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DOES THE RELATIONSHIP BETWEEN GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH FOLLOW WAGNER'S LAW IN NIGERIA?

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ABSTRACT: *While previous studies to test Wagner's hypothesis for Nigeria used total government expenditure, this paper in addition to total government expenditure used a disaggregated government expenditure data from 1961 - 2007, specifically; expenditure on general administration and that of community and social services to determine the specific government expenditure that economic growth may have significant impact on. Economic conditions and policies change implying that it is not only economic growth that can affect government expenditure hence the inclusion of other fiscal policy variable and political freedom to augment the functional form of Wagner's law. All the variables used were found to be I(1) and long run relationship exist between the dependent and the independent variables except in the case where only GDP was used as the independent variable. Wagner's hypothesis does not hold in all the estimations rather Keynesian hypothesis was validated in all the estimation. Elasticity estimates and Granger causality results are in agreement.*

KEY WORDS: *Wagner law; Keynesian Hypothesis; Granger Causality and Cointegration*

JEL CLASSIFICATION: *H5, H11*

1. INTRODUCTION

Wagner's law is a principle named after the German economist Aldolph Wagner (1835-1917). The law predicts that the development of an industrial economy will be accompanied by an increased share of public expenditure in gross national product. Musgrave and Musgrave (1988) opined that as progressive nations industrialize, the share of the public sector in the national economy grows continually.

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Wagner identified three main factors for increased government spending. First, administrative and protective role of government will increase as a country's economy develops. Second, with the expansion of an economy, government expenditures on "cultural and welfare" would rise, particularly on education and health. He implicitly assumed that the income elasticity of demand for public goods is more than unity. Finally, progress in technology requires of developed nations requires government to undertake certain economic services for which private sector may shy away from (Khan, 1990).

While Wagner postulated that causality runs from national income to public expenditure, that is, there is tendency for public expenditure to grow relative to some national aggregates like gross domestic product, Keynes also associated with the link between public expenditure and growth posited that causality runs from public expenditure to income, implying that public expenditure is an exogenous factor and a public instrument for increasing national income. In the early 1960s, studies on Wagner's hypothesis were concentrated in the industrialized nations due to data availability. However, the developments in time-series econometric techniques and changing patterns of public expenditure growth in the late-twentieth century have reviewed research interest in Wagner's law which had hitherto declined in the late 1970s and early 1980s.

Using traditional econometrics techniques, many studies like (Peacock and Wiseman, 1967; Musgrave, 1969; Michas, 1975; Mann, 1980; Khan, 1990) have supported the law. As opined by Afzal and Abbas (2010), the empirical relevance of Wagner's law has been investigated and given unambiguous support by Oxley (1994), while Chletsos and Kollias (1997) argued that support for the Wagner's law could be found only for selected items of government expenditure.

Studies for Nigeria show that there is no consensus as regards Wagner's hypothesis. For example, empirical study by Aigbokhan (1996) found a bi- directional causality between government total expenditure and income, Essien (1997) used two step procedures of Engle and Granger and standard causality tests found no long run relationship between public spending and real income and no causality was established. Though, Aregbeyen (2006) confirmed the validity of Wagner's law in his study, Babatunde (undated) using a Bound Testing analysis found that Wagner law did not hold over the period studied (1970 - 2006) rather; he found a weak empirical support in Keynes's preposition.

The objective of this paper is to empirically investigate if government expenditure pattern in Nigeria follow Wagner's law using data from 1961 - 2007. This paper differs from previous studies for Nigeria because it uses a disaggregated data for government expenditure to test for Wagner's hypothesis as this will have some policy relevance.

For example, while previous studies for of this nature for Nigeria used total government expenditure to determine Wagner's law, this study uses in addition to total government expenditure, a disaggregated government expenditure data to determine the specific government expenditure that economic growth may determine. Second, the world is not static; hence economic conditions and policies change implying that it is not only government expenditure that can affect economic growth hence the inclusion other fiscal policy variable and political freedom to augment the functional form of Wagner's law. Section two considers literature review on version of Wagner's hypothesis, section three discusses econometric methods and results while section four concludes.

