Impact of Value-Added Tax on Price Stability in Nigeria

[1]Celina Udude Chinyere, [2]Eze Onyebuchi Michael, [3]Nweke Abraham Mbam, [4]Agbafor Michael Ogbonna and [5]Ujebe Nome

[1, 2, 3 & 4*] Department of Economics, Ebonyi State University, P.M.B. 053 Abakaliki, Nigeria
[5]Department of Business Management Ebonyi State University, P.M.B. 053 Abakaliki, Nigeria
*E-mail of Corresponding Author: onyebuchi.eze@ebsu.edu.ng

ABSTRACT

The study examined the impact of value-added tax on price stability in Nigeria for the period 1994-2019. Ex-post facto research design was adopted in the research. Cointegration test and Vector Error Correction Model were utilized in the analysis. Data sourced from the Central Bank of Nigeria statistical bulletin on inflation, value-added tax, money supply, interest rate and exchange rate were analyzed in the study. The results indicated that value-added tax had a positive and significant impact on inflation proxied for price stability in Nigeria. It was also showed that money supply and interest rate had a negative and significant influence on inflation, while exchange rate had a positive and insignificant effect on inflation in the economy. Consequently, the study recommended that government via the tax authorities should as a matter of fact; continue the implementation of value-added tax policy in Nigeria as increase in VAT triggers off higher inflation and thus, stabilizes prices of goods and services in the economy. In so doing, prices of goods and services are stabilized leading to economic growth and development in the Nigeria's economy.

Keywords:Value-Added, Tax, Price, Stability, Cointegration Test, Vector Error Correction Model

INTRODUCTION

The major problem facing the Nigerian government is inadequate revenue generation due to persistent budget deficits of the country [1]. As a result, the government expenditure on social services has been rising due to rapid increase in population growth. However, the revenue generating capacity of the nation has not improved in proportion to increase in population of the country [2]. To tackle the problems of shortage in revenue generation and the recurring budget deficits, more diversified government source of revenue generation becomes imminent. One of the emerging sources of government revenue is value-added tax. However, this option of generation revenue may not be feasible as it might in result in increase money in circulation; and consequently, leads to higher inflation rate [3]. Another option available for government in terms of generating revenue through taxation except VAT include personal income tax, companies income tax, and petroleum profit tax. Unlike other direct tax system, value-added tax is an indirect tax with emphasis on taxing value addition product [4]. Value-added tax (VAT) is a type of consumption tax that is placed on a product whenever value is added at a stage of production and at the point of retail sale [5]. The amount of VAT pays by the consumer is on the cost of the product, less any of the costs of materials used in the product that have already been taxed. VAT is the most productive indirect tax in Nigeria considering its contribution to the national treasury. Its contribution rose from ₦7.26 million in 1994 to ₦802.98 million in 2014. In 2015, Nigeria experience a 0.04% reduction in VAT revenue compared. The actual amount generated in 2015 was ₦767.33 million while the amount in 2014 was ₦802.98 million. Despite the reduction in VAT revenue in 2015, its contribution to total revenue in Nigeria increased from 17% which was recorded in 2014 to 21% in 2015 [6]. In 2016, total VAT collected again improved to ₦828.20 million which was a 6% increase from the preceding year; and in 2017, total VAT revenue was ₦972.35 million was a 17%

improvement from the amount collected in 2016 [7]. In 2018, the value-added tax revenue rose by 14% from its previous year collection of ₦972.35 million to ₦1,108.14 million; and in 2019, the total VAT revenue stood at ₦1,188.58 million which is about 7.% increase from the amount realized in 2018. In Nigeria, the CBN has repeatedly made price stability a core objective of its monetary policy. The realization of this goal has been a subject of contention over the years. According to [4,6,8] monetary policy was described as an economic management technique to achieving sustainable economic growth and development have insignificant impact on inflation in Nigeria. Neither of the studies explored the possibility of foreign exchange rate as an instrument to achieving price stability as an alternative to the several decades of adoption of interest rate variable in the Nigeria's economy. This study therefore undertakes a comparative analysis of the impact of interest and foreign exchange rates as tools of price stability in Nigeria. This is anchored on the fact that over the past decades, Nigeria has consistently experienced instabilities in the price of goods and services, as the prices fluctuated thereby negatively affecting economic growth of the country. This has manifested in the level of inflation in Nigeria shifting from acceptable single-digit to double- digit inflation and beyond. Government's excessive tax also increases prices of goods and services, which make it impossible for prices to stabilize as the producers and sellers of such value added tax product always shifts the tax burden to the final consumer, thereby fluctuating prices of goods and services. It is in the light of the above, that this study investigated the impact of value-added tax on price stability in Nigeria.

