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EFFECT OF FEDERAL GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA

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Purpose. This study presents an evaluation of the effect of federal government expenditure on economic growth in Nigeria during the period 1986–2020. Economic growth in Nigeria over the years (precisely from 1986 when the Structural Adjustment Programme was introduced) is not in tandem with the magnificent rise in total government expenditure covering this period. The citizens have seen leadership in Nigeria as a failed litmus test, some have left the country to seek for "greener pastures" abroad. Specifically, this study examined the effect of recurrent and capital expenditure of the government on real gross domestic product, gross fixed capital formation, savings, and manufacturing capacity utilization.

Results. The result of the analysis revealed that government recurrent expenditure has significant effect on real gross domestic product, gross fixed capital formation, and savings. Government recurrent expenditure is negatively related with real gross domestic product, gross fixed capital formation, savings, and manufacturing capacity utilization. Similarly, government capital has positive relationship with gross fixed capital formation and manufacturing capacity utilization, whereas it is negatively related with real gross domestic product and savings.

Scientific novelty. The review of previous studies on economic growth is majorly measured using real gross domestic product. However, this study takes a new dimension by introducing three other variables: gross fixed capital formation, savings, and manufacturing capacity utilization which also reflect the level of growth in an economy. In addition, the application of the Auto-Regressive Distributive Lag (ARDL) model which takes into consideration of the different order of integration of time series data as against the Johansen co-integration that characterized previous studies in the Nigeria environment, will robustly help in determining the short run and long run effects of Federal Government expenditure on economic growth fundamentals in Nigeria.

Practical value. This study therefore, is re-echoing the need for government to make capital

expenditure her priority. By this, the government should allocate at least 50.0 % of her total expenditure on capital projects. The present-day practice of allocating only 16.6 % (based on year 2020 approved budget of the Federal Government) for capital expenditure will not to a great extent accelerate the pace of economic growth and development in Nigeria.
Key words: government expenditure, economic growth, Nigeria.

Introduction. The relationship between government expenditure and economic growth has unarguably been a topic of interest among scholars in the field of public finance. Expenditure pattern of governments have been documented to be pivotal in growth and development of the economy with special reference to emerging economies due to liquidity constraints owing to developing nature of the financial system, and more importantly, the capital market which pools huge long-term fund from surplus to deficit segments of the economy. There has been a general belief that Nigerian economic policies has a tremendous influences on the effect of federal government expenditure on economic growth in Nigeria. But the reality on ground has led the policy makers to be divided as to whether the expansion of government expenditure promotes or impedes economy growth. However, in most of the previous studies, Onifade, Savas, & Bekun (2020) were of view that there exist no consensus as to whether government expenditure leads to economy growth as their results, evidences, differ by countries/regions, analytical methods employed and the categorization on public expenditure which therefore make relevance of this study, as the level of inconsistences in their findings stand as a gap that needs to be filled.

According to Jeff-Anyeneh (2018), government expenditure is normally divided into two: recurrent expenditure are expenditures normally for the day to day running of government activities, while capital expenditures are expenditures meant for productive economic activities capable of creating employment, reducing poverty level and increasing labour productivity among others. In Nurudeen & Usman (2010), it was observed that rising government expenditures has not been translated into meaningful development as Nigeria still ranks amongst world's poorest countries. Using disaggregated analysis approach, they investigated the effect of government expenditure on economic growth and found that government total capital expenditure, total recurrent expenditure and government expenditure on education have negative effect on economic growth, but rising government expenditure on transportation, communication and health exerts positive effect on economic growth. Udoka & Anyingang (2015) attribute the underdeveloped nature of the economy to either funds allocated for expenditure are not promptly released or they are released to finance inappropriate expenditure items or possibly, maybe the funds are mismanaged or not duly utilized.

From the standpoint of the Keynesian assumption, government expenditure is an exogenous factor that is growth inducing due to its expansionary effect that would lead to increase in employment, income and output and via its multiplier tendency, aggregate demand is tremendously affected. The expenditure of the Federal Government of Nigeria is an integral part of fiscal policy which influences economic

activities thus, shaping and improving the welfare of citizens (Adigwe et al., 2016). The effect of government expenditure on growth of the economy depends on sectoral allocation of expenditure. Increased government expenditure can have positive macroeconomic effects on the long run if it is used to finance extra capital spending that leads to an increase in the stock of national assets (Nwakoby et al., 2016). Investments on health can lead to an increase in labour productivity, thus increase in incomes and subsequent increase in the wellbeing of the population (Piabuoand & Tieguhong, 2017). Consistent with Adigwe et al. (2016) government expenditure on basic infrastructure such as road networks, rail system and others positively affect the productive capacity of the economy on the long run.

Lwanga & Mawejje as cited in Nwakoby et al. (2016) noted that wasteful spending such as excessive government expenditure on official travels and conferences might not contribute much to the growth and development of the economy. On the Keynesian argument, the negative reverberation in the economy consequent to market imperfections driven by private sector control can be vehemently and efficiently addressed through government expenditure. That notwithstanding, allocations of public expenditure with lack of consideration for the urgent needs of the country may endanger greater distortion in the economy which may be detrimental to growth (Aschenke, 2014). In every fiscal year, each sector of the economy demands more budgetary allocation from the Federal Government because of rising sectoral responsibilities as a result of high demand for public goods which inevitably cannot be efficiently provided by the private sector. Besides, provision of such public goods by private individuals would in no small measure lead to exploitation and increasing the gap between the rich and the poor: the rich get richer and the poor become poorer. It is against this backdrop that this seeks to ascertain the effect of the Federal Government recurrent and capital expenditure on the real gross domestic product, gross fixed capital formation, savings, and manufacturing capacity utilization in Nigeria. Section one gave an insight to the background to the study; section two reviews relevant literature; section three depicts the methodological approach; section four divulges the results as well as discussion of the findings; while sections five concludes and offered some recommendations for consideration by policymakers.

