



## IMPACT OF PUBLIC FINANCING OF PENSION AND GRATUITY ON NIGERIAN ECONOMY (1981-2016)

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**Abstract:** *The main objective of this study is to investigate the impact of government pension funding on economic growth in Nigeria. For this purpose, real GDP, government expenditure on pension, corruption perception index and pension reform dummy variables are used in this study. The OLS technique of analysis was adopted with the application of the ADF unit root test method and the residual based co-integration. The unit root test results reveal that all the variables used in this study are found to be integrated at an order one  $I(1)$ . The variables exhibited no long run equilibrium relationship; thus, the level form (long-run) analysis was used. The long run estimated results reveal that government expenditure on pension and gratuity has significant impact on economic growth. Based on our findings, we conclude that government expenditure on pension has a significant effect on economic growth in Nigeria.*

**Keywords:** *Economic growth, Government Pension funding, OLS and Corruption.*

### Introduction

The best investment any state government can do to achieve public service excellence is prioritizing the welfare of its employees. Employees in public service remain the biggest asset of any government for quality service delivery, economic growth and good governance. Prompt and regular payments of salaries are very important for the employee, but what is more important is the future plans for pensions, and how retirees of such State are treated. It does not only give employees rest of mind, it motivates them to work harder, shun corruption because they are sure of a guaranteed future. This is the reason behind pension and gratuity schemes.

Pension funds may be defined as forms of institutional investor, which collect pool and invest funds contributed by sponsors and beneficiaries to provide for the future pension entitlements of beneficiaries, (Tirimba, 2013). In Nigeria, pension issues are connected to many areas of economic and social issues, thus making efforts to repeal them a difficult task to undertake. The pension program was borne out of a desire to help households achieve an allocation of life resources by smoothing consumption over lifespan, thus providing payment that ensures that a retiree's standard of living is not much different from what obtained in the period immediately preceding his retirement (Ime and Mfon, 2013).

This takes the form of the transfer of resources from one's active life to non-active retirement period when income dries up (Modigliani and Muralidhar, 2004).

Reischauer (1988) in Ugwoke and Ogoegbunam (2013) stated that the primary reasons for a state to provide a pension scheme is the belief that many citizens lack foresight, thus missing out from the information necessary to enable them accumulate adequate resources for retirement. More so, there is the lack of an organised and well planned insurance markets owing to informal deficiencies and capital markets that put annuities beyond the reach of the average man. Moreover, among the low income group, their lifetime incomes may be too low to cover minimally adequate consumption levels during their retirement as well as their working years. These reasons prompted the government involvement in the provision of retirement benefits in the form of an occupational pension program. The reason for such program is to provide employees regular and stable income after they have left service.

Pension fund is usually provided by either the employer or from both the employer and employee. The importance of a good pension scheme are many, aside from providing retirement benefits, it also serves as an incentive to

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employees as well as aiding to attract and retain experienced staff (Clark, 2004).

In the light of this, a Pension Reform Act was passed in Nigeria in 2004. The reform shifted employees to a defined contribution plan from the existing non-contributory defined benefit scheme, thereby shifting the risk of retirement financing from government to individuals. This new scheme is known as the contributory pension scheme. It is therefore conceivable that introduction of the contributory pension scheme would serve as a tool towards realization of the goal of savings mobilization, which can lead to financial deepening and capital market development, thereby fostering economic growth in Nigeria. In addition, funded pension scheme can also reduce government expenditure, thereby releasing funds to direct key policy challenges and initiatives. However, this old pension system Nigeria left is still practiced in other countries of the world. The argument is whether the old government funding of the pension scheme does not have any impact on the growth of the economy. This is against the trust that the growth of pension funds has emerged as a pioneer intermediary that is capable of controlling the country's GDP. This forms the major objective for this study, which aims at examining the impact of the public finance of pension scheme on economic growth in Nigeria from 1981-2016. This study is beneficial at this time when arguments are strong that the government funded pension scheme did not have any impact on the economy, due to high level of corruption involved. Studies have ignored this line of research, which is to examine the impact of public funded pension scheme on the Nigerian economy.