2. LITERATURE REVIEW ON VERSIONS OF WAGNER'S HYPOTHESIS

Different versions of Wagner hypothesis have been empirically investigated in functional forms since the 1960s as shown below.

$$GE = f(GDP) \quad \text{(i)}$$

Where GE is total government expenditure and GDP is gross domestic product. The first functional form above is popularly referred to as Peacock - Wiseman (1961) version of Wagner hypothesis. As cited in Halicioglu (2003), functional form (i) was also used in Musgrave (1969) as well as Goffman and Mahar (1971). A second functional form of the hypothesis shown below was initially used by Pryor (1968).

$$GCE = f(GDP) \quad \text{(ii)}$$

Where GCE is government consumption expenditure. Functional form (iii) below represents a modified version of Peacock - Wiseman (1961) version and this was also adopted by Mann (1980).

$$\frac{GE}{GDP} = f(GDP) \quad \text{(iii)}$$

$$GE = f(\frac{GDP}{N}) \quad \text{(iv)}$$

While functional form (iv) is linked to Goffman (1968), that of (v) below is linked to Gupta (1967) and also adopted by Michas (1975).

$$\frac{GE}{N} = f(\frac{GDP}{N}) \quad \text{(v)}$$

$$\frac{GE}{GDP} = f(\frac{GDP}{N}) \quad \text{(vi)}$$

Furthermore, the final functional form in (vi) above is Musgrave (1969) version which was also adopted by Ram (1986), Murthy (1993), Herekson (1993) and Halicioglu (2003). The major difference among the models is the measurement of government expenditure and economic output.

Halicioglu (2003) used data for 1960 - 2000 and found no support for empirical validity of Wagner's law in Turkey. Following Mann's (1980) study, Chang, Liu and Caudill (2004) used time series data for 1951 - 1996 for seven industrialized countries and three developing countries and found no causality between economic growth and government expenditure in either direction. Florio and Colautti (2005) analyzed the experience of five developed economies (USA, UK, Italy and Germany) for the period 1870 - 1990. They developed a model based on Wagner's law and found that the increase in public expenditure to national income ratio was faster for the period until the 20th century.

Dependra (2007) attempted to consider if Wagner's law holds for Thailand using recent advances in econometric technique, the Toda - Yamamota Granger causality test. The Author found no causality flowing from either direction between gross domestic product and government expenditure. The author concluded that there was no much evidence that Wagner's law holds for Thailand. Sideris (2007) also tested Wagner's law in the 19th century for Greece using cointegration and causality analysis. The author found support for Wagner's hypothesis in line with other empirical studies that examined the validity of the hypothesis in 19th century economies.

3. METHODOLOGY AND RESULTS

Using the functional form that relates the share of government expenditure in GDP with real gross domestic product, this can be written in log form as:

$$LGovExp_t = \beta_0 + \beta_1 LRGDP_t + \mu_t \qquad (1)$$

Where $LGovExp$ is log of total government capital expenditure, $LRGDP$ is log of real GDP proxy for economic growth, μ_t is the error term that satisfies the Classical regression assumptions and β_1 is a measure of elasticity. It is expected that $\beta_1 \succ 0$ therefore validating the Wagner's law hypothesis. Real GDP here equals GDP at (various base years) market prices less indirect taxes net of subsidies. Real GDP was compiled from 1960 - 1973 using 1962/1963 constant basic prices; 1984 - 1980 using 1977/1978 constant basic prices and 1981 - 2008 using 1990 constant basic prices. Murthy (1994) opined that the inclusion of additional variable that are important for economic development in the functional form of Wagner's law would reduce omitted variable(s) and misspecification biases. Since it is not only economic growth that affects public expenditure, particularly for a developing country (like Nigeria, the functional form can be re-modeled as:

$$LGovExp_t = \beta_0 + L\beta_1 RGDP_t + \beta_2 LEDO_t + \beta_3 POF_t + \beta_4 LTGR_t + \mu_t \qquad (2)$$

where all other variables are as earlier defined and L before a variable is the log of that variable:

$LEDO$ is log of public debt outstanding;
POF is political freedom;
$LTGR$ log of total government revenue