Literature Review
Conceptual Review
Value-Added Tax (VAT)

Value-added tax is described as a consumption tax levied at each stage of the consumption chain borne by the final consumer of the products or services. Each firm or individual is required to charge and collect VAT at a flat rate of 5% on all invoice amounts on all goods and services not exempted from paying VAT. Value Added Tax with effect from 1st January, 1994, is now imposed on a wide range of consumptions by companies and individuals alike under the Value added Tax (VAT) Act.

Overview of VAT and its Administration in Nigeria

Value-added tax as an indirect tax was introduced in Nigeria in 1993 by the VAT Act No. 102 of 1993 as a replacement for the sales tax that was in operation in the Federal Capital Territory. It was the outcome of Dr. Sylvester Ugo's study group on indirect taxation in November 1991. This was designed as a consumption tax payable on goods and services consumed by individuals, government agencies or business organizations. Nigeria operates a VAT rate that does not synchronize with the Economic Community of West African States (ECOWAS) Protocol [3]. ECOWAS adopted a uniform VAT protocol due to the constant movement of people and goods across the countries in the region, and the need to be subject to similar conditions. Under Nigeria's influence, the ECOWAS advisory rate has been reduced to 10 percent, while Nigeria, despite being a signatory of the protocol, currently operates the lowest VAT rate across the sub-region, at 5 percent [4]. It should be noted that, since its inception in 1993 and subsequent implementation in 1994, the income tax burden has been reduced twice, but the VAT rate has remained static at 5 percent. Exemptions granted to reduce the distortions of VAT create a lot of complexities, lack of transparency and arbitrariness in terms of application and enforcement. Hence, the government is affected by high levels of exemptions and a low VAT rate. The Nigerian gross product VAT model is one that tries to maximize tax by disallowing cost. It, however, allows for restrictions on the recovery of VAT paid on capital terms given that the cost of capital is amortized and spread across items. Currently, 17 categories of goods and 24 categories of services are VAT-eligible

and all imports are VAT-eligible, whether raw materials or finished goods [5].

Theoretical Review

Theory on the institution of value added tax (VAT) is traced to the writings of Wilhelm Von Siemens, who proposed it as an alternative to the German turnover tax. The development of these proposals into prologue in a country is credited to Maurice Faure and Carl Shoup who were responsible of the introduction in France in 1954 [6]. From its inception, VAT was imposed on all sectors of France, the first country to use this system. Once instituted, it was immediately clear that revenues collected from the VAT system constituted a substantial share of the government revenue in the French economy. Due to the ease of payment and ready comprehensibility, countries across the world have introduced some form of VAT in their economy. Taxation forms the most important source of revenue to government. The Value Added Tax is one of such revenue sources today since its inception in Nigeria in 1994.

Faculty Theory

This theory postulated that one should be taxed according to the ability to pay more so that a citizen should pay taxes just because he can, and his relative share in the tax burden is to be determined by his relative paying capacity. The bottom line of this theory is to maximize the distributive effects of taxes within the country. Cost of service theory. This theory assert that semi-commercial relationship exist between the state and the tax payer. According to the theorist, the state give up basic protective and welfare functions to cover the cost of the services. This theory is homogenous with benefit received theory [7].

Keynesian Taxation Theory

The initiator of the Keynesian taxation theory was John Keynes, who exposed its main principles in his book titled "The General Theory of Employment, Interest and Money" in 1936. In the theory, Keynes advocated for government interventions in terms of regulating the nation's economy. According to Keynes, fast economic development must be based on a market expansion and an associated increase in consumption. As a result, government intervention is achieved at the level of effective demand. One of the main assumptions in Keynes's theory is that economic growth is related to monetary savings only in conditions of full-employment. However, large amounts of savings hinder economic development as they represent a passive form of income and are not invested in production. Consequently, the author suggested that surplus savings must be subtracted with the help of taxation. This is why the state must intervene with the purpose of subtracting income savings with the help of taxation in order to finance investments and cover state expenditures. Keynes argued that high level of progressive tax is required and that low tax rates lead to reduced state revenues and as a result contributes to economic instability. Furthermore, Keynes upheld that taxes must play the most important role in the system of state regulation. High taxes stimulate economic activities; influence the stability of the economy and in the context of the economic system act as integrated flexibility mechanisms.