Review of literature. Government expenditure refers to the total expenditure of the government from one period to another. The structure or the size of government normally determines the magnitude of government expenditure. Government expenditure is the expenditure of the government on amenities and services for the growth and development of the economy usually on annual basis Jeff-Anyeneh & Ibenta (2019). Government expenditure is regarded as an exogenous variable that contributes positively to economic growth. Hence, an increase in government expenditure would likely lead to increase in employment, income and output and through the usual multiplier effects will increase aggregate demand. Government expenditure in addition to raising the level of economic growth also influences the pattern of production and the component of output. Economic growth is the monetary

value of goods and services produced in a country over a particular period of time, and is seen from different angles based majorly on the level of development experience in the country at that particular point in time (Jeff-Anyeneh, 2018). According to Nurudeen & Abdullahi (2010) economic growth is an increase in real per capita gross national product. Gross domestic product is the total volume of production that has taken place in the economy irrespective of the nationality of the people who produced the goods and services.

There are theoretical postulations on the nexus between government expenditure and economic growth. Some of these theories include Keynesian theory, Adolph Wagner's theory, Musgrave theory and Peacock & Wiseman theory. However, we is anchored this study on the Keynesian theory of government expenditure because Nigeria is a developing country and the financial system which is still at its developing stage cannot provide the fund to meet the growth and development requirements of the country. This theory works on the belief that the private sector does not only produce the most efficient results from the economy as a whole. The Keynesian hypothesis is used in an economy that is midway between a market-based economy and a government-run economy (Danladi et al., 2015). When the economy is slowing down, the government always raises expenditure, according to the Keynesian theory of fiscal policy. This requires a concept known as a multiplier in theory. According to this argument, if the government invests in job creation, those who are working will have more money to spend. Keynes went on to construct a hypothesis that claimed active government policy could be successful at controlling the economy. Instead of considering uneven government spending to be incorrect. Keynes also stated that since we are all going to die in the long term, government should address issues now rather than waiting for market forces to do so.

Empirically, Onifade et al. (2020) used Pearson's ARDL approach to investigate the effect of public expenditure on economic growth in Nigeria for the period 1981–2016. The study found out that recurrent expenditure had significant negative effect while the capital expenditure had positive but significant effect on economic growth in Nigeria, also from the investigation of the relationship between public spending and inclusive growth using ARDL and VECM, Kolawole (2016) found out that productive public expenditure positively influences inclusive growth.

Economic growth is an important issue concerned by scholars all over the world Onifade et al. (2020) found that there is a long term correlation between public expenditure and economic growth. Government expenditure has a negative effect on economy growth and public expenditure and domestic investment are the hanger causes of economic growth. A co-integration test was therefore conduct to ascertain the existence of a long run equilibrium among our variables of interest.

Shrestha & Bhatta (2018) noted that the Johansen co-integration test cannot be applied directly in the situation where variables have mixed order of integration as in the case of our data in this study but rather when all variables are integrated of order one 1(1). They further maintained that an auto regressive distributive lag (ARDL)

model is applicable in most cases where time series data possess a mixed order of integration.

Leshoro (2017) ascertained the effects of government investment expenditure and government consumption expenditure along with groups of control variables on economic growth in South Africa, using the autoregressive distributed lag (ARDL) technique. Annual data spanning the period 1976 to 2015 was employed. The results showed that the disaggregated government spending is positively related to economic growth both in the long run and the short run, during the period considered.

Piabuo & Tieguhong (2017) made a comparative analysis on the impact of health expenditure between countries in the Economic and Monetary Community of Central Africa (CEMAC) sub-region and five other African countries that achieved the Abuja declaration is provided. Data for this study was extracted from the World Development Indicators (2016) database, panel ordinary least square (OLS), fully modified ordinary least square (FMOLS) and dynamic ordinary least square (DOLS) were used as econometric technique of analysis. Results showed that health expenditure has a positive and significant effect on economic growth in both samples. A unit change in health expenditure can potentially increase GDP per capita by 0.38 and 0.3 units for the five other African countries that achieve the Abuja target and for CEMAC countries respectively, a significant difference of 0.08 units among the two samples. In addition, a long-run relationship also exist between health expenditure and economic growth for both groups of countries.

Paul & Furahisha (2017) assess the validity of Wagner's law and Keynesian hypothesis of the long-run relationship between government expenditure and economic growth in Tanzania using annual time series data from 1978 to 2014. The Johansen test of co-integration revealed that there are co-integrating vectors in the system which indicates the existence of long-run equilibrium relationship among the variables. The Granger causality test was performed within vector error correction model and the results revealed strong support for both Wagner's law and Keynesian hypothesis when government expenditure was taken at its aggregate level. At the disaggregated levels, the results depict that recurrent expenditure and development expenditure from foreign sources promote economic growth hence supporting the Keynesian hypothesis. Wagner's law was only supported in one instance where causality runs from economic growth to development expenditure from domestic sources.

Iheanacho (2016) appraises the long and short run relationship between public expenditure and economic growth in Nigeria over the period of 1986–2014, using Johansen co-integration and error correction approach. The result showed recurrent expenditure is the major driver of economic growth in Nigeria. Controlling for the influence of non-oil revenue, this study shows a negative and significant long run relationship between economic growth and recurrent expenditure coexists with a positive short run relationship, highlighting the dual effects of recurrent expenditure on economic growth in Nigeria. For the capital expenditure, the study documented a negative and significant long run effect of capital expenditure on economic growth in

Nigeria.

Awa (2016) empirically ascertains the prospects and effects of government expenditure on economic growth in Cross River State, Nigeria. Three selected areas of government expenditure which include: government expenditure on education, agriculture and health and growth rate of Cross River State as proxy for economic growth. Time series data covering the period between 2007 and 2015 were used for the study. From the error correction model, the following interesting findings were made, government expenditure on education, government expenditure on health and government expenditure on agriculture significantly affects economic growth in Cross River State.

Dikeogu et al. (2016) had to conduct a study on the impact of public expenditure on economic growth in Nigeria from 1970 to 2013. Public expenditure in its aggregated and disaggregated form served as the major regressor with money supply as check variable meant to enhance the explanatory power of the model. The study adopted the econometric technique of Ordinary Least Squares (OLS) and Error Correct Mechanism (ECM). The ADF result showed that all the variables were stationary at 1st difference and the co-integration test indicated a long run relationship among the variables. The findings reveal that aggregated government expenditure do not impact significantly on economic growth, while disaggregated government expenditure exerts a significant impact on economic growth.

Ebong et al. (2016) where poised to determine the impact of government capital expenditures on economic growth in Nigeria during 1970 and 2012. A multiple regression model based on a modified endogenous growth framework was utilized to capture the interrelationships among capital expenditures on agriculture, education, health economic infrastructure and economic growth. Drawing on error correction and cointegration specifications, an OLS technique was used to analyse annual time series. Both short and long run effects of government capital expenditures on economic growth were estimated. Government capital expenditures had differential effects on economic growth. Capital expenditures on Agriculture did not exert any significant influence on growth both in the long and short runs.

Chandio et al. (2016) had to ascertain the impact of Government expenditure on agricultural sector and economic growth in Pakistan over the period 1983–2011. The study applied Augmented Dickey-Fulle (ADF) unit root test, Johansen Co-integration test and Ordinary Least Square (OLS) technique as analytical tools to analysis the data. The results of Johansen Co-integration test showed that there exists a long-run relationship between government expenditure on agriculture, agricultural outputs and economic growth in Pakistan. On the other hand, the empirical results of regression analysis revealed that agricultural outputs, government expenditure have significant influence on economic growth in Pakistan.

Abdulrahman (2016) examines how government expenditure affects economic growth in Nigeria for the period of 1986–2011. The analytical tools of analysis were used in analyzing the data collected, and the model used is multiple regression models.

From the result, it is clear that Government Expenditure has a negative and insignificant impact on the economic growth of a country, despite the fact that the overall model performance is good as shown by the R-Square and F-test.

Oyediran et al. (2016) carried out a study on the relationship between government expenditure and economic growth in Nigeria from 1980 to 2013. The study employed ordinary least square (OLS) multiple regression analysis in estimating the specified model, with the Gross Domestic Product (GDP) as the dependent variable, while Capital Expenditure (CAPEXP) and Recurrent Expenditure (REXP) are the independent variables. Results showed that in Nigeria, there exist a significant relationship between the government expenditure and economic growth.

Bako & Titus (2016) evaluate the causal relationship between government expenditure and economic growth in Nigeria from 2000 to 2014. Secondary data sourced from the Central Bank of Nigeria was used. Econometric modelling was adopted and Granger causality model was used to test the direction of causality between government expenditure and economic growth in Nigeria. The study revealed a unidirectional causation from government expenditure to economic growth in the country.

Idenyi et al. (2016) had to determine the long run relationship between government expenditure and economic growth in Nigeria from 1980–2015 using the Johansen co integration technique, Error correction mechanism and Pair wise Granger causality econometric tool of analysis. The results of the study indicated negative relationship among government capital expenditure, unemployment and economic growth. A positive correlation was found among government recurrent expenditure, inflation and economic growth. The results showed unidirectional causality running from government capital expenditure to gross domestic product and bi directional causality from government recurrent expenditure to gross domestic product. The causality result also indicated a unidirectional causality running from unemployment to gross domestic product and government capital expenditure to unemployment.

Usman & Loganathan (2016) assess the causal relationship between government expenditure and economic growth in Nigeria. The study employed annual data spanning from 1961–2014 and bootstrap Granger non-causality test with fixed size rolling windows. Based on the full sample Granger causality test, the result indicates that none of the series has predictive power on each other. However, the results from the bootstrap rolling window estimation revealed that causality exists between the variables at different sub-sample periods, which are in line with an important event that happened in the economy.

Mehrara & Keshtgar (2016) examine the causal relationship between government expenditure and gross domestic product for Middle East/North Africa (MENA) region countries by using panel unit root tests and panel co-integration analysis for the period 1970–2010. The results showed a strong causality from economic growth to government expenditure in these countries. However, government spending does not have any significant effects on GDP.

Danladi et al. (2015) appraise the implication of government expenditure on the growth of Nigeria economy. The autoregressive distributed lag (ARDL) methodology was employed to examine the relationship between the independent variables and the dependent variable. From the analysis and findings, government spending significantly and positively explained the economic growth of the country. In comparing the results of the total government expenditure with capital and recurrent expenditure, the result showed that they are positively related to economic growth however, the recurrent component of the expenditure significantly explained more.

Simiyu (2015) investigates relationship between economic growth and public expenditure on Health, Education, Military and Infrastructure in Kenya. The study used a time series data collected from 1963 to 2012. Johansen Co-integration test and Vector Error Correction Model (VECM) was applied on the time series data to estimate the short-run and long-run relationships between public expenditures and economic growth in Kenya. The results showed no causal relationship between public expenditure and economic growth in Kenya. However, there exist a unidirectional causation between Military and Health expenditures – Military expenditures "Granger Cause" Health expenditures. Hence, a change in Military expenditures cause a change in Health expenditures.

Using a sample of 306 estimates drawn from 31 primary studies, Churchill et al. (2015) conducted an empirical synthesis of the link between economic growth and government expenditure on education or health using meta-analysis. They found that the effect of government education expenditure on growth is positive, whereas the growth effect of government health expenditure is negative.

Biyase & Zwane (2015) appraise whether Wagner's law holds in African countries. The authors used panel data for 30 African countries for the period from 1990 to 2005. The models used in this paper included the pooled ordinary least square (OLS), fixed effect model (FE) the random effect model (RE). Based on the results of the models, the study confirmed that there is a strong support for Wagner's law in African countries under investigation.

Usman & Agbede (2015) ascertain the relationship between government expenditure and economic growth in Nigeria using a co-integration and error correction model for the period 1970–2010. From the long-run analysis, the results revealed a positive and significant linear relationship between the two categories of government expenditure and economic growth (measured by real GDP), whereas on the short-run, economic growth had a positive and significant linear relationship with recurrent expenditure and negative but significant relationship with capital expenditure. The result of the Pairwise Granger Causality test in a Vector Error Correction Model indicated a unidirectional (one-way) causality, running from economic growth to capital expenditure and recurrent expenditure to economic growth, while bi-directional causality runs from capital expenditure to recurrent expenditure and vice versa.

Udoka & Anyingang (2015) had to investigate the effect of public expenditure on the growth and development of Nigerian economy (1980–2012). Data were obtained

from annual publications of Central Bank of Nigeria. Data gathered were analyzed using Ordinary least square multiple regression statistical technique. Result of the findings revealed that aggregate expenditure had a positive impact on economic growth and development of the Nigerian economy, recurrent expenditure had a significant relationship on the growth and development of the Nigerian economy. The result also indicated that capital expenditure also had a significant effect on the growth and development of the Nigerian economy.

Hasnul (2015) explores the relationship between government expenditure and economic growth has been debated for decades and has not clearly come to a conclusion yet. In this study, the government expenditure has been disaggregated in to the government operating and development expenditure. They used OLS technique to found the fixed effects of government expenditure on economic growth and the result indicated that there is a negative correlation between government expenditure and economic growth in Malaysia.