#### **Objective of the Study**

To examine the impact of the public finance of pension scheme on economic growth in Nigeria.

#### **Hypothesis of the Study**

Ho: Government financing of the pension scheme has no significant impact on economic growth in Nigeria.

#### **Review of Related Literature**

##### **Theoretical Framework**

This study is based on three theoretical frameworks namely: Wagner's law of increasing activities, Concentration theory and Endogenous growth theory.

Wagner's law of increasing activities stated that as per capita income of an economy grows, there will be increase in the number of urban centers with the associated social vices such

as crime which requires the intervention of the government to maintain law and order. These interventions by government have lots of implications leading to increase in government expenditures including pension transfers etc. According to Wagner (1935), there are inherent tendencies for the activities of different layers of a government (such as central and state governments) to increase both intensively and extensively. There is a functional relationship between the growths of an economy and expenditure. Considering the original version of this theory, it is not clear whether Wagner was referring to an increase in: Absolute level of public expenditure; the ratio of government expenditure to Gross National Product and proportion of public sector in the total economy.

Concentration theory and Endogenous growth: Concentration theory explains how few relatively large Pension custodians and Pension fund administrators can use their market power to improve the intermediation efficiency of banks( especially their parent company ) through economies of scale, cost reduction and reduction in credit risk. On the other hand, the endogenous growth theory offers useful link through which pooled retirement savings account (deposits/net savers) held by banks are channeled to productive investments as required by regulators (through asset creation activities) for economic growth and development.

#### **Empirical Review**

Researchers have carried out studies on impact of pension scheme to economic growth and development in several countries. Hu (2005) empirically examined Pension reform, economic growth and financial development across OECD countries and emerging market economies. The study used panel data analysis to find a negative relationship in the short run and a positive relationship in the long run, although the results for OECD countries are not very statistically robust. Another empirical test focused on pension fund assets and economic growth. A positive relationship between these two variables is found by the standard economic growth specifications; in addition, evidence exists that pensions are good predictor of economic growth. The panel Granger causality test corroborated with this result. The final test deals with the relationship between pension assets and financial development. Thus, the panel correction model and panel Granger causality test suggest that pension fund growth



leads to financial development, although some sub group estimations are not strong.

Nwanne (2015) examined the impact of contributory pension scheme on economic growth in Nigeria for the period (2004 – 2012). The study used Ex –post – facto research design and ordinary least square regression method to analyze the data. The study reveals that pension funds have negative and significant impact on economic growth, while pension savings had positive and significant impact on economic growth.

Edogbanya (2013) did a study on assessment of the impact of contributory pension scheme to Nigerian economic development for the period (2007 – 2010). The study used survey research design, and sample size of 30 and 70 for both staff and customers (Retirement savings account holders). The research adopted correlation analysis for testing secondary data and ANOVA for the primary data. The result of correlation analysis using t – test revealed that contributory pension scheme has significant impact on the Gross Domestic Product; while the result of ANOVA depicted that risk prevalent has positive effect on the pension fund management.

Nyong and Duze (2011) carried out a study on the Pension Reform Act 2004 and retirement planning in Nigeria. The study used survey research design and a multi –stage random sampling technique to select the sample size of 3000 from the population of serving teachers and teacher pensioners in Federal and state Public Secondary Schools between the ages of 55 and 59 years. The results revealed that the objectives of Pension Reform Act 2004 were yet to be achieved since retired persons still suffered trauma, pains and even death before they received their pension packages. The study recommended e – payment of pensions to ensure easy referencing, easy update and logistics of pension scheme system.

Ijeoma & Nwifo (2015) examined Sustainability of the Contributory Pension Scheme in Nigeria for the period (2004 – 2012). The study used survey research design, and sample size 24 Pension Fund Administrators as at 31<sup>st</sup> December, 2013. The questionnaire were administered on 15 Pension Funds Administrators on the basis of top 15 Administrators using parameter of highest to lowest Retirement savings accounts registration and the questionnaire were duly completed and returned. The study equally used secondary

source of data collections. The statistical tools employed in the data analysis include the simple regression analysis, the Kruskal – Wallis test and the Cronbach Alpha reliability. The result of this study found that there exists a strong positive linear relationship between the contributory pension expenditure and the gross domestic product in Nigeria. Also found was that the contributory pension scheme has significantly impacted the development of the Nigeria Capital market.

