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AGGREGATE DEMAND SHOCK AND ECONOMIC GROWTH IN NIGERIA.

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Abstract

This study examines how aggregate demand shocks impact economic growth in Nigeria, from 1985 to 2022, employing time-series data, econometric methodologies, and macroeconomic models. The analysis reveals a significant positive relationship between total expenditure (a proxy for aggregate demand) and economic key indicators, namely Gross Domestic Product (GDP) and Gross National Income (GNI). Specifically, a unit increase in total expenditure is associated with an approximate increase of 18,410.41 units in GDP and 0.076200 units in GNI. The findings highlight the crucial significance of investment, consumption and government expenditure in stimulating economic growing. The study recommends that policymakers should consider increasing total expenditure to enhance economic growth, ensuring efficient and targeted spending aligned with broader economic goals. This study enhances the awareness of various variables that influence economic growth in Nigeria, highlighting the importance of data-driven economic policy.

Keywords: Aggregate Demand, Economic Growth, Total Expenditure, Gross Domestic Product, Gross National Income

Introduction

The term demand shock is an unexpected and abrupt event that modifies demand on a specific product or service, usually in a transitory way. On one hand, demand shock is said to be positive when there a sudden and considerable increase in demand, on other hand, demand shock is reported negative when demand -in price (Barone, 2023). The effect of a shock can be

observed on the prices of the goods or service. A positive demand shock will lead to a shortage of goods and a rise in prices, while a negative shock would lead to a surplus of goods and a reduction in prices. Demand shocks frequently display a temporary character, but they have the capacity to create long-lasting consequences. Furthermore, demand shocks are sudden price fluctuations produced by unanticipated events that impact customer perception and demand. Various factors, such as government stimulus programme, earthquake, a technology innovation, a terrorist occurrence, might induce a demand shock. Poor reviews, product recalls, and unexpected news events have the potential to influence several aspects within a given context (Barone, 2023).

According to Keynes, the presence of unemployment can be attributed to inadequate aggregate demand, as wage levels tend to adapt sluggishly and fail to adequately offset the decline in spending. The individual had the belief that through expenditure of government and the consequent increase in aggregate demand, it would be possible to effectively reallocate idle economic resources, such as labourers, to productive activities. Keynes, in his capacity as a demand-side economist, advanced the notion that individuals possess the potential to impede output by the restriction of present expenditures, such as the act of hoarding money. Contrary perspectives from economists propose that hoarding can have an impact on pricing, but it does not fundamentally change the processes of accumulating capital, production, or future output. To clarify, influence of individual's savings, which results in increased capital for business purposes, does not diminish due to a lack of expenditure (Keynes, 1921 as referenced in Kenton, 2023).

The issue of sustainability arises when there is a lack of coherence. During a period of economic recession, the public sector's debt burden might have potentially destabilizing impacts on the whole economy. This phenomenon occurs when the government sector implements fiscal austerity measures to fulfill debt obligations, resulting in a reduction in overall demand. In an economic environment where demand is already constrained, these measures have a contractionary impact on economic activity. Consequently, tax revenues will decline and there is a possibility of an increased debt burden relative to output (Guzman, 2018).

This study examines the effect of aggregate demand shocks on the economic growth of Nigeria. This assessment encompasses different facets of aggregate demand, such as consumer expenditure, