impact of financial development on tax revenue". The study of Nnyanzi et al. (2018) corroborates the assertion that most researches have been hinged on the impact of financial development on tax revenue. In this present study, the aim is to investigate tax revenue's effect on an emerging market's economic growth. The research focuses on Nigeria, and the proxy for the financial development employed by this study is the total annual capital market capitalization.

LITERATURE REVIEW

Conceptual clarification

Financial development refers to improvements in dimensions, competence and firmness of a nation's financial system and the ease of obtaining funds. Financial development is the channel through which tax revenue improve the economy. The entire process involves developing institutions, instruments and markets that support investments and growth process (IGI Global, 2020). This definition portrays the relevance of banks and capital markets in the financial development process of a country. The World Bank's Global Financial Development Database established a broad, but moderately modest theoretical 4x2 basis to globally quantify economic development. The structure recognizes financial depth, access, efficiency and stability as the ingredients and inherent features depicting an effective financial arrangement (IGI Global, 2020).The four qualities are expected to be an integral part of the financial sector's two significant aspects, known as the financial institutions and financial markets. Our focus in this study is the financial market which is represented by capital market capitalization.

Capital market is where investors buy or sell their investment instruments such as shares, bonds and government debt instruments. Market capitalization is the overall financial worth of a firm's outstanding shares (Chen, 2018). Therefore, the total annual market capitalization refers to the general sum and monetary value of all firms' outstanding shares. It is measured by increasing the current share price by the number of outstanding shares. Nigeria's capital market can trade government stocks/securities, debt instrument or bonds, equities, and exchange trust fund (ETF) introduced in 2011 (Omodero, 2020).

Review of related literature

Gustavo, Jorge & Vlovic (2013) evaluated the effect of tax revenue on the economic growth of Latin America using autoregressive vector techniques. The study found that corporate income tax could boost growth and could reduce tax evasion. The result for the individual countries (Argentina, Mexico and Chile) was insignificant. The findings also revealed that consumption tax was generally and significantly optimistic on growth in Latin America.

Lognathan et al. (2017) used Maki's co-integration test with various structural breaks, bootstrap rolling window, and quadratic estimates to assess the relationship between financial development, inflation, and economic growth on Malaysia's tax revenue. The study found unidirectional causality between taxation, financial development and inflation. The unidirectional causality also occurred between GDP and taxation. Taha et al. (2017) analyzed the nexus between tax revenue, financial outcomes, and Malaysia's economic growth. The study covered a period of 1970 to 2015 and employed co-integration and causality analysis. The findings revealed a robust correlation among tax revenue, financial development and economic growth.

Egbunike et al. (2018) assessed the impact of tax revenue on Nigeria and Ghana's economic growth from 2000-2016. The study used multiple regression analysis and found that tax revenue had a significant positive impact on the Gross Domestic Product (GDP) of Nigeria and Ghana. Khumbuzie & Khobai (2018) assessed the effect of taxation on the economic growth of South Africa from 1981-2016 using Auto-Regressive Distribution Lag (ARDL) approach. The study found a negative relationship between tax revenue and economic growth in South Africa. Nnyanzi et al. (2018) investigated the impact of financial development on East African countries' tax revenues from 1990 to 2014. The study utilized the GMM estimation approach and found that financial markets access had an insignificant impact on tax revenues in East Africa.

Gnangnon (2019) considered the effect of financial development on non-resource tax revenue performance in 104 developing countries and for a period spanning from 1980 to 2014. The non-resource tax revenue included international trade and economic growth channels. The findings revealed that financial development exerted positive influence on non-resource tax revenue. The study also established positive relationship between financial development and non-resource tax revenue. Omodero & Dandago (2019) examined the effect of tax revenue on public service delivery in Nigeria. The study used data from 1981 to 2017. The study aimed at establishing the influence of tax revenue on education and health care services. The study results revealed that tax revenue impacted significantly and positively on education and health care services. The finding led to the recommendation that tax revenue sources should adequately exploit all incomes for proper economic development in Nigeria. Tsaurai (2020) examined the effect of tax revenue on financial development in growing markets. The study employed nonlinear dynamic Generalized Methods of Moments (GMM) and panel data from 2001 to 2017. The study found that the complementarity of tax revenue and Foreign Direct Investment (FDI) had a significant positive impact on emerging markets' financial development.

DATA AND METHODS

The study uses existing data from 2000 to 2019. Thus, applied the causal research design to find the effect of tax revenue on financial development. Financial development was represented by Total Annual Market Capitalization as the only dependent variable. The Total Annual Market Capitalization and Tax Revenue data were obtained from the Central Bank of Nigeria Statistical Bulletin and the Federal Inland Revenue Service website. The data on FDI and inflation were derived from World Bank Development Indicators. We used all data in their logarithm form.

Model Specification

The functional and econometric relationship between the dependent variable and the explanatory variables are explained in the equation below:

Financial Development = f (Tax Revenue) ……..……. (1)

The proxy for financial development in Nigeria is the Total Annual Market Capitalization published by the Nigerian Stock Exchange. The explanatory variable is the Tax Revenue, the primary independent variable and the moderating variables are foreign direct investment and inflation. Thus, the study specifies the regression module as follows:

MKC = f (TXR, FDI, INF) ……..(2)

$LOGMKC = \beta_0+\beta_1 LOGTXR+\beta_2 LOGFDI+\beta_3 LOGINF+\varepsilon$……..... (3)

Where:

MKC = Total annual market capitalization.
TXR = Tax revenue;
FDI = Foreign Direct Investment Inflows;
INF = Inflation.
β_0 = Constant; β_1-β_3 = Regression coefficients; ε= Error term.
On the a priori, we expect; $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$.

RESULTS

Indicative checks

Table 1
BREUSCH-GODFREY SERIAL CORRELATION LM TEST

F-statistic	0.69383	Prob. F(2,14)	0.516
Obs*R-squared	1.8036	Prob. Chi-Square(2)	0.4058

The occurrence of serial correlation is tested using the Breusch-Godfrey Serial Correlation LM Test. The null hypothesis assumes nonexistence of serial correlation. The decision rule is to decline the null hypothesis if the p-value is less than 0.05 level of significance. From the result on Table 1, (Source: Authors' computation, 2020) the p-value of F-statistic is 0.5160 > 0.05. The result implies that there is the absence of serial correlation in the model.

The heteroskedasticity in linear regression analysis suggests that the model coefficients estimated using ordinary least squares (OLS) are biased. Heteroskedasticity in a linear regression analysis is noticed when the variance of errors or the model is not the same for all observations. The null hypothesis is that the residuals are homoscedastic.

Table 2 HETEROSKEDASTICITY TEST: BREUSCH-PAGAN-GODFREY			
F-statistic	0.22633	Prob. F(3,16)	0.8767
Obs*R-squared	0.8142	Prob. Chi-Square(3)	0.8461
Scaled explained SS	0.40415	Prob. Chi-Square(3)	0.9394

The alternate hypothesis is that the residuals are heteroscedastic. The decision rule rejects the null hypothesis if the p-value is less than the 0.05 level of significance. From result in Table 2, (Source: Authors' computation, 2020) the p-value of the F-statistic is 0.8767 > 0.05. The result shows that there is no Heteroskedasticity in the linear regression analysis.

Test of stability of the model

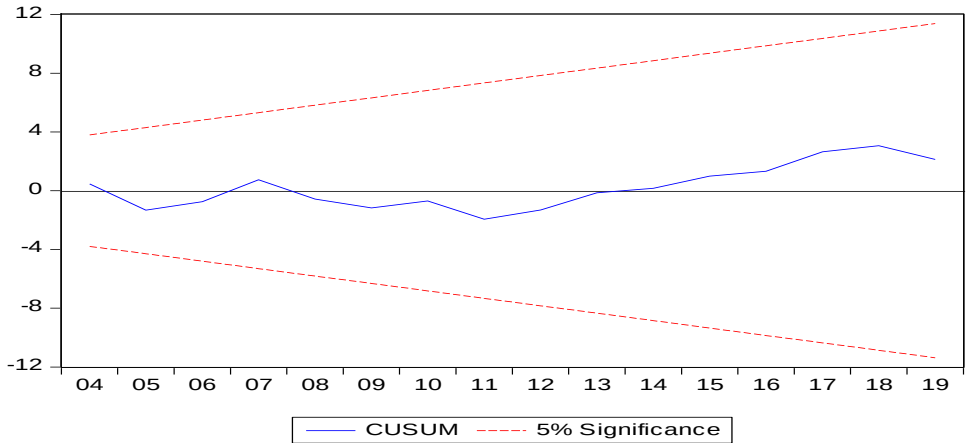

Figure 1

RECURSIVE ESTIMATES CUSUM TEST; CUSUM = CUMULATIVE SUM CONTROL CHART

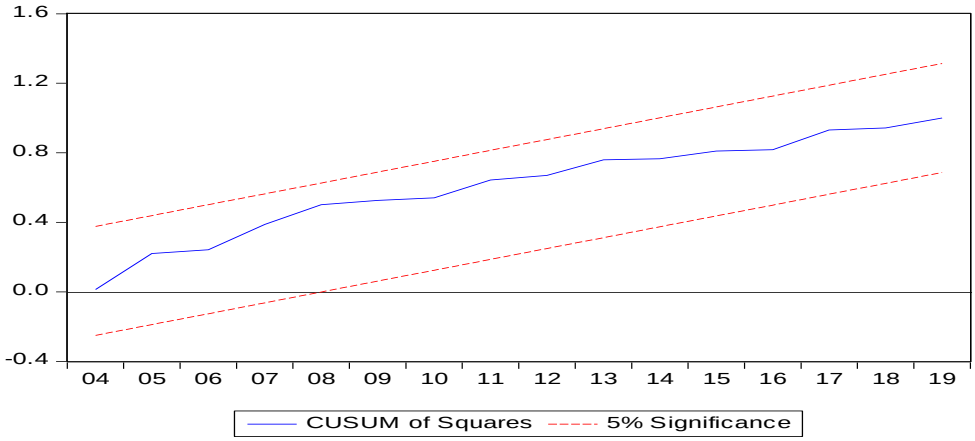

Figure 2

RECURSIVE ESTIMATES CUSUM OF SQUARES TEST; CUSUM = CUMULATIVE SUM CONTROL CHART

Table 3 RAMSEY RESET TEST			
Specification: LOG_MKC LOG_TXR LOG_FDI LOG_INFC			
	Value	**Df**	**Probability**
t-statistic	1.085811	15	0.2947
F-statistic	1.178985	(1, 15)	0.2947
Likelihood ratio	1.513260	1	0.2186

The Ramsey Reset test is engaged in checking the steadiness of the model and determining the occurrence of any weighty nonlinear interactions in the developed linear regression model. The null hypothesis is that there is a linear relationship in the regression model. The decision rule rejects the null hypothesis if the p-value is less than the 0.05 level of significance. From result on Table 3 (Source: Authors' computation, 2020) , the p-value of the F-statistic is 0.2947 > 0.05, which informs that the model has linear associations at 5% level of significance and that the data set used in the study are unwavering. This is confirmed in Figure 1 and 2 as the blue line falls between the two red lines indicating the boundaries of a 5% level of significance.

Table 4 TEST OF MULTICOLLINEARITY			
Variance Inflation Factors			
Sample: 2000 2019			
Included observations: 20			
	Coefficient	**Uncentered**	**Centered**
Variable	Variance	VIF	VIF
LOG_TXR	0.015451	176.5950	2.056220
LOG_FDI	0.025559	367.2973	2.101738
LOG_INF	0.991794	1748.276	3.383917
C	3.616506	4044.608	NA

Multicollinearity test is carried out to ascertain inter-correlation among the independent variables employed in this study. The presence of multicollinearity is suspected if the Variance Inflation Factor (VIF) is above the value of 4 (Garson, 2012) or 10 (Gujarati & Porter, 2009). However, it depends on the researcher to accept the benchmark that would better meet the research's objective. The Australian Property Institute (2015) states that multiple regression model relies on the hypothesis that all independent variables used in a study are not interconnected. The VIFs of all the independent variables used in this study are below the values of 4 and 10. Therefore there is no multicollinearity in the model. Table 4 (Source: Authors' computation, 2020).