Lahirushan & Gunasekara (2015) had to analyse whether government expenditure causes economic growth in Asian countries and vice versa and then scrutinizing long-run equilibrium relationship that exists between them. The methodology being quantitative that includes econometrical techniques of co-integration, panel fixed effects model and granger causality in the context of panel data of Asian countries; Singapore, Malaysia, Thailand, South Korea, Japan, China, Sri Lanka, India and Bhutan with 44 observations in each country, totalling to 396 observations from 1970 to 2013. The model used was the random effects panel OLS model. As with the above methodology, the study found the fascinating outcome. At first, empirical findings exhibited a momentous positive impact of government expenditure on Gross Domestic Production in Asian region. Secondly, government expenditure and economic growth indicate a long-run relationship in Asian countries.

Suanin (2015) empirically examines the effects of different types of government expenditure on economic growth in Thailand. The authors used different econometric techniques to estimate the short- and long- run effects of these expenditures on growth and employ quarterly data over the period 1993–2014. The finding indicated that while budgetary expenditure has the potential to promote economic growth in the long-run, extra-budgetary expenditure as well as quasi-fiscal spending can also stimulate short-run economic growth.

Ayinde et al. (2015) analyse the impact of capital expenditure, recurrent expenditure and various sources of Government revenue on Nigeria's economic growth using secondary data gathered from Central Bank of Nigeria's publication from 1981 to 2011. The statistical and econometric tools used for the study include the unit root test, co-integration, error correction mechanism and combined estimators' analysis. The use of Principal Component Estimator to correct for multi-collinearity revealed positive effect of capital expenditure, recurrent expenditure, oil revenue and federal retained revenue on economic growth.

Kurt (2015) explores the direct and indirect (external) effects of health

expenditures on economic growth using the Feder-Ram model. It used aggregate and manufacturing industrial production as total output, total government health expenditures, general government cure and pharmaceutical products health expenditures, general government medicine and health expenditures series belonging to the economy of Turkey between 2006 to 2013 period using seasonally adjusted and real monthly data. The results obtained from this study have shown that in general, the direct impact of government health expenditures on economic growth in Turkey is positive and significant.

Muhammad & Karim (2015) had to explores the impact of expenditure on economic growth in Pakistan, using the time series data for the period 1972 to 2013. Secondary data was acquired from World Development indicators and Pakistan Bureau of Statistics. Augmented Dicky Fuller Test (ADF) test was applied to check the stationarity of the data. Johansen Cointegration and Granger Causality tests were applied to empirically investigate the relationship between given variables (expenditure and economic growth) in Pakistan. The cointegration results indicated that there is no any relationship between expenditure and national income in the long run.

Aregbe & Edame (2015) examine the impact of government spending on economic growth in Nigeria. The time series data for the period: 1970–2010 was used in the study. Data for this study were obtained from the Central Bank of Nigeria statistical Bulletin. Some selected macro-economic variables such as government expenditure, educational expenditure, health expenditure, government investment expenditure and government consumption were captured in the model, after which the model was estimated. The results showed that overall government expenditure on health and transport are positive and significantly related to economic growth.

Materials and methods. This study presents an evaluation of the effect of federal government expenditure on economic growth in Nigeria during the period 1986–2020. This study is based on the adoption of quantitative and descriptive research design, hence used a test of causality (granger causality approach) to evaluate the effect of government expenditure on economic growth in Nigeria. The dependent variables are four indicators of economic growth: real gross domestic product, gross fixed capital formation, savings, and manufacturing capacity utilization, whereas the independent variables are the two major components of government expenditure: recurrent and capital expenditure. Since it utilized already existing data that provide answers to empirical research questions, the time frame covers a period of 35 years that is, from 1986 to 2020. This allows for a large number of observations which will improve the robustness of the results owing to availability of 35 numbers of observations. In estimating the models, this study employed the Auto-Regressive Distributive Lag (ARDL) technique. Nevertheless, we first subjected the data to unit root test of Augmented Dickey-Fuller (ADF). Thereafter, the short-run and long-run relationship estimated after which the stability of the model was determined through diagnostic of Serial Correlation LM, Heteroskedasticity, and Ramsey RESET tests. Finally, the

granger causality test was performed in a bid to determine the predicting power of the variables of interest which will ultimately establish the effect of the independent variables on the dependent variables and vice versa as may be depicted by the econometric output.

A modified model of Idenyi et al. (2016) for a study in Nigeria was adapted. The functional form of Idenyi et al. (2016) is expressed as:

$$\text{RGDP} = f(\text{GREXP, GCEXP}), \quad (1)$$

where:

RGDP = real gross domestic product;

GREXP = government recurrent expenditure;

GCEXP = government capital expenditure.

Modifying the model of Idenyi et al. (2016) by removing inflation rate and unemployment will result in the following functional models for this study:

$$\text{RGDP} = f(\text{GREXP, GCEXP}) \quad (2)$$

$$\text{GFCF} = f(\text{GREXP, GCEXP}) \quad (3)$$

$$\text{SAV} = f(\text{GREXP, GCEXP}) \quad (4)$$

$$\text{MCU} = f(\text{GREXP, GCEXP}) \quad (5)$$

Econometrically transforming the models by introducing log, constant parameter and error term, and possible removing the influence of any outlier, the following models were developed:

$$LogRGDP_t = a_0 + a_1 Log\ GREXP_t + a_2 Log\ GCEXP_t + \mu_t \quad (6)$$

$$LogGFCF_t = a_0 + a_1 Log\ GREXP_t + a_2 Log\ GCEXP_t + \mu_t \quad (7)$$

$$LogSAV_t = a_0 + a_1 Log\ GREXP_t + a_2 Log\ GCEXP_t + \mu_t \quad (8)$$

$$LogMCU_t = a_0 + a_1 Log\ GREXP_t + a_2 Log\ GCEXP_t + \mu_t \quad (9)$$

where:

$RGDP$ = real gross domestic product;

$REXP$ = government recurrent expenditure;

$CEXP$ = government capital expenditure;

SAV = national savings;

MCU = manufacturing capital utilization;

a_0 = constant coefficient;

u = error term;

t = time trend.

Results and discussion. *Descriptive features of the Variables.* The descriptive features of the data were structured to capture the mean, median, maximum, standard deviation, skewness, kurtosis, Jarque-Bera, p-value and number of observations of the data set. From the descriptive features of the variables common sample in Table 1, the mean are 38659086, 3439654, 4379203, 47.20229, 1828970, and 572829.7 respectively for RGDP, GFCF, SAV, MCU, GREXP, and GCEXP. The mean are 31709450 for RGDP, 438114.9 for GFCF, 655740 for SAV, 53.3 for MCU, 984300 for GREXP, AND 438700 for GCEXP. The maximum and minimum values are 72094090 and 15237990 for RGDP, 13593779 and 7323 for GFCF, 20841840 and

13930, 60.50 and 29.29 for MCU, 8121640 and 7700 for GREXP, and 2289000 and 6370 for GCEXP. The standard deviations are 20610249, 4647082, 5998901, 10.185, 2170659 and 554691.2 for RGDP, GFCF, SAV, MCU, GREXP, and GCEXP respectively. The variables were found to be positively skewed towards normality as evidenced by the positive values of the skewness statistic except for MCU. The Jarque-Bera suggests that all the variables are normally distributed as the p-values are significant at a level of 5 %.

Table 1

Descriptive Features of the Variables

Indicators	RGDP	GFCF	SAV	MCU	GREXP	GCEXP
Mean	38659086	3439654	4379203	47.20229	1828970	572830
Median	31709450	438115	655740	53.30000	984300	438700
Maximum	72094090	13593779	20841840	60.50000	8121640	2289000
Minimum	15237990	7323	13930	29.29000	7700	6370
Std. Dev.	20610249	4647082	5998901	10.18591	2170659	554691
Skewness	0.448240	1.007512	1.231575	-0.398932	1.254607	1.161181
Kurtosis	1.591578	2.283068	3.274698	1.600233	3.803771	4.070010
Jarque-Bera	7.064855	6.670868	8.957911	7.785738	10.12405	9.535003
Probability	0.021017	0.035599	0.011345	0.020639	0.006333	0.008502
Sum	1.35E+09	1.20E+08	1.53E+08	1652.080	64013960	20049040
Sum Sq. Dev.	1.44E+16	7.34E+14	1.22E+15	3527.595	1.60E+14	1.05E+13
Observations	35	35	35	35	35	35

Source: E-views 10.0 version data output.

Stationarity Test for the Study Variables. The stationarity test for the study variables is utilized to ascertain stationarity in a time series. A time series has stationarity if a shift in time does not cause a change in the shape of the distribution; unit root is one cause for non-stationarity in time series data. The assessment of the stationarity of the data were carried with Augmented Dickey-Fuller (ADF). The stationarity test was performed at level and first difference. The non-stationarity of the data at level necessitated the first difference estimation. ADF test result as presented in Table 2 indicated that all the variables are stationary at different level and first difference.

Table 2

Result of ADF Test

Variables	ADF Statistic	Critical Value at 1%	Critical Value at 5%	Remarks
RGDP	-5.460027 (0.00)*	-3.670170	-2.963972	Stationary (1/1)
GFCF	-5.128921 (0.00)*	-3.646342	-2.954021	Stationary (1/0)
SAV	-6.522030 (0.00)*	-4.262735	-3.552973	Stationary (1/1)
MCU	-4.399206 (0.00)*	-2.636901	-1.951332	Stationary (1/1)
GREXP	-11.10263 (0.00)*	-4.273277	-3.557759	Stationary (1/1)
GCEXP	-6.100412 (0.00)*	-3.661661	-2.960411	Stationary (1/1)

Note. The optimal lag for ADF test is selected based on the Akaike Info Criteria (AIC), p-values are in parentheses where (*) & (**) denote significance at 1 % and 5 % respectively.

Source: E-views 10.0 version data output.

ARDL Long-Run Relationship. The confirmation of the stationarity of the data made way for the testing of the long run relationship between government expenditure and economic growth in Nigeria. The Autoregressive Distributive Lag (ARDL) was selected because it takes into consideration the different order of integration of variables. Tables 3, 4 and 5 reveal that there is a long-run relationship between government expenditure, real gross domestic product, gross fixed capital formation, and national savings. This assertion is based on the fact that the values of the f-statistic of 4.31 (Table 3), 18.81 (Table 4), and 9.04 (Table 5) are higher than the upper and lower bound test of 3.87 and 3.10 respectively at a 5% significance level. On the other hand, no long-run relationship was found between government expenditure and manufacturing capacity utilization in Nigeria as f-statistic of 3.11 (Table 6) is less than the upper bound test of 3.87.

Table 3

ARDL Bound Test for RGDP → GREXP and GCEXP

T-Test	5% Critical Value Bound		Remark
F-statistic	Lower Bound	Upper Bound	-
4.316241	3.10	3.87	Null hypothesis rejected

Source: E-views 10.0 version data output.

Table 4

ARDL Bound Test for GFCF → GREXP and GCEXP

T-Test	5 % Critical Value Bound		Remark
F-statistic	Lower Bound	Upper Bound	-
18.81365	3.10	3.87	Null hypothesis rejected

Source: E-views 10.0 version data output.

Table 5

ARDL Bound Test for SAV → GREXP and GCEXP

T-Test	5 % Critical Value Bound		Remark
F-statistic	Lower Bound	Upper Bound	-
9.045554	3.10	3.87	Null hypothesis accepted

Source: E-views 10.0 version data output.

Table 6

ARDL Bound Test for MCU → GREXP and GCEXP

T-Test	5 % Critical Value Bound		Remark
F-statistic	Lower Bound	Upper Bound	-
3.113139	3.10	3.87	Null hypothesis rejected

Source: E-views 10.0 version data output.

ARDL Short Run Relationship. RGDP and Government Expenditure. The result in Table 7 shows that government recurrent expenditure has a significant negative relationship with real gross domestic product, while government capital expenditure has a significant positive relationship with real gross domestic product. A unit increase in government recurrent expenditure leads to a factor of 1.07 depreciation in real gross domestic product, whereas a unit rise in government capital expenditure increase the real gross domestic product by a factor of 521429.8. When government recurrent and capital expenditure are held constant, real gross domestic product would amount to

1.63. The result in Table 7 shows the adjusted R-square value to be 0.997613, an insinuation that 99.76 % changes in real gross domestic product was as a result of joint variation in government recurrent and capital expenditure. The F-statistic which determines if the changes in the dependent variable is significant or not, showcases that the aforementioned magnitude of changes in real gross domestic product was significantly (less than 0.05) explained by government recurrent and capital expenditure. The traditional Durbin Watson test of autocorrelation shows a value of 2.1 which implies that there is no autocorrelation in the model.

Table 7

ARDL Regression for RGDP → GREXP and GCEXP

Variable	Coefficient	Std. error	t-statistic	Prob.
RGDP(-1)	1.632943	0.135960	12.01044	0.0000
RGDP(-2)	-0.589567	0.149074	-3.954872	0.0005
GREXP	-1.072969	0.334041	-3.212084	0.0033
GCEXP	2.641699	0.817045	3.233235	0.0031
C	-521429.8	654743.2	-0.796388	0.4325
R-squared	0.997911	Mean dependent var		40077760
Adjusted R-squared	0.997613	S.D. dependent var		20371781
S.E. of regression	995353.8	Akaike info criterion		30.59831
Sum squared resid	2.77E+13	Schwarz criterion		30.82505
Log likelihood	-499.8721	Hannan-Quinn criter.		30.67460
F-statistic	3344.143	Durbin-Watson stat		2.164431
Prob (F-statistic)	0.000000	-		-

Source: E-views 10.0 version data output.

GFCF and Government Expenditure. As can be seen in Table 8, government recurrent expenditure has significant negative relationship with gross fixed capital formation, while government capital expenditure has a positive insignificant relationship with gross fixed capital formation. A percentage increase in government recurrent expenditure leads to 3.89 factor depreciation in gross fixed capital formation, whereas a percentage increase in government capital expenditure would cause a 1.145 factor upsurge in gross fixed capital formation. Holding government recurrent and capital expenditure constant would result in 247161 factor depreciation in gross fixed capital formation. From the adjusted R-square, 97.67 % variation in gross fixed capital formation was attributed to government recurrent and capital expenditure. There is no need to worry about the significant of this variation as the p-value (0.00) and the F-statistic (158.87) vehemently showed that government recurrent and capital expenditure was significant in explaining the changes in gross fixed capital formation. The Durbin Watson is 1.99 shows that there is no element of autocorrelation in the model.

Savings and Government Expenditure. The result in Table 9 shows that government recurrent and capital expenditure have insignificant negative relationship with savings in Nigeria. A unit increase in government recurrent and capital expenditure leads to a 0.05 % and 91.30 % depreciation in savings respectively. When government recurrent and capital expenditure are held constant, savings would be

down by a factor of 252684.90.

Table 8

ARDL Regression for GFCF → GREXP and GCEXP

Variable	Coefficient	Std. error	t-statistic	Prob.
GFCF(-1)	0.312953	0.149243	2.096939	0.0477
GFCF(-2)	0.117227	0.168416	0.696055	0.4937
GFCF(-3)	-0.578384	0.156992	-3.684161	0.0013
GFCF(-4)	0.419711	0.127891	3.281784	0.0034
GREXP	-3.849453	0.684423	-5.624377	0.0000
GREXP(-1)	0.627527	0.899375	0.697737	0.4927
GREXP(-2)	5.898478	0.948855	6.216420	0.0000
GCEXP	1.145594	0.695851	1.646321	0.1139
C	-247161.8	225665.8	-1.095256	0.2853
R-squared	0.982986	Mean dependent var		3881907.
Adjusted R-squared	0.976799	S.D. dependent var		4765114.
S.E. of regression	725818.5	Akaike info criterion		30.06569
Sum squared resid	1.16E+13	Schwarz criterion		30.48201
Log likelihood	-457.0182	Hannan-Quinn criter.		30.20140
F-statistic	158.8799	Durbin-Watson stat		1.991048
Prob (F-statistic)	0.000000	-		-

Source: E-views 10.0 version data output.

Table 9

ARDL Regression for SAV → GREXP and GCEXP

Variable	Coefficient	Std. error	t-statistic	Prob.
SAV(-1)	0.481471	0.144075	3.341803	0.0031
GREXP	-0.005312	0.540636	-0.009826	0.9923
GREXP(-1)	1.303701	0.619423	2.104703	0.0475
GREXP(-2)	-1.195774	0.613421	-1.949354	0.0647
GREXP(-3)	-0.017518	0.575081	-0.030461	0.9760
GREXP(-4)	2.105700	0.653399	3.222687	0.0041
GCEXP	-0.913086	0.472138	-1.933936	0.0667
GCEXP(-1)	2.210648	0.699354	3.160988	0.0047
GCEXP(-2)	-1.199922	0.625539	-1.918223	0.0688
C	-252684.9	172193.7	-1.467445	0.1571
R-squared	0.995286	Mean dependent var		4941692.
Adjusted R-squared	0.993265	S.D. dependent var		6158273.
S.E. of regression	505372.9	Akaike info criterion		29.35968
Sum squared resid	5.36E+12	Schwarz criterion		29.82225
Log likelihood	-445.0750	Hannan-Quinn criter.		29.51047
F-statistic	492.6295	Durbin-Watson stat		2.118870
Prob (F-statistic)	0.000000	-		-

Source: E-views 10.0 version data output.

The result in Table 9 shows the adjusted R-square value to be 0.993265, an insinuation that 99.32 % changes in savings was as a result of joint variation in government recurrent and capital expenditure. The F-statistic which determines if the changes in the dependent variable is significant or not, showcases that the aforementioned magnitude of changes in savings was significantly (less than 0.05)

explained by government recurrent and capital expenditure. The traditional Durbin Watson test of autocorrelation shows a value of 2.1 which implies that there is no autocorrelation in the model.

Manufacturing Capacity Utilization and Government Expenditure. As can be seen in Table 10, government recurrent expenditure has insignificant negative relationship with manufacturing capacity utilization, while government capital expenditure has a positive significant relationship with manufacturing capacity utilization. A percentage increase in government recurrent expenditure leads to 182 % depreciation in manufacturing capacity utilization, whereas a percentage increase in government capital expenditure would cause a 729 % upsurge in manufacturing capacity utilization. Holding government recurrent and capital expenditure constant would result in 957 % appreciation in manufacturing capacity utilization. From the adjusted R-square, 90.63 % variation manufacturing capacity utilization was attributed to government recurrent and capital expenditure. There is no need to worry about the significant of this variation as the p-value (0.00) and the F-statistic (33.27) vehemently showed that government recurrent and capital expenditure was significant in explaining the changes in manufacturing capacity utilization. The Durbin Watson of 2.16 shows that there is no element of autocorrelation in the model.

Table 10

ARDL Regression for MCU → GREXP and GCEXP

Variable	Coefficient	Std. error	t-statistic	Prob.
MCU(-1)	0.952402	0.188262	5.058913	0.0001
MCU(-2)	-0.102877	0.272337	-0.377757	0.7094
MCU(-3)	0.151847	0.274084	0.554016	0.5854
MCU(-4)	-0.301565	0.191323	-1.576205	0.1299
GREXP	-1.82E-06	1.06E-06	-1.711717	0.1017
GCEXP	7.29E-06	3.14E-06	2.321337	0.0304
GCEXP(-1)	7.93E-07	3.81E-06	0.207979	0.8372
GCEXP(-2)	-2.58E-06	4.61E-06	-0.560800	0.5809
GCEXP(-3)	9.57E-06	4.13E-06	2.318917	0.0306
R-squared	0.934479	Mean dependent var		47.95742
Adjusted R-squared	0.906398	S.D. dependent var		10.58050
S.E. of regression	3.237039	Akaike info criterion		5.442891
Sum squared resid	220.0468	Schwarz criterion		5.905468
Log likelihood	-74.36482	Hannan-Quinn criter.		5.593680
F-statistic	33.27860	Durbin-Watson stat		2.160723
Prob (F-statistic)	0.000000	-		-

Source: E-views 10.0 version data output.

Diagnostics Test. To affirm the stability of the estimated models, different diagnostic and robustness tests through serial correlation, heteroskedasticity, and Ramsey reset specifications tests were conducted to provide support that the errors are well-behaved. The result in Tables 11, 12 and 13 absolve the models estimated of serial correlation, heteroskedasticity, and Ramsey reset specifications problems thus estimated output would be considered reliable and stable in econometric foundation.

Table 11

Breusch-Godfrey Serial Correlation LM Test

Models estimated	F-statistic	Prob.
RGDP→ GREXP + GCEXP	0.283942	0.7551
GFCF→ GREXP + GCEXP	1.501812	0.2468
SAV→ GREXP + GCEXP	1.774018	0.1966
MCU→ GREXP + GCEXP	1.660612	0.2164

Source: E-views 10.0 version data output.

Table 12

Heteroskedasticity Test

Models estimated	F-statistic	Prob.
RGDP→ GREXP + GCEXP	0.937088	0.4569
GFCF→ GREXP + GCEXP	1.977874	0.0982
SAV→ GREXP + GCEXP	0.958139	0.4994
MCU→ GREXP + GCEXP	1.042364	0.4410

Source: E-views 10.0 version data output.

Table 13

Ramsey Reset Specification

Models estimated	t-statistic	df	P-value
RGDP→ GREXP + GCEXP	1.586183	(1, 27)	0.2187
GFCF→ GREXP + GCEXP	0.570240	(1, 21)	0.4585
SAV→ GREXP + GCEXP	3.003287	(1, 20)	0.0985
MCU→ GREXP + GCEXP	2.482300	(1, 20)	0.1308

Source: E-views 10.0 version data output.

Granger Causality Test. To determine the effect of government expenditure on economic growth in Nigeria, the granger causality analysis was performed. The regression output in Table 14 reveals that government recurrent expenditure has a significant effect on real gross domestic product owing to the flow of causality from government recurrent expenditure to real gross domestic product at a significant level of 5 %. Real gross domestic product has significant effect on government capital expenditure due to the fact that causality runs from real gross domestic product to government capital expenditure at a significant level of 5 %. Government recurrent expenditure has a significant effect on gross fixed capital formation in Nigeria. There is unidirectional causal relationship between government recurrent expenditure and gross fixed capital formation at a significant level of 5 %. Government recurrent expenditure has significant effect on total savings in Nigeria owing to the flow of causality from government recurrent expenditure to total savings at a significant level of 5 %. There is a bidirectional causal relationship between government capital expenditure and total savings in Nigeria. Causality flows in both direction: from government capital expenditure to total savings, and from total savings back to government capital expenditure.

Discussion of findings. This study examined the effect of government expenditure on economic growth in Nigeria from 1986 to 2020 with the aim of evaluating the effect of government recurrent and capital expenditure on real gross domestic product, gross

fixed capital formation, savings, and manufacturing capacity utilization. Firstly, the study found a long run relationship between government expenditure and economic growth variables of gross domestic product, gross fixed capital formation and savings. This is in support of the findings of Lahirushan and Gunasekara (2015) had to analyse whether government expenditure causes economic growth in Asian countries and established that government expenditure and economic growth indicate a long-run relationship in Asian countries: Singapore, Malaysia, Thailand, South Korea, Japan, China, Sri Lanka, India and Bhutan. There is a negative relationship between government expenditure and real gross domestic product in Nigeria. This is in line with the works of Onifade et al. (2020) and Iheanacho (2016). However, it disagreed with large empirical studies reviewed such as Leshoro (2017), Onifade et al. (2020), Piabuo & Tieguhong (2017), Idenyi et al. (2016), Danladi et al. (2015), Usman & Agbede (2015), Udoka & Anyingang (2015), Ayinde et al. (2015). The granger causality test showed that it is only government recurrent expenditure that has significant effect on real gross domestic product.

Table 14

Granger Causality Result

Null Hypothesis	Obs	F-statistic	Prob.	Remarks
GREXP does not Granger Cause RGDP	34	9.88863	0.0037	Causality
RGDP does not Granger Cause GREXP		1.38315	0.2485	No causality
GCEXP does not Granger Cause RGDP	34	0.00709	0.9334	No causality
RGDP does not Granger Cause GCEXP		6.90683	0.0132	Causality
GREXP does not Granger Cause GFCF	34	5.88416	0.0213	Causality
GFCF does not Granger Cause GREXP		2.80335	0.1041	No causality
GCEXP does not Granger Cause GFCF	34	3.34797	0.0769	No causality
GFCF does not Granger Cause GCEXP		1.72530	0.1987	No causality
GREXP does not Granger Cause SAV	34	26.1113	0.0000	Causality
SAV does not Granger Cause GREXP		1.13990	0.2939	No causality
GCEXP does not Granger Cause SAV	34	16.0824	0.0004	Causality
SAV does not Granger Cause GCEXP		5.74146	0.0228	Causality
GREXP does not Granger Cause MCU	34	0.41511	0.5241	No causality
MCU does not Granger Cause GREXP		0.53573	0.4647	No causality
GCEXP does not Granger Cause MCU	34	1.34085	0.2557	No causality
MCU does not Granger Cause GCEXP		0.76634	0.3881	No causality

Source: E-views 10.0 version data output.

Secondly, it was revealed that government recurrent expenditure has significant negative relationship with gross fixed capital formation. This is an evidence that recurrent expenditure of the government does contribute to capital accumulation in Nigeria. Nevertheless, the recurrent expenditure as shown by the granger causality output depicted that government recurrent expenditure has significant influence on gross fixed capital formation in Nigeria. On the other hand, capital expenditure was found to be positively related with gross fixed capital formation. This is in unison with Leshoro (2017), Onifade et al. (2020), Piabuo & Tieguhong (2017), and Idenyi et al. (2016).

Thirdly, savings in Nigeria is related negatively with government recurrent and

capital expenditure. This may be that its income effect outweighs the sum of its substitution and human wealth effects. This may also be attributed to the notion that for developing countries, the income level of citizens affect their capability to save which in turn affects the level of investment arising from low productivity. Nevertheless, the granger causality test depicted that government recurrent expenditure has significant effect on total savings in Nigeria. This is so because most of the savings done are by salaries and wages paid to workers. Manpower training and provision of infrastructure which are relevant factors needed for encouraging economic activity depend on investment. The private sector that is considered as engine of economic development is often handicapped due to poor environment and deficiency of credit facilities. Just as Olise et al. (2013) point out that the Nigerian private sector is at its developmental stage emanating from improper or lack of motivation from the public and the financial sectors to make available the needed funds coupled with the rudimentary technology and less attention to the development of entrepreneur. It can be inferred that absence of conducive environment and evenly available credit facilities in both the urban and rural areas have militated against private sector investment, hence low income and low saving.

Finally, government recurrent expenditure was found to have a negative relationship with manufacturing capacity utilization on one hand, whereas on the other hand, government capital expenditure has significant positive relationship with manufacturing capacity utilization. Capital and recurrent expenditures of the government have no significant effect on manufacturing capacity utilization in Nigeria. This according to Jeff-Anyeneh & Ibenta (2019) could be attributed to the fact that fund allocated for government expenditure are mismanaged or siphon by politician and those in corridors of power. It can be inferred from this result that recurrent expenditure increases the standard of living of its citizenry rapidly, while capital expenditure nurtures long term economic growth which precipitates high standard of living. In Nigeria, Jeff-Anyeneh et al. (2020) have that it is a different kettle of fish because contracts for capital projects are inflated and on many occasions, money budgeted for those contracts are diverted into private pockets as a result of corruption in public offices by public officials thereby impeding economic growth and stimulating poor standard of living hence, less funds will be available to citizens to access their basic needs resulting in declining standard of living.

Conclusions. This study examined the effect of government expenditure on economic growth in Nigeria from 1986 to 2020 with the aim of evaluating the effect of government recurrent and capital expenditure on real gross domestic product, gross fixed capital formation, savings, and manufacturing capacity utilization. Firstly, the study found a long run relationship between government expenditure and economic growth variables of gross domestic product, gross fixed capital formation and savings. Secondly, it was revealed that government recurrent expenditure has significant negative relationship with gross fixed capital formation. Thirdly, savings in Nigeria is related negatively with government recurrent and capital expenditure. This may be that

its income effect outweighs the sum of its substitution and human wealth effects. This may also be attributed to the notion that for developing countries, the income level of citizens affect their capability to save which in turn affects the level of investment arising from low productivity. Nevertheless, the granger causality test depicted that government recurrent expenditure has significant effect on total savings in Nigeria. Finally, government recurrent expenditure was found to have a negative relationship with manufacturing capacity utilization on one hand, whereas on the other hand, government capital expenditure has significant positive relationship with manufacturing capacity utilization. Capital and recurrent expenditures of the government have no significant effect on manufacturing capacity utilization in Nigeria. This study concludes that government recurrent expenditure have significant effect on real gross domestic product, gross fixed capital formation, and total savings. That notwithstanding, the level of economic growth and manufacturing capacity utilization achieved in the country so far is poor when compared with the drastic and magnificent rise in government expenditure.

This study therefore, is re-echoing the need for government to make capital expenditure her priority. By this, the government should allocate at least 50 % of her total expenditure on capital projects. The present-day practice of allocating only 16.58 % (based on year 2020 approved budget of the Federal Government) for capital expenditure will not to a great extent accelerate the pace of economic growth and development in Nigeria. The government are advice to prioritise the provision of basic infrastructural facilities and strengthen the capital market. This will stimulate fund seekers to enter the market for long term capital formation, thereby increasing the level of private investment as well as its contribution to capital formation. There is the need for interest on savings to be attractive through various monetary and fiscal policy tools. A low savings rate makes savings less attractive and borrowing more attractive, which stimulates spending. To augment public expenditure on the path of improving manufacturing capacity utilization, funds allocated for environmental factors of production such as electricity, road, water, communication, etc. should be appropriately utilized.

Government spending is essential to accelerating the rate of economic growth in developing nations like Nigeria, where resources are limited due to the nature of the stock market. This study concludes that government recurrent spending has a large impact on real gross domestic product, gross fixed capital formation, and total savings as a result of the estimation results. That notwithstanding, the level of economic growth and manufacturing capacity utilization achieved in the country so far is poor when compared with the drastic and magnificent rise in government expenditure.

Limitation of the study. The effect of corruption, double taxation and other factors that may not considered as part of the variables to be included in the model, may be seen as a problem. The non- inclusion of the abovementioned items notwithstanding, the researcher relied on the available data within his limit and control to do justice to the study that would give value to the research work.

Prospect for future research. This study is not an end to the debate on the nexus between government expenditure and economic growth of emerging economies, but an inspiration to address some weaknesses in further studies in this subject area. This study covered a period of 35 years, a study on a period far beyond the time frame of this study is suggested for future inquiry. Additionally, this study utilized annual time series data, hence the use of quarterly or monthly data is recommended for future research to improve the number of observations which will supplement the confirmation or refutation of the result of this present study.

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