Gunu and Tsado (2012) studied contributory pension system as a tool for economic growth in Nigeria. The study used descriptive statistics, percentages and charts to analyze data gathered. Their results depicted that the contributory pension scheme has started to contribute to increase in growth of the Nigerian capital market and economic growth.

#### **Methodology**

##### **Research Design**

The study will use the *Ex Post Facto* Research Design. This is necessary because the study will use existing data to predict future outcomes. The study will make use of econometrics research design for addressing the objectives of the study. The researcher adopted the multiple regression analysis based on the classical linear regression model, otherwise known as Ordinary Least Square (OLS) technique to analyze the objectives.

##### **Model Specification**

For the econometrics model, the specification of the model is based on the empirical work of Achimugu, Ocheni & Akubo (2015). The data is a time series secondary data showing aggregate data for the Nigerian economy sourced from the 2016 CBN bulletin. Real GDP is the dependent variable while government expenditure on pension, dummy variable for pre and post pension scheme reform periods which previous studies did not use, corruption perception index are the independent variables. The model is stated below; Thus, the functional model was formulated and this is given as follows:

$$RGDP = f(GEXPEN, CPI, PRD) \quad i$$

Where:

RGDP = Real Gross Domestic Product

CPI = Corruption Perception Index

PRD = Pension Reform Dummy- 1981 -2003 = 0 and 2004-2016 = 1.



Estimation Equation from functional model was generated thus:

$$RGDP_t = \delta_0 + \delta_1 GEXPEN_t + \delta_2 CPI_t + \delta_3 PRD_t + \epsilon_t$$

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Equation (ii) above serves as the estimable equation, where all coefficients of the variables are as defined:

Where:  $\delta_0$ ,  $\delta_1$ ,  $\delta_2$ , and  $\delta_3$ , are the parameter estimates of constant term and regressors to be estimated.

**The A priori Expectation**

An a priori expectation is a theoretical statement or criteria set by economic theory. For this study, Corruption Perception Index (CPI) proxied for the level of corruption is expected to be negatively related to RGDP, while GEXPEN and Reform dummy are positively related to RGDP. This means that the parameter estimates are to be:

$$\delta_1 > 0, \delta_2 < 0, \text{ and } \delta_3 > 0.$$

**Estimation Techniques**

This study adopted quantitative mechanics of data analysis. First, The Augmented Dickey-Fuller (ADF) test was conducted for stationarity i.e. to determine the order of

**Table 1 Augmented Dickey-Fuller (ADF) tests at Level**

Variables	Test Statistics					Conclusion
	Levels		First Difference			
	ADF	5%	ADF	5%	Status	
CPI	-3.456914	-3.548490	-5.017570	-1.91000	I(1)	Stationary
RGDP	0.483198	-1.950687	-3.646342	-1.951000	I(1)	Stationary
GEXPEN	0.559261	-1.950687	-5.334627	-1.951000	I(1)	Stationary
PRD	0.0000	-1.950687	-5.830952	-2.951125	I(1)	Stationary

Source: Authors' E-views Output, 2019.

\* connotes stationary at both 5%

From table 1, it could be observed that ADF test give us the result that all variables are non-stationary at levels, that is, there is existence of unit root in the data. Contrarily, when taking the 1<sup>st</sup> difference of the data all variables are integrated of order one I (1). This means that they (variables) are stationary at 1<sup>st</sup> difference which satisfies the condition for Engel-Granger cointegration application.

**Test for Engel-Granger Cointegration Analysis**

integration as well as satisfying the economy theory which says certain variables must be integrated, random walk or martingale process. The rule of thumb for unit root tests is that t-statistics must be greater than the critical values for stationarity to be attained. This could be realized at level 'I (0)' or at 1<sup>st</sup> difference 'I (1)' of the data. Following this, a cointegration test was conducted to ascertain if the time series variables have a long-term or equilibrium relationship among them.