It is expected that $LEDO \prec 0$, $POF, LTGR \succ 0$

Domestic debt and external is a stock of liabilities with different tenure accumulated by government operations in the past and scheduled to be fully repaid by government in the future. It covers only recognized direct financial obligations of government of which government pays interest on redemption. The external debt figures used for the estimation are converted to Naira using annual average exchange rate of the particular year. Total government revenue is the summation of total federally collected revenue from oil and non-oil. Subsequently, the dependent variable is replaced with different categories of government capital expenditure on administration and expenditure on social and community services. The choice of these variables is as a result data availability. For example it is difficult to get time series data on government capital expenditure on infrastructure like roads, telecommunications, education and health among others. Only recurrent expenditures on the aforementioned are available. Expenditure by government is divided into two which are recurrent and capital expenditure. While recurrent expenditures are payments for transactions within one year, capital expenditures are payments for non financial assets used in production process for more than one year. Another important variable that affects government expenditure according to Musgrave and Musgrave (1988) is population changes which may lead to increase on public expenditure on education, security among others. However, data on population changes from 1960 to date for Nigeria is not common. Therefore, it was not used for the estimation. The subsequent equations to be estimated are:

$$LExpAd\min_t = \beta_0 + L\beta_1 RGDP_t + \beta_2 LEDO_t + \beta_3 POF_t + \beta_4 LTGR_t + \mu_t \quad (3)$$

$$LExpSCS_t = \beta_0 + L\beta_1 RGDP_t + \beta_2 LEDO_t + \beta_3 POF_t + \beta_4 LTGR_t + \mu_t \quad (4)$$

where:

$LExpAd\min$ is log of capital expenditure on administration;

$LExpSCS$ is log of capital expenditure on social community services.

Data on all the variables were extracted from Central Bank of Nigeria (2008) *Statistical Bulletin* Golden Jubilee Edition, December.

To establish the validity of Wagner's law, a three step procedure is applied here. First, to avoid any spurious relationship between government expenditure and economic growth, time series econometric methodology requires an analysis of the time series property of the variable in the regression equation using Augmented Dickey Fuller test (Dickey and Fuller, 1979). Second, we tested for possible cointegration among the variables involved using the Johansen (1988, 1995) maximum likelihood methodology and the third is to establish if there is causality between the variables using the pairwise Granger causality tests (Granger, 1986).

To test for stationarity of the data, a general form of Augmented Dickey Fuller (ADF) (Dickey and Fuller 1979, 1981) regression is formed below:

$$\Delta y_t = \beta y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta y_{t-i} + \phi + \lambda_t + \varepsilon_t \quad (5)$$

where Δy is the first difference of the series, m is the lag length, t is a time trend, ε_t is a white noise residual. The ADF test is carried out by using the null hypothesis as $H_0 : \alpha_2 = \alpha_3 = 0$. Practically, the lag length should be relatively small to save degrees of freedom and to be large enough to avoid the existence of autocorrelation in the residual.

The test for cointegration follows the Johansen and Juselius (1990, 1992) approaches. The two stage approach has received a great deal of attention because the long run equilibrium relationship can be modeled by a straight forward regression involving levels of the variable (Inder, 1993) as documented in Demirbas (1999). Unfortunately, it does not tell us the number of cointegration relationship. The Johansen and Juselius (1990, 1992) approach is based on the error correction representation of the VAR model with Gaussian errors. The VAR model according to Halicioglu (2003) is also closely related to cointegration. A general VAR model with the lag length, say, p can be expressed in VAR format as:

$$\Delta X_t = \Pi_0 + \Pi_1 \Delta X_{t-1} + \Pi_2 \Delta X_{t-2} + \ldots + \Pi_{P-1} \Delta X_{t-p+1} + \pi X_{t-p} + AZ_t + \upsilon_t \qquad (6)$$

where X_t represents m x 1 vector of $I(1)$ variables, Z_t stands for s x 1 vector of $I(0)$ variables, Πs are unknown parameters and υ_t is the error term. The hypothesis that π has a reduced rank $r \prec m$ is tested using the trace and the maximum eigenvalues test statistics.

