



WAGNER'S LAW IN NIGERIA: AN INVESTIGATION USING NIGERIA'S TIME SERIES DATA

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ABSTRACT

This study empirically examines the relationship between government expenditure and national income (GDP) by fitting the Wagner's law. The study sourced its data from the Central Bank of Nigeria's statistical bulletin 2018, and the annual frequency spanned from 1982 to 2018. The study first, examines the stochastic properties of the variables through Augmented Dickey Fuller (ADF) test, and the result reveals that the two series are stationary at level, which implies the existence long run information of each variable. The long run relationship between the two variables has been examined through regression model. The result of the model reveals that government expenditure is significant in explaining GDP, this implies that government expenditure and GDP has a statistically significant long run relationship, and thus, concluded in support of the validity of Wagner's law for the Nigerian economy.

1.0 INTRODUCTION

Wagner's law has been the challenge of intensive and giant investigations, start at some stage in the post 2nd world battle era, while public consumption declined in want of the private sports development. The above law is of the perception that there's a long-run tendency for government sport to develop relative to economic activity (Wagner, 1890). More specifically; the law states that, during the technique of financial development, as the real wage in step with capita of a country increases, the percentage of public expenditures in all financial activities increases. Thus, higher levels of monetary growth require higher degrees of public expenditure. Wagner stated that during the industrialization method, as actual earnings according to capita of a kingdom increases, the percentage of public fees in overall gross domestic

product increases. According by way of him, three main motive said this hypothesis: (1) at some stage in industrialization, the executive and regulatory functions of the state might replacement public for personal activity; (2) financial growth may happen as a result in increased want for cultural and welfare services, which might be assumed to be income elastic; (3) nation participation might be inevitable to offer the capital finances to finance large-scale projects made to fulfill the technological desires of an industrialized society, where personal region lacks the capacity. In other words, Wagner's regulation states that government grows because there is an increasing call for public goods and to manipulate of externalities. In effect, the regulation also suggests that causality runs from national profits to public consumption, indicating that public expenditure is considered as endogenous to the



boom of national profits. Wagner's law relies on a simple nice correlation between a nation's gross domestic product (GDP) and government size (G). This has generated exceptional interpretations leading to introduction and empirical exam of several versions of the law because the 1960s (Ferda, 2003). Several commentators on Wagner's Law (see e.G. Musgrave, 1969) have claimed that it's miles unclear whether the law of expanding scale relates to the proportion of government in national income or just to the absolute level of government.

2.0 LITERATURE REVIEW

One of the often quoted stylized statistics of public quarter economics is that of "Wagner's Law" about the long-run tendency for public expenditure to develop relative to some national profits combination along with GDP. This implies that public expenditure can be treated as an outcome, or an endogenous issue, rather than a purpose of growth in national earnings. On the other hand, Keynesian propositions deal with public expenditure as an exogenous factor, which can be applied as a policy device. In the former approach, the causality runs from national profits to public expenditure whereas within the latter proposition, causality runs from public expenditure via home call for to national income (Afonso and Furceri, 2008). Moreover, Barro (1990) mentions the importance of government expenditure in public infrastructure for economic growth and Romer (1990) point the relevance of research and improvement expenditure. Therefore, composition of public spending is likewise a applicable issue, and if the purpose is to promote growth, the focus have to be put on the extra productive gadgets of the price range, even though the balance between the diverse functional items of the finances can change according with us of a specifics. The fundamental thrust of Wagner's law is that the relative length of the public zone inside the economy (G/DGP) has a tendency to grow as per capita earnings (GDP/POP) increases. It is fair to mention on balance that most of the time collection studies have located the ratio-income-elasticity coefficients to be tremendous and statistically vast, with the aid of the usage of $G/GDP + \alpha + \beta GDP/POP + \mu_i$ ----- Thus, Wagner's regulation has been validated, particularly for nations in the procedure of transition from Rural-Agricultural to an Urban Industrial one (Nagarajan and Spear, 1977) Wagner's law has been tested empirically in time-series and cross-sectional frameworks and, with few exceptions, the regulation has received strong help. In empirical analyses, country-specific research are often used: for example, Henrekson (1993) for Sweden, Ashworth (1995) for the UK, Hondroyiannis