Table 5 (Source: Authors' computation, 2020) gives information on the descriptive statistics which explain the statistical significance of the model. The model is examined for normal distribution. The Jarque-Bera (JB) statistics are used to test for the normality of the

model. The null hypothesis is that the model is typically distributed. The decision rule rejects the null hypothesis if the p-value is less than the 0.05 level of significance.

Table 5
DESCRIPTIVE STATISTICS

	LOG_MKC	LOG_TXR	LOG_FDI	LOG_INF
Mean	3.808047	3.178158	3.574326	1.254238
Median	4.004115	3.249332	3.657736	1.228400
Maximum	4.413136	3.670097	3.946507	1.393926
Minimum	2.674218	2.497593	3.056970	1.186674
Std. Dev.	0.558380	0.353918	0.278201	0.056669
Skewness	-0.850837	-0.381977	-0.437288	1.199330
Kurtosis	2.315222	1.841339	2.040543	3.516597
Jarque-Bera	2.803846	1.605100	1.404534	5.017036
Probability	0.246123	0.448185	0.495461	0.081389
Sum	76.16093	63.56317	71.48651	25.08475
Sum Sq. Dev.	5.923971	2.379900	1.470521	0.061016
Observations	20	20	20	20

The p-value of JB for all the variables are more significant than 0.05, and the study, therefore, accepts the null hypothesis that the model is usually distributed. The result is confirmed with the Histogram Normality on figure 3 where the JB collectively is 0.2 and the p-value 0.89 greater than 5% materiality level. The Skewness shows that all the variables employed in this study are moderately and negatively skewed, while the Kurtosis confirms normal distribution. The standard deviation is far lower than the mean values implying a softer spread of the data distribution.

Test of normality of the model

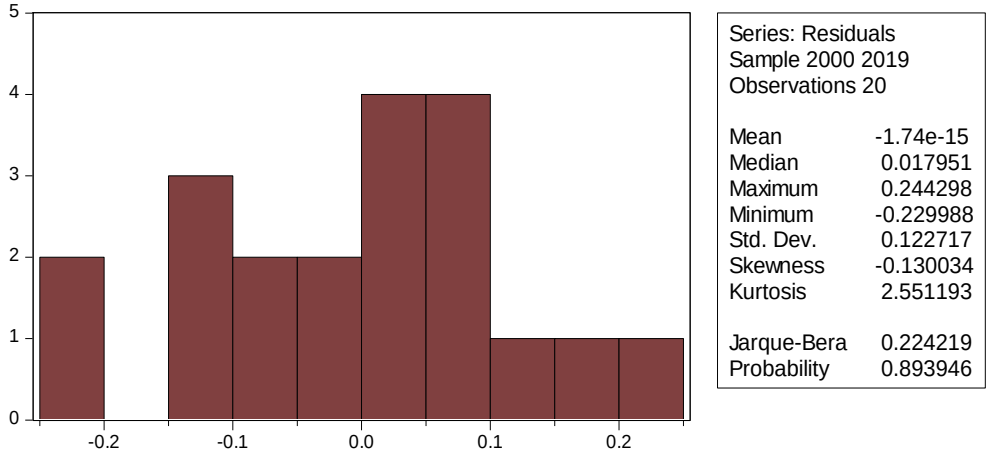

Figure 3
HISTOGRAM NORMALITY TEST

Table 6 REGRESSION RESULT				
Dependent Variable: LOG_MKC				
Method: Least Squares				
Sample: 2000 2019				
Included observations: 20				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LOG_TXR	0.92233	0.124302	7.420094	0
LOG_FDI	0.176088	0.159873	1.101425	0.287
LOG_INF	-4.010511	0.995889	-4.027067	0.001
C	5.277474	1.901711	2.775119	0.0135
R-squared	0.9517	Mean dependent var		3.808047
Adjusted R-squared	0.942643	S.D. dependent var		0.55838
S.E. of regression	0.133728	Akaike info criterion		-1.009166
Sum squared resid	0.28613	Schwarz criterion		-0.810019
Log likelihood	14.09166	Hannan-Quinn criter.		-0.97029
F-statistic	105.087	Durbin-Watson stat		1.933475
Prob(F-statistic)	0			

Table 6 (Source: Authors' computation, 2020) gives the multiple regression analysis results of this study. First of all, the correlation (R) value of 97.5%, which is the R-squared square root, indicates that the relationship between financial development and tax revenue in Nigeria is very robust and positive. The R-square, which represents the coefficient of determination, is also powerful. The R-square value of 95.17% indicates that that tax revenue, inflation and FDI explain about 95.1% of the changes in Total Annual Market Capitalization. In comparison, the remaining 4.83% are accounted by variable the model did not consider. The Durbin-Watson is approximately 2.The result reveals the absence of autocorrelation. It also supports the nonexistence of serial correlation found in table 1. The F-statistic value is 105.0870 with a p-value of 0.000 < 0.05. The result provides evidence that the model is statistically significant and appropriate for the study. Besides, it is evident that tax revenue, FDI and inflation jointly affected financial development positively. The Standard Error of Regression is less than 1, which implies that the estimation model is free from error.

On the individual variable assessment using t-statistic, tax revenue has a significant positive impact on financial development. The tax revenue t-statistic value is 7.42, while the p-value is 0.00<0.05. The result shows that tax revenue has a substantial positive impact on financial development in Nigeria. The outcome of this study agrees with the findings of (Gustavo et al., 2013; Omodero & Dandago, 2019; Egbunike et al., 2018) whose studies revealed that tax revenue impacted positively and significantly on economic growth and development. However, we notice a conflict with Khumbuzile & Khobai (2018) study which found a negative relationship between tax revenue and economic growth of South Africa.

The Foreign Direct Investment (FDI) does not exert a significant influence on financial development in Nigeria. The t-statistic is 1.10 with a p-value of 0.28>0.05. This result shows that FDI in Nigeria is still very immaterial, considering the financial development level required to boost the economy. The inflation rate is found very hurtful to the financial development in the country. The t-statistic is -4.02 while the p-value is 0.00. The result indicates that inflation has a significant negative impact on economic development in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study analyzes the impact of tax revenue on financial development in Nigeria from 2000-2019. Numerous studies on the effects of financial development on tax revenue (Tsaurai, 2020) and tax revenue influence economic growth. Considering the impact of tax revenue on financial development, few studies (Taha, 2017; Tsaurai, 2020) have just emerged, but there is not yet sufficient literature on the topic at hand. In emerging markets such as Nigeria, this topic is still very rarely treated. Therefore, the present study has many gaps to fill in the sphere of tax revenue contributes to financial development.

The paper used tax revenue, FDI, and inflation as the independent variables to explore the response of financial development. The study discovered that tax revenue contributes significantly and positively to the nation's financial development despite its scourge of tax evasion. The findings also revealed that inflation very hurtful to financial development. This is against our a-prior expectation and an indication that inflation affects investment in the capital market negatively. During inflation, households tried to ensure sufficient provision for the house, thereby reducing shares and other securities. The policy implication is that finance policies to improve financial development must incorporate measure to check inflation to prevent its adverse effect on investment in the stock market. The FDI result proves that Nigeria is yet to instill confidence in foreign investors to make as much investment as possible to improve its financial capacity.

The study recommends that rigorous effort should be employed in tax revenue drive and tax evasion discouraged by both the government and the citizens. The government should encourage foreign direct investment by ensuring political and economic stability. On the political stability, must stamp out corruption among the political class. The government should strengthen the legal system to fight crime, and all political groups in the country must respect the system. The study also suggests that the apex bank would endeavor to ensure that the inflation rate is reduced to encourage investment in the capital market. The study experience scarcity of adequate empirical works and literature and, therefore, recommends more studies in this research area.

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