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Article

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Accounting and taxation review

Provided in Cooperation with:
University of Benin, Benin City, Nigeria

Reference: Eiya, O./Osazuwa, N. P. (2017). Taxes and unemployment in Nigeria. In: Accounting and taxation review 1 (1), S. 106 - 118.

ISSN:

Available online at http://www.atreview.org
hppt://
Original Research Article

TAXES AND UNEMPLOYMENT IN NIGERIA

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Received: 02/11/2017 Accepted: 23/12/2017

Abstract

The study investigates the relationship between taxation and unemployment in Nigeria. The study adopts the quantitative approach. It uses a time series data covering the period 1984-2014 obtained from the database of government agencies. The study employed the Augmented-Dickey Fuller test to analyse the unit roots. The Johansen co-integration methodology was used in testing the co-integration properties of the data and the fully modified OLS was used to estimate the regression. The study found Value added tax and customs and excise duties positively related to unemployment while petroleum profit tax was negatively related. The study recommended that taxes collected be judiciously used to provide infrastructure that will attract employment.

Keywords: *Taxation; Value added tax; Unemployment; Co-integration; time series.*
JEL Classification: *H200, E240*

1.0 INTRODUCTION

The political, economic and social development of any country to a great deal depend on the revenue generated which in turn will influence the level of infrastructure that the government of the country will be able to provide. The availability of infrastructure attracts industries which will create employment opportunities hence reducing the rate of unemployment. One of the major means through which government generate revenue is taxation. Tax has been defined as a compulsory imposition on income or gain of individuals, companies or other legal entities by the government to raise revenue to lessen the cost of governance, facilitate resource allocation and promote social equity through wealth distribution (Oriakhi, 2002 and Eiya, 2012). Taxes do have a significant impact on any system. Personal income tax for example, do form a significant part of the entire emoluments of the employee. In a number of European countries such as Sweden, Belgium, France, and Italy, it makes up about 30% of the payroll (Kugler & Kugler, 2001).

Unemployment refers to a situation whereby persons who fall under the bracket of working population and are willing and able to work, but are unable to secure employment. The International Labour Organisation (ILO) in 2015 reported that over 200 million people globally or 6% of the world's workforce were without jobs. Also, UNDP (2010) showed that Nigeria's unemployment had grown. In fact, the report showed that from about 10.4% in 2016 to about 14.2% in 2017. There have indeed conflicting views on the relationship between taxes and unemployment (Vodopivec, 2004). For instance, this unending argument warranted a study of this nature which has provided evidence from a developing country's perspective, particularly from Nigeria, were only a few studies have been done, especially examining taxes other than personnel tax and thus provide support to the view that certain taxes do have an effect on the rate of unemployment. In clear terms, the striking contribution of this paper is that it is one of the earliest to investigate the relationship between indirect taxes and unemployment. In line with the above, the broad objective of the paper is to investigate the relationship between taxes and unemployment. , the specific objectives of this study are to ascertain the relationship between the

different types of taxes collected in Nigeria (Value added tax, companies' income tax, customs and excise duties, petroleum profit tax, personal income tax, and tertiary education tax) and unemployment rate.

The rest of the paper is structured as follows. The second section gives an overview of previous empirical studies on the impact of taxation on unemployment, followed by the methodology. The fourth section presents the results and analysis while the fifth section concludes and gives relevant policy recommendations.

2.0 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Taxes and Unemployment

The impact of different types of taxes on labour market outcomes has been on the front burner of several discussions in recent years. There have indeed been several arguments on the issue. For instance, labour taxes in markets that are not elastic could reduce demand for labour and employment and therefore increase unemployment (Vodopivec, 2004; Dolenc & Laporsek, 2012). This suggests that labour taxation negatively affects labour market performance. Adesola (1986) studied the impact of Petroleum Profit Tax on unemployment. He found out that a negative relationship does exist between petroleum profit tax and unemployment. He posited that government should pay more attention to revenue generated through petroleum profit tax in order to reduce waste and enhance productivity towards job-creation in Nigeria.

Further, looking into indirect taxes, Value added tax (VAT), a consumption tax could control the production and consumption of certain goods and services, control adverse economic conditions, inflation rates and provide the needed infrastructure which in the long-run could provide industries thereby reducing the level of unemployment. Thompson and Rohlin (2012) supported this view. Their study showed that sales tax had an effect on unemployment and that the effect was strongly felt in the retail industry, and industries dominated by females. Zaman, Okasha, and Iqbal (2012) examined the impact of value added tax in Pakistan's economy. They used household data to measure the impact of value added tax on the social and economic wellbeing of the populace. They found that VAT distorts the economic order of the society. Similarly, Salti

and Chabaan (2010) studied the impact of a rising VAT rate on key economic indicators like poverty and inequality. An empirical model based on consumer theory of demand was established to study the impact. The result showed that increased rate of VAT would have a negative impact on poverty, despite having a negative impact on overall consumption. It can be seen from the studies reviewed that taxes in general have an impact on economic indicators such as unemployment, and the direction of this impact differs with the prevailing economic conditions and inherent government policies. It can also be seen from the review that studies investigating this issues from the Nigerian front are indeed sparse and lastly none of the studies looked at companies income tax and tertiary education tax with unemployment,–hence justifying this study.

3.0 METHODOLOGY

The study focused on the effect of some taxes: companies' income tax, petroleum profit tax, value added tax and tertiary education tax on unemployment rate in Nigeria. Time series data was used. The data were obtained from the database of government agencies such as Federal office of Statistics, Central Bank of Nigeria and other allied organizations such as economic and financial review, Central Bank Bullion, Central Bank Brief, Published and unpublished works of Independent bodies. The study adopts the quantitative approach. It used a time series data covering the period 1984-2014. The study employed the Augmented-Dickey Fuller test to analyse the unit roots. The Johansen co-integration methodology was used in testing the co-integration properties of the data and the fully modified OLS was used to estimate regression or model.

Model Specification

The study is anchored on the benefit received theory which basically explains that the payment of taxes (directly or indirectly) should essentially initiate a mutual relationship between the tax payer and the government. On receipt of taxes the government is expected to provide infrastructure that will create the enabling environment for gainful employment (Bhartia, 2009). The model of this study was adapted from the work of Thompson and Rohlin (2012) that examined the functional relationship between

unemployment and sales tax. It was further developed to include other taxes (direct and indirect) that is expected to have an effect on unemployment.

The functional form of the model specified for this study is given as;

$UR= X_0 + X_1VAT + X_2CIT + X_3CED + X_4 PPT+ X_5PIT +X_6TET+ Ut……$

Where,

UR = Unemployment rate
VAT = Value added tax
CIT = Companies Income tax
CED = Custom and Excise Duty
PPT = Petroleum profit tax
PIT = Personal Income Tax
TET = Tertiary Education Tax

The apriori expectation of the above model is, = $X_0<0$, $X_1<0$, $X_2<0$ $X_3<0$, $X_4<0$ $X_5<0 X_6<0$.

4.0 ESTIMATION RESULTS AND DISCUSSION OF FINDINGS

Table 1: Descriptive Statistics

	VAT	CIT	CED	PPT	PIT	UR	EDUT
Mean	8055127	973658.4	709324.6	26472484	487008.2	7.082353	410299.4
Median	401700	295717	1132923	1904900	334410	6	114500
Maximum	65635352	2999006	1200100	3.07E+08	963200	14.2	1967721
Minimum	57500	68700	101500	39220	68000	4	7258.7
Std. Dev.	21673898	1240176	506150.8	73588495	342096.3	2.695189	655498.2

Source: Researchers compilation (2017).

The summary/descriptive statistics is presented for the variables as shown in table 2, VAT has a mean value of #8055127(nm) with standard deviation value of #21673898 indicating significantly high volatility in VAT revenue within the period under review. CIT has a mean value of #973658.4 (nm) with standard deviation of #1240176 also indicating significantly high volatility in CIT revenue within the period under review. PIT has a mean value of #26472484(nm) with standard deviation of #342096.3. UNEMPL has a mean value of #7.082% with standard

deviation of #2.6952. PPT has a mean value of #26472484(nm) with standard deviation of #73588495 also indicating significantly high volatility in PPT revenue within the period under review. PIT has a mean value of #487008.2(nm) with standard deviation of #342096.3 and finally, CED has mean value of #709324.6(nm) with standard deviation of #506150.8

Figure 1 shows the normality test for the data set and as observed the mean residual for the series is -0.2913 with maximum and minimum values of 1.1497 and -6.7406 respectively. The standard deviation value of 1.542 suggests that the residuals for the variables are not significantly dispersed indicating some level of similarity in the movement of the residuals. The average Jacque-Bera statistic of 171.2501 and the p-value of 0.00 indicate that the series are normally distributed and the presence of outliers are unlikely in the series and their residuals

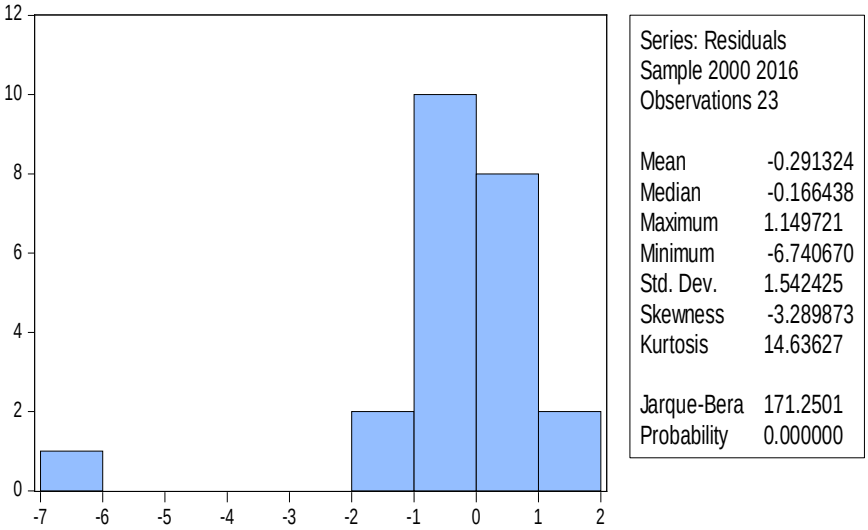

Figure 1: Histogram Normality Test

Table 2: Unit root test Results

Unit root test at levels			
	ADF-Test Statistic	95% Critical ADF Value	Remark
VAT	1.7881	-2.96	Non-stationary
CIT	2.9573	-2.96	''
PIT	3.9403	-2.96	''
UNEMPL	2.3891	-2.96	''
CED	1.9044	-2.96	
PPT	-2.3556	-2.96	,,
EDUT	1.8944	-2.96	
Unit root test at 1st difference			
	ADF-Test Statistic	95% Critical ADF Value	Remark
VAT	-3.1688	-2.96	Stationary
CIT	6.4613	-2.96	''
PIT	4.8813	-2.96	''
UNEMPL	-7.4777	-2.96	''
CED	-3.2596	-2.96	''
PPT	4.8494	-2.96	
EDUT	3.093	-2.96	

Source: Researchers compilation (2017).

The Augmented -Dickey Fuller (ADF) test is employed in order to analyse the unit roots. The results are presented in levels and first difference. This enables us determine in comparative terms, the unit root among the time series and also to obtain more robust results. The result indicates that all of the variables at levels except for personal income tax have ADF values that are less than the 95% critical ADF value of 2.96. The implication of this is that the time series for these variables are non-stationary at levels. We take the first differences of the respective variables and perform the unit root test on each of the resultant time series. The rationale behind this procedure is that the Box and Jenkins (1976) have argued that differencing non-stationary time series will make it attain stationarity. The result of the unit root test on these variables in first differencing shows that the ADF values in absolute terms is greater than the 95% critical ADF values. With these result, these variables are adjudged to be stationary. Thus we accept the hypothesis that the variables possess unit roots. Indeed the variables are integrated of order one I(1).

Table 3: Johansen co-integration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value	Prob.**
r = 0*	0.846358	104.7129	69.81889	0.0000
r ≤ 1*	0.765911	65.37718	47.85613	0.0005
r ≤ 2*	0.695046	34.88406	29.79707	0.0119
r ≤ 3	0.360506	9.944609	15.49471	0.2850
r ≤ 4	0.026127	0.555965	3.841466	0.4559

Source: Researchers compilation (2016).

Following the unit root test results shown in table 2 which indicate that the time series variables are integrated of order one I (1), the next step is to examine whether or not there is at least one linear combination of the variables that is integrated of order zero, I(0), and hence, if there exists a stable and non-spurious cointegrated relationship in the long run between time series variables (Miguel, 2000). The Johansen approach can determines the number of cointegrated vectors for any given number of non-stationary variables of the same order. The study utilizes the Johansen co-integration methodology in conducting the co-integrating properties of the data. Using the trace statistics, the results for the test rejects the null hypothesis that there is no co-integrated vector and hence the variables are co-integrated. With this result, we proceed to specify the long run equation.