and Papapetrou (1995) for Greece, Nomura (1995) for Japan and Park (1996) for South Korea. Cross-u .S .A .research have also become pretty popular, thus, Ram (1987) includes a hundred and fifteen nations, Bohl (1996) investigates the G-7 international locations and Anwar et al. (1996) examine 88 nations. In addition to aggregate analyses, disaggregating of information is also referred to in empirical studies of Wagner's regulation. See, Bairam (1995), Asseery et al. (1999) and Burney (2002). There had been also a few empirical studies referring to Wagner's Law for Turkey. Krzyzaniak (1974) carried out a take a look at of Turkey for the period from 1950 to 1969. After regressing public expenditure on GNP he located statistically good sized estimates of the income elasticity of public expenditure with reference to GNP which appear to support Wagner's Law. Önder (1974) conducted observe of public expenditure boom in Turkey for the duration 1947- 1967. Using combination variables (in overall and in in step with capita terms), he found the earnings elasticity of public expenditure with regard to GNP (or GNP in line with capita) to be smaller than unity. These outcomes appear to undermine Wagner's Law (with mixture records) for the take a look at duration. In a recent have a look at, Yalçın (1987) also observed that using combination records, her findings did not help the validity of Wagner's Law. Sideris (2007) empirically investigated the long-run tendency for authorities' expenditure to develop relative to national income, Wagner's regulation, the usage of Greek statistics for the period 1833 – 1938. The results gotten support for the validity of the law, and are in line with other research inspecting the connection among government spending and national earnings in different economies at some stage in the 19th century. Granger causality check simply going for walks from the variables approximating earnings to the authority's expenditure variable. In effect, the outcomes of the observe guide the validity of Wagner's Law for Greece. However, Babatunde (2008) assessments Wagner's Law for Nigeria the use of annual time series statistics among 1970 and 2006. It adopts the Bounds Test method proposed with the aid of Pesaran et al. (2001) based totally on Unrestricted Error Correction Model and Toda and Yamamoto's (1995) Granger non-causality exams. Empirical consequences from the Bounds Test suggest that there exists no long-run relationship between government expenditure and output in Nigeria. In addition, the Toda and Yamamoto's (1995) causality check consequences display that Wagner's Law does now not keep for over the period being tested. Rather they found a weak empirical aid within the proposition by means of Keynes that public expenditure is an exogenous aspect and a policy tool for increasing



national earnings. Although there are a few studies of public expenditure increase in the Nigerian public finance literature, as mentioned above, in the present contribution, we intend to employ facts spanning via 1950 – 2008 and econometric methodologies that has gained great currency to test for the presence of Wagner’s Law in Nigerian economy each for the purpose of providing further empirical literature for Nigeria and enquiry into existing results in this direction. More so, a look at of the relationship among Government expenditure and national profits is worthwhile and receive increasing attention from researchers both in public finance literature and within the literature coping with macroeconomic modeling (Cheong, 2001). Attestable thesis within the present contribution is whether economic development promotes Government length in Nigeria.

3.0 METHODOLOGY

3.1 Data and Source

The variables used in this analysis are government expenditure and GDP at current prices. All the series are in Billion Naira. The two series are sourced from the Central Bank of Nigeria’s statistical bulletin 2018.

3.2 Model

A regression analysis is used to achieve the objective of this study. Below is the specification of the regression model

Y = beta_1 + beta_2 X_t + et(1)

Where Y is the dependent variable and B1 and B2 are the intercept and slope respectively. Xt is the independent variable while et is the error term which is independently and identically distributed with stochastic mean and a constant variance. Equation (1) can be re-written as:

GDP = beta_1 + beta_2 EXP + et (2)

Where GDP is the dependent variable and EXP is the independent variable. Similarly, B1 measures the mean value of the relation.

4.0 RESULT AND DISCUSSION

Table 1: Augmented Dickey Fuller unit-root Test

Table with 3 columns: Variables, Level, Decision. Rows for GDP and Expenditure.

*Indicates stationarity at 1% level of significance

Table 1 presents the result of unit-root test conducted using Augmented Dickey Fuller Test (ADF). The main idea behind the unit-root testing is to find out the stochastic properties of each series. That is, mean, variance and co-variance need to be constant for us to have stationary process. When the stochastic properties

(Mean, Variance and co-variance of a series) fail to satisfy the above conditions, then we will go for testing of the unit-root at first difference. However, the result shows that all the two variables are level stationary at 1 percent level of significance, hence our variables have long run information.

Table 2: A Regression Analysis: GDP(Dependent Variable)

Table with 5 columns: Variable, Coeffi., Std. Error, t-Statistic, Prob. Rows for C and EXP.

u/Table 2 presents a regression analysis conducted between GDP as dependent variable and Expenditure as independent variable. The main reason for regressing the two series is to test the validity of a Wagner’s law of public finance to the Nigerian

economy. The law linked to the German economist Adolph Wagner’s (1835-1917), who asserts the presence of a long run positive relationship between government’s total expenditure and a national income, in other words, total expenditure of the



nation rises constantly as the national income expands. The result shows that 1 billion Naira increase in government expenditure in Nigeria, will lead to 14.95 Billion Naira increase in GDP. This implies that, Wagner's law is applicable and valid for Nigerian economy.

5.0 CONCLUSION

This study empirically examines the relationship between GDP and Expenditure by fitting the Wagner's law. The reveals that, there is long run positive relationship between the two series and hence the study concludes by lending a support to the validity of the law to the Nigerian economy.

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