Determination of causal direction became possible after a framework was developed by Granger (1969) and Sims (1972). The main issue here is that the past and present may cause the future but the future cannot cause the past (Granger, 1980). In a causality test, four findings are possible; when the sets of coefficient are not statistically significant, we say none of the variable Granger causes each other, meaning the variables are independence (no causality). On the other hand, there may be unidirectional causality meaning that X may Granger cause Y but not the other way round. It could also be the case where Y Granger causes X but not the other way round. Furthermore, X and Y may cause each other meaning that there is feedback effect (bidirectional causality). Granger causality test in a bivariate form is straight forward based on the following equation:

$$\Delta Y_t = \alpha + \sum_{i=1}^{m} \beta_i \Delta Y_{t-1} + \sum_{i=1}^{n} \gamma_i \Delta X_{t-1} + \varepsilon_t \qquad (7)$$

$$\Delta X_t = \phi + \sum_{i=1}^{p} \delta_i \Delta X_{t-1} + \sum_{i=1}^{q} \varphi_i \Delta Y_{t-1} + \mu_t \qquad (8)$$

where ε_t and μ_t are two uncorrelated white noise error term, m, n, p, q are the maximum number of lag length.

3.1. Elasticity Estimates

Table 1. Elasticity Estimates for Model 1 - 4

	Dependent Variable	Constant	Independent Variables				
			LRGDP	LED	POF	LTGR	R^2
Model 1	*LGovExp*	-2.95* (-7.52)	1.43* (17.67)	-	-	-	0.87
Model 2	*LGovExp*	-1.70* (-5.58)	0.51* (4.90)	-0.11 (-1.61)	-0.02 (-0.26)	0.81* (10.32)	0.86
Model 3	LExpAdmin	-1.38* (-4.73)	0.09 (0.88)	-0.15* (-2.21)	0.04 (0.45)	1.06* (4.73)	0.97
Model 4	LExpSCS	-4.24* (-9.53)	0.97* (6.39)	-0.48* (-4.58)	0.07 (0.52)	1.00* (8.66)	0.95

Figures in parentheses are t-statistic and * shows significance at 5%.

From model 1, the elasticity estimate shows the possibility of the existence of Wagner law for Nigeria for the period 1961 to 2007 since a positive relationship exists between total government expenditure and economic growth. In all the other models, with the inclusion of other variables, the possibility of Wagner law was also verified. Specifically, in model 2, all the independent variables met the *a priori* expectations except political freedom. In model 3 and model 4, when specific government expenditure was used (model 3, expenditure on public administration and model 4, expenditure on social and community services), it was found that the relationship between government expenditure and economic growth was also positive and all the other variables met the *a priori* expectation. The major problem here is that elasticity estimates are interpreted with caution because of possible autocorrelation problem (Afzal and Abbas, 2009).

Table 2. Unit Root Results

Variable	Intercept Only	Remark	Intercept and Trend	Remark
LRGDP	-4.909205* (-3.5850)	I(1)	-4.951517* (-4.1781)	I(1)
LTGR	-5.048184* (-3.5850)	I(1)	-5.119834* (-4.1781)	I(1)
LGovExp	-3.986744)* (-3.5850)	I(1)	-3.959265** (-3.5136)	I(1)
LEDO	-3.486573** (-2.9286)	I(1)	-3.551704** (-3.5136)	I(1)
LExpAdmin	-4.761088* (-3.5850)	I(1)	-4.715628* (-4.1781)	I(1)
LExpEcoser	-4.161242* (-3.5850)	I(1)	-4.105324)** (-3.5136)	I(1)
LnExpSCS	-4.483747* (-3.5850)	I(1)	-4.429634* (-4.1781)	I(1)

Figure in parenthesis are the critical value:
* 1% critical value
** 5% critical value.

The results show that the variables are non - stationary at level except at first difference. Therefore, all the variables used are I(1).

3.2. Cointegration Test

Table 3. Bivariate Cointegration Result for Model 1

Sample: 1961 2007
Included observations: 45
Series: LEXP LRGDP
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.232195	14.53900	19.96	24.60	None
0.057170	2.649128	9.24	12.97	At most 1

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. rejects any cointegration at 5% significance level

Table 4. Cointegration Result for Model 2

Sample: 1961 2007
Included observations: 45
Series: LEXP LEDO LRGDP LTGR POF
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.667710	90.64204	68.52	76.07	None **
0.421948	41.06343	47.21	54.46	At most 1
0.157991	16.39930	29.68	35.65	At most 2
0.137602	8.660908	15.41	20.04	At most 3
0.043454	1.999173	3.76	6.65	At most 4

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 1 cointegrating equation(s) at 5% significance level

The result for model 1, that is, using only total government expenditure and economic growth data shows the absence of cointegration relationship between the dependent and the independent variables even with the different test assumptions. On the other hand, model 2, model 3 and model 4 show the existence of one long run relationship each between the dependent variable and the independent variables with the inclusion of other variables in the independent variables and with the use of total and specific government expenditure in the model as shown in tables 4, 5 and 6 below.