Table 4: Regression Result using Fully Modified OLS (FM-OLS)

Variable	Aprori Sign	Beta, standard error p-values
C		-2.1054** {0.52603} (0.0040)
VAT	-ve	0.10029* (0.02127) [0.0011]
PPT	-ve	-0.05409* (0.01874) [0.0180]
CIT	-ve	-0.05862 (0.03552) [0.1333]
PIT	-ve	-0.05499* (0.09955) [0.5941]
CED	-ve	0.2202* (0.06206) [0.0062]
EDUT	-ve	0.04837* (0.02306) [0.0653]
R^2		0.826
Adj R^2		0.711
S.E of regression		0.181
D.W		1.9

Source: Researchers compilation (2017).

The co-integrating equation is estimated using econometric methodologies, namely: fully modified ordinary least squares (FMOLS) of Phillips and Hansen (1990). FMOLS is attributed to Phillips and Hansen (1990) to provide optimal estimates of co-integrating regressions. FMOLS modifies least squares to explicate serial correlation effects and for the endogeneity in the regressors that arise from the existence of a cointegrating relationship. Hence the FMOLS estimates are free from serial correlation and endogeneity bias. As shown in table above, The R^2 of the model is

0.824 which is high implies that the model explains about 82.4% of the systematic variations in unemployment rates with an adjusted R^2 value of 70.7%. Commenting on the performance of the structural coefficients of the tax variables, the coefficient and p-values for VAT; 0.1003{0.0011}, reveals that VAT has a positive and significant impact on unemployment at 5% level. Specifically, the estimate suggests that a 10% increase in vat rate will impact unemployment by about 10.03%.

The coefficient and p-values of PPT; -0.05409{0.0180}, reveals that PPT has a negative impact on unemployment rate which suggest that increases in PPT will result in a decline in unemployment rate. Specifically, the estimate suggests that a 10% increase in PPT rate will reduce unemployment by about 5.4%.The coefficient and p-values of CIT, -0.0586{0.1333}, reveals that CIT has a negative effect on Unemployment at 5% level but this was not also significant at 5%. The coefficient and p-values of PIT, -0.05499{0.5941}, reveals that PIT has a negative effect on Unemployment rate and hence increases in PPT will result in a decline in unemployment rate though this effect is not significant at 5%. The coefficient and p-values of TET, 0.04837{0.0653}, reveals that TET has a positive effect on Unemployment rate and though this effect is not significant at 5%. The coefficient and p-values of CED; 0.2202{0.006}, reveals that CED has a positive impact on unemployment rate which suggest that increases in CED will result in a rise in unemployment rate. Specifically, the estimate suggests that a 10% increase in CED will increase unemployment by about 2.2%%

Discussion of Findings

In the course of this study we set out to investigate whether the different taxes collected by the Nigerian government (direct and indirect taxes) do have an effect on the rate of unemployment. We found partial support for the argument as some of the taxes were found to be significantly related to unemployment. Specifically we found value added tax and customs and excise duties (indirect taxes) positively related to unemployment while petroleum profit tax was negatively related to unemployment. The positive results for VAT and customs and excise duties could possibly be explained by the fact that despite the fact that government revenue increases with the

increase in VAT collected (Onwuchekwa & Aruwa, 2014; Saaed, Ahmad, & Zaman, 2012), this revenue has not translated to improved infrastructure which can encourage investments that provide jobs as a result of VAT revenue leakages. The inverse relationship between petroleum profit tax and unemployment can be as a result of the enormity of the revenue from this source, considering Nigeria is an oil producing nation, outweighing any inherent leakages in the system. The other variables examined: company income tax; personal income tax; and tertiary education tax had no effect on the unemployment rate. The result is at variance with the works of Vodopivec (2004) and Dolence and Laporsek (2012) that both show labour rate tax which can be likened to personal income tax worsening the unemployment situation.

5. CONCLUSION AND RECOMMENDATIONS

The implication of the study's findings is that considering taxes have been established to be useful in both developed and developing countries to finance essential services such as provision of pensions, health care benefits for disability and maternity, and compensation for work injuries for employees (Kugler & Kugler, 2001). There is need to ensure that taxes collected are judiciously used especially in this part of the world where accountability seems to be plaguing the entire system. When workers value the benefits financed through personal income tax for example as much as the contributions cost employers, changes in the personal income taxes will be fully shifted from firms to employees in the form of lower wages. In conclusion, we can say from the insignificant results observed on the relationship between personal income tax, companies income tax and the tertiary education tax and the positive results showing that VAT as well as custom duties increased the unemployment rate that the problem of unemployment in Nigeria cannot be addressed by increasing this taxes, but rather efforts should be focused on curbing corruption which poses the greatest danger to the management of government revenue for overall infrastructural development that could drive the creation of employment. We therefore recommend further studies to examine the moderating effect of corruption on the relationship between taxation and unemployment.

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