Neo-classical Taxation Theory

Another theory of taxation is the neo-classical theory of taxation developed by J. Mutt, A. Laffer, and others, which is anchored on the assumption that nation is obligated to remove obstacles to free market competition because the market can regulate itself without external intervention. That is, it can regulate itself to achieve economic equilibrium. Hence, this theory differs from the Keynesian postulation and assigns a rather passive role to state regulation of economic processes. For the theory, taxation policy should be developed under the same assumptions including that taxes must be as small as possible and corporations should be granted significant tax exemptions.

Otherwise, a high tax burden would hinder economic activities and restrains the investment policies of corporations, which would lead to a downfall in the production funds renewal and in an economic recession. A restricted taxation policy would allow the market to provide independently for fast development and would lead to a significant expansion of the taxation basis.

Empirical Review

[6],examined the impact of indirect tax on economic development of Nigeria for the period 2000-2016 using OLS regression technique. The study found a positive and significant relationship between VAT and economic development proxy by HDI. Gwa and Kase (2018) investigated the contribution of petroleum profit tax revenue to the growth of the Nigeria's economy from 1997 to 2016. The data were analyzed with the use of OLS regression technique. The result revealed that VAT has a positive and significant impact on economic growth in Nigeria. [8] investigated the impact of VAT on economic growth and development in Nigeria. In the study, economic growth was proxy by GDP while economic development was proxy by HDI. The first model which had GDP as a proxy for economic growth showed that VAT had a positive and significant relationship influence on economic growth while the second model with HDI as a proxy showed that VAT has a negative and significant impact on economic development. More so, [6], carried research on the effect of tax revenue on economic development of Nigeria for the period 1993-2014, mainly to examine if there is nexus among VAT, and Human Development Index. The study made use of the ordinary least regression (OLS) technique of analysis, and discovered a positive but insignificant relationship between Value-Added Tax and HDI. [7] carried out a study on investigation of the relationship between VAT and GDP in Nigeria from 1994 to 2008 using pearsons' product movement correlation of coefficient. The study revealed that VAT was not effective as revenue earner and the study recommended maintenance of the status quo. Similarly, Ugochukwu and Azubike (2016) did research on the contributions of Value Added Tax to Revenue generation and Gross Domestic Product in Nigeria from 1994 to 2008 through the application ordinary least square method of analysis. The purpose of the study was to examine the impact of VAT on revenue generation and economic growth. The result showed that VAT has a significant impact on economic growth in Nigeria. Ofishe (2015) carried out a study on the impact of value added tax on economic growth in Nigeria from 1994 to 2012 using ordinary least square. The result from the model revealed that there is positive and significant impact of VAT on economic growth in Nigeria. It, thus, recommended that government should put in place measures to effectively utilize generated VAT revenue for infrastructural and economic development. Okoli and Afolayan (2015) investigated the impact of value added tax on Nigeria's economic growth from 1994-2012, employing the Error correction model. Findings of the study indicated a positive and significant influence of VAT on economic growth in the economy. Nasiru, Haruna and Abdullahi (2016) took a study on the impact of Value Added Tax on economic growth of Nigeria for the period 1994-2014. The study used co-integration test in the analysis and found evidence of a significant positive impact of VAT on economic growth.

Methodology

To investigate the impact of value-added tax on price stability in Nigeria from1994 to 2019, inflation was proxied for price stability in the study. The stationarity test, Cointegration test and Vector Error Correction Model are employed in the analysis. The variables specified in the study include inflation rate as a proxy for price stability, value-added tax (VAT), broad money supply, interest rate and exchange rate. Data for these variables are sourced from the Central Bank of Nigeria (CBN) statistical bulletin, volume 30, 2019; and FIRS data reports ranging from 1994 to 2019.

Model Specification

The model showing the relationship between value-added tax (VAT) and price stability in Nigeria is specified in the model below.

$$INF = f(VAT, M_2, INT, EXR) \qquad\qquad 1$$

In linear relationship, it is specified as:

$$INF = b_0 + b_1 VAT + b_2 M_2 + b_3 INT + b_4 EXR + U_t \qquad\qquad 2$$

Where, INF = Inflation Rate, VAT = Value-Added Tax, M_2 = Money Supply, INT =Interest Rate and EXR = Exchange Rate.

A Priori Criterion

Table 1: A priori Expectation

Variable	A priori sign
VAT/INF	$b_1 > 0$
M_2/INF	$b_2 > 0$
INT/INF	$b_3 > 0$
EXR/INF	$b4 > 0$

Author's Compilation, 2021.

Results and Discussion

The effort to investigate the impact of value added tax on price stability in Nigeria led the study to employ time series data obtained from the Central Bank of Nigeria (CBN) and Nigeria's federal inland revenue service on inflation, value-added tax, money supply, interest rate and exchange rate.

Data collected were first subjected to series of advanced econometric tests including unit root test using unit root test, cointegration test and then, the variables were estimated using the vector error correction model (VECM). The results and their discussions are presented below:

Unit Root Test

The Augmented Dickey-Fuller (ADF) is employed to test for the existence of unit roots in the data series using trend and intercept. The test results are presented in table 2 below:

Table 2: ADF Unit Root Test

Variables	At Levels		At First Difference			
	ADF statistic	5% Critical	ADF statistic	5% Critical	Order	Remark
INF	-2.490904	-3.632896	-4.086002	-3.658446	1(1)	Stationary
VAT	-0.970187	-3.603202	-4.339182	-3.612199	1(1)	Stationary
M2	-0.609424	-3.622033	-5.029079	-3.658446	1(1)	Stationary
INT	-3.215351	-3.603202	-5.817153	-3.612199	1(1)	Stationary
EXR	-2.014997	-3.603202	-4.913073	-3.612199	1(1)	Stationary

Source: Researcher`s compilation, 2021 using E-view 9.0

Table 2 above indicates the results of unit root test results. The result reveals that the variables including INF, VAT, M2, INT and EXR were not stationary at levels using Augmented Dickey Fuller test. The reason for their non-stationarity is anchored on the fact that their critical values were less than ADF statistics in absolute value at 5 percent level of significance. Nevertheless, all the variables considered became stationary after first differencing since their ADF statistics were greater than their critical values in absolute value. The results show that the series are integrated of the same order one, that is, 1(1). Hence, the variables are good fit to be used for analytical purpose. As a result, co-integration test is the most suitable analytical method required to estimate the long-run relationship among the variables.

Co-integration Test

In order to estimate the long-run association among the variables, the Johansen co-integration test is employed. The model with lag 1 was chosen with the linear deterministic test assumption and the result is as shown in table 3 below:

Table 3: Johansen Co-Integration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.949301	135.2124	69.81889	0.0000
At most 1 *	0.825268	69.61156	47.85613	0.0001
At most 2 *	0.586458	31.23246	29.79707	0.0340
At most 3	0.413883	11.80655	15.49471	0.1665
At most 4	0.002423	0.053365	3.841466	0.8173

Source: Researcher`s compilation, 2021 using E-view 9.0

The results above, depicts the Johansen Co-integration test for unrestricted co-integration rank trace value. Co-integration exists if the trace statistic value is greater than the critical value at 5 percent level of significance. The result of the co-integration in table 3 indicates three co-integrating equations. Condition to satisfy long-run relationship is that the trace statistic or Maximum Eigen value must be greater than the critical value at 5 percent level of significance in at least one of the hypothesized equations. Similarly, the computed Eigen value is significantly different from zero in three of the hypothesized equations. Hence, it is concluded that three of the hypothesized equations satisfy this condition and therefore, the null hypothesis of no co-integration among the variables is rejected.

Vector Error Correction Model (VECM)

It has been pointed out earlier that VECM is meant to tie the short-run dynamics of the cointegrating equations to their long-run static dispositions in order to maintain equilibrium. In order to capture the short run fluctuation, the Vector Error Correction Model (VECM) was employed and the result is presented in able 4 below.