**Result Analysis and Interpretation**

In a bid to establish the existence or non-existence of an equilibrium relationship among variables in our model, we must first ascertain whether the variables are integrated to the same order, to achieve this, the following stationarity tests were undertaken:

Null Hypothesis: RESID01 has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=0)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.516634	0.1203
Test critical values: 1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	



\*MacKinnon (1996) one-sided p-values.

**Source: Authors' E-views Output, 2019.**

A test for the long-run relationship among economic variables with the use of two-test procedure proposed by Engle-Granger was employed here. The test result above show that there is no cointegration among the variables, thus, the interpretation of the long run regression is shown below.

**OLS Results with interpretations**

Long-run relationship of the variables using OLS was presented below:

Dependent Variable: RGDP

Method: Least Squares

Date: 22/08/19 Time: 10:02

Sample: 1981 2016

Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16280170	1123499.	14.49060	0.0000
GEXPEN	177.1367	31.29818	5.659650	0.0000
CPI	-431102.3	137858.4	-3.127139	0.0037
PRD	1616043.	4087344.	0.395377	0.6952
R-squared	0.942242	Mean dependent var		31757148
Adjusted R-squared	0.936828	S.D. dependent var		18151714
S.E. of regression	4562274.	Akaike info criterion		33.60898
Sum squared resid	6.66E+14	Schwarz criterion		33.78493
Log likelihood	-600.9616	Hannan-Quinn criter.		33.67039
F-statistic	174.0131	Durbin-Watson stat		1.771677
Prob(F-statistic)	0.000000			

**Source: Authors' E-views Output, 2019.**

The result of the regression presented above shows the effect of government funded pension and corruption on economic growth in Nigeria. The explanatory variables include government expenditure on pension, corruption perception index, and pension reform dummy. Looking at the signs and values of the coefficients of these variables to ascertain the relationship among both explained variable and predictor variables, it was discovered that the positive value of GEXPEN connotes an increase in RGDP resulting from a

increase in government expenditure. This implies that an increase in government pension expenditure, other things being equal, will induce an increase of RGDP by 177 units.

Similarly, a decrease in GDP owing to increase in corruption level, will motivate an increase in RGDP by 431102. This is because base on the 5% significant level So also, the probability value of corruption perception index is significant and less than 5% level. The sign of the pension reform dummy is positive but not significant, implying that the reform in the pension scheme will have a positive effect on RGDP

Thus, assessing the significance of the parameter estimates and the explanatory variables using the t-statistics and p-values, we discovered that only two explanatory variables; GEXPEN and CPI have statistical significance on RGDP. The adjusted R<sup>2</sup> of 0.94 demonstrates a high explanatory power of the model. This means that 94% deviance in RGDP is as a result of deviance in all the included explanatory variables in the model. This point to the reality that Nigeria's corruption rankings and government spending determine to a large extent the level of economic growth and development. The DW statistic discloses the possibility of a serial correlation in the equation to be low because its value is near 2.

**Conclusion and Recommendations**

The main objective of this study is to investigate the impact of government pension funding on economic growth in Nigeria. For this purpose real GDP, government expenditure on pension, corruption perception index and pension reform dummy variables are used in this study. The OLS technique of analysis was adopted with the application of the ADF unit root test method and the residual based cointegration. The unit root test results reveal that all the variables used in this study are found to be integrated at an order one I(1). The variables exhibited no long run equilibrium relationship; thus, the level form (long-run) analysis was used. The long run estimated results reveal that government expenditure on pension and corruption has significant impact on economic growth.

Based on our findings, we conclude that government expenditure on pension was having effect on economic growth in Nigeria. The major challenge is corruption. Corruption in Nigeria is destructive and costing the nation so



much and has made growth and development a mirage. The consequences are also on the increasing side.

Therefore, in an attempt to improve its desired and required esteem and ensure an atmosphere conducive for rapid economic and political change, Nigeria must look inward in tackling the menace that has been a stumbling block for the country's pension program. This is important so that the reforms which have surrounded the pension scheme will not be efficient if the fight against corruption is not sincere.

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