Table 5. Model 3 Cointegration Results

Sample: 1961 2007
Included observations: 45
Test assumption: Linear deterministic trend in the data
Series: LEXPADMIN LRGDP LEDO POF LTGR
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.715523	89.50435	68.52	76.07	None **
0.296821	32.93470	47.21	54.46	At most 1
0.175477	17.08823	29.68	35.65	At most 2
0.149159	8.405480	15.41	20.04	At most 3
0.024943	1.136656	3.76	6.65	At most 4

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Table 6. Cointegration Result model 4

Sample: 1961 2007
Included observations: 45
Test assumption: Linear deterministic trend in the data
Series: LEXPSCS LRGDP LEDO POF LTGR
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.588157	74.56324	68.52	76.07	None *
0.338858	34.64317	47.21	54.46	At most 1
0.174396	16.02274	29.68	35.65	At most 2
0.144737	7.398954	15.41	20.04	At most 3
0.008043	0.363398	3.76	6.65	At most 4

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 1 cointegrating equation(s) at 5% significance level

3.3. Granger Causality

According to Wagner law, the share of public of public expenditure in national income will grow in size with the economic growth. Implying that it is increase in income that leads to an increasing magnitude of expenditure. Therefore, with Wagner's law it is expected that causality runs from national income or economic growth to public expenditure. On the contrary, Keynesian approach used macro econometrics approach to refute Wagner law; rather, he opined that public expenditure is considered as an exogenous policy instrument for aggregate demand management. That is, it is public expenditure growth that leads to economic growth.

Table 7. Bivariate Pairwise Granger Causality Results

Sample: 1961 2007
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
LRGDP does not Granger Cause LEXP	46	0.07711	0.78258
LEXP does not Granger Cause LRGDP		3.23585	0.07906

From the table above, we reject the null hypothesis that total government expenditure does not Granger causes economic growth. This implies that Keynesian hypothesis is validated rather than Wagner's law contrary to earlier results obtained by Essien (1997) and Aigbokhan (1996) for Nigeria.

Table 8. Total Gov Expenditure Granger Causality Result

Pairwise Granger Causality Tests
Sample: 1961 2007
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
LRGDP does not Granger Cause LEXP	46	0.07711	0.78258
LEXP does not Granger Cause LRGDP		3.23585	0.07906
LEDO does not Granger Cause LEXP	46	0.54698	0.46357
LEXP does not Granger Cause LEDO		0.32981	0.56876
POF does not Granger Cause LEXP	46	0.22003	0.64139
LEXP does not Granger Cause POF		1.80451	0.18622
LTGR does not Granger Cause LEXP	46	2.64511	0.11118
LEXP does not Granger Cause LTGR		1.89207	0.17609
LEDO does not Granger Cause LRGDP	46	1.6E-05	0.99686
LRGDP does not Granger Cause LEDO		7.67966	0.00822
POF does not Granger Cause LRGDP	46	0.30736	0.58218
LRGDP does not Granger Cause POF		1.35874	0.25018
LTGR does not Granger Cause LRGDP	46	0.70627	0.40533
LRGDP does not Granger Cause LTGR		0.15087	0.69962
POF does not Granger Cause LEDO	46	0.02028	0.88742
LEDO does not Granger Cause POF		1.06857	0.30705
LTGR does not Granger Cause LEDO	46	3.15210	0.08291
LEDO does not Granger Cause LTGR		5.68330	0.02161
LTGR does not Granger Cause POF	46	1.71863	0.19683
POF does not Granger Cause LTGR		0.21199	0.64753

Manning and Adriacanos (1993) have argued that in the absence of a cointegration relation between variables, it is still important to examine the short run relationship between them. According to Aregbeyen (2006), even though long run relationship between two macro variables may not be established for a given period of time, it is still possible for the variables to be causally related in the short run.

As shown in table 8, using total government expenditure as dependent variable, it was found that there is evidence of Keynesian hypothesis with causality running from total government expenditure to economic growth. It was also found that total government revenue Granger causes total government expenditure but not the other way round. Furthermore, using specific government expenditure, there was weak causality running from expenditure on administration to economic growth, implying Keynesian hypothesis and strong causality from expenditure on community and social services to economic growth as shown in tables 9 and 10.

Table 9. Multivariate Pairwise Granger Causality Tests: Expenditure on administration as dependent variable

Sample: 1961 2007
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
LRGDP does not Granger Cause LEXPADMIN	46	0.59036	0.44648
LEXPADMIN does not Granger Cause LRGDP		1.96161	0.16852
LEDO does not Granger Cause LEXPADMIN	46	4.17824	0.04710
LEXPADMIN does not Granger Cause LEDO		1.19934	0.27955
POF does not Granger Cause LEXPADMIN	46	0.72302	0.39986
LEXPADMIN does not Granger Cause POF		1.73813	0.19436
LTGR does not Granger Cause LEXPADMIN	46	10.7244	0.00209
LEXPADMIN does not Granger Cause LTGR		0.55993	0.45836
LEDO does not Granger Cause LRGDP	46	1.6E-05	0.99686
LRGDP does not Granger Cause LEDO		7.67966	0.00822
POF does not Granger Cause LRGDP	46	0.30736	0.58218
LRGDP does not Granger Cause POF		1.35874	0.25018
LTGR does not Granger Cause LRGDP	46	0.70627	0.40533
LRGDP does not Granger Cause LTGR		0.15087	0.69962
POF does not Granger Cause LEDO	46	0.02028	0.88742
LEDO does not Granger Cause POF		1.06857	0.30705
LTGR does not Granger Cause LEDO	46	3.15210	0.08291
LEDO does not Granger Cause LTGR		5.68330	0.02161
LTGR does not Granger Cause POF	46	1.71863	0.19683
POF does not Granger Cause LTGR		0.21199	0.64753

Table 10. Multivariate Pairwise Granger Causality Tests: Expenditure on social and community services as dependent variable

Sample: 1961 2007
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
LRGDP does not Granger Cause LEXPSCS	46	0.84878	0.36204
LEXPSCS does not Granger Cause LRGDP		4.62966	0.03708
LEDO does not Granger Cause LEXPSCS	46	1.87061	0.17851
LEXPSCS does not Granger Cause LEDO		0.59614	0.44428
POF does not Granger Cause LEXPSCS	46	0.22034	0.64115
LEXPSCS does not Granger Cause POF		2.16209	0.14873
LTGR does not Granger Cause LEXPSCS	46	4.56902	0.03828
LEXPSCS does not Granger Cause LTGR		0.02837	0.86703
LEDO does not Granger Cause LRGDP	46	1.6E-05	0.99686
LRGDP does not Granger Cause LEDO		7.67966	0.00822
POF does not Granger Cause LRGDP	46	0.30736	0.58218
LRGDP does not Granger Cause POF		1.35874	0.25018
LTGR does not Granger Cause LRGDP	46	0.70627	0.40533
LRGDP does not Granger Cause LTGR		0.15087	0.69962
POF does not Granger Cause LEDO	46	0.02028	0.88742
LEDO does not Granger Cause POF		1.06857	0.30705
LTGR does not Granger Cause LEDO	46	3.15210	0.08291
LEDO does not Granger Cause LTGR		5.68330	0.02161
LTGR does not Granger Cause POF	46	1.71863	0.19683
POF does not Granger Cause LTGR		0.21199	0.64753

4. CONCLUSION AND POLICY IMPLICATION OF RESULTS

Using total government expenditure as well as specific expenditure of government as the dependent variables, it was found that Wagner's law was not validated even with the inclusion of other fiscal policy variables in the other models. The implication of the result is that since it is increase in total government expenditure as well as specific expenditure on general administration and community and social services that causes economic growth, it is recommended that policy makers should always increase total expenditure as well as that of specific expenditure as this will not hurt economic growth, rather it will propel economic growth in Nigeria.

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