Table 4: Vector Error Correction Model Result

Cointegrating Eq:	CointEq1				
INF(-1)	1.000000				
LOG(VAT(-1))	6.112254				
	(1.70019)				
	[-3.59504]				
M2(-1)	-0.001096				
	(0.00018)				
	[-6.05975]				
INT(-1)	-3.417897				
	(0.30473)				
	[-11.2160]				
EXR(-1)	0.100942				
	(0.02362)				
	[4.27386]				
C	37.78900				
Error Correction:	D(INF)	D(LOG(VAT))	D(M2)	D(INT)	D(EXR)
CointEq1	-0.047344	0.003179	-25.86368	0.151612	0.309881
	(0.19303)	(0.00539)	(24.7225)	(0.07489)	(0.45560)
	[-5.42585]	[0.59008]	[-1.04616]	[2.02451]	[0.68015]
R-squared	0.755655	0.389938	0.457296	0.568640	0.506220
Adj. R-squared	0.657917	0.145913	0.240214	0.396096	0.308707
F-statistic	7.731436	1.597945	2.106561	3.295621	2.562979

Source: Researcher`s compilation, 2021 using E-view 9.0

R^2=0.755655, F-test = 7.731436, ECM = -0.047344, DW = 2.049329

Co-integrating coefficient for ECM (-1) value is - 0.047344 which showed that the speed of adjustment between the short-run and long-run equilibrium is approximately 4.7 percent annually. This implies that the system corrects its previous period short-run disequilibrium at a speed of 4.7% annually with a negative sign, fractional and a statistically significant ECM (-1) as shown by the t-statistic value of [-5.42585]. The statistical significance of the co-integrating equation satisfies all conditions and the negative sign satisfies the other condition.From the estimated result, the value of the constant term is 37.78900, implying that when other variables are held constant, price stability increased by 37.8 units. More so, the coefficient of money supply (M2) and interest rate (INT) representing (-1) are -0.001096 and -3.417897 respectively, which indicate that a unit increase in money supply and interest rate brings about 0.0011 and 3.42 units decrease in inflation rate respectively. Again, exchange rate and value-added tax (VAT) showed a positive relationship with inflation. Thus, a unit increase in exchange rate and value-added tax will bring about 0.101 and 6.112 increase on inflation in Nigeria. Similarly, it was revealed that the R^2 has value of 0.75%. This result indicates that the dependent variable is well explained by the independent variables. The remaining 25% was due to other variables excluded from the model. The overall level of significant shows that the entire influence is statistical significant given that the value of the F-statistic of 7.731436. This result shows that all the independent variables employed for the study are all significant in explaining price stability in Nigeria.

LM Serial Correlation Test

Table 4: LM Test Result

Lags	LM-Stat	Prob
1	28.61394	0.2804
2	20.42998	0.7239

Source: Researcher`s compilation, 2021 using E-view 9.0

From the result above, it could be seen that probability value of LM Test is 0.2804 which is greater than 0.05. Since the P-value is greater than the 0.05 level of significance, thus, conclude that there is no autocorrelation in the series. Hence, the results obtained can be employed for forecasting purposes and shows absence of auto correlation which make the estimate unbiased, consistency and reliable for policy formulation.

Policy Implication of the Results

The findings from the estimation result, it was observed that VAT has a positive and significant impact on inflation with a coefficient value of 6.112254. This result indicates that a unit increase in VAT will bring about 6.1% increases in price stability in Nigeria. This means that VAT has a strong positive and significant impact on prices. The findings support the results of the Ajakaiye (1999), which earlier discovered that VAT is more deleterious when viewed as a cost. The implication of this is that the instability that it introduces into the Nigerian economic system is through upward movements in prices.

CONCLUSION AND RECOMMENDATION

This paper examined the impact of value-added tax on price stability in Nigeria. The findings showed evidence of equilibrium long-run relationship among the variables utilized. The results indicated that value-added tax significantly and positively affects price stability proxied by inflation in the long-run. This result explained the significant effect value-added tax has on Nigeria's price stability in the economy. Thus, the study recommends that government through the tax authorities should continue to implement value-added tax policy in Nigeria as increase in VAT triggers off inflation and thus, stabilizes prices of goods and services in the economy. In that, prices of goods and services are stabilized leading to economic growth and development in the Nigeria's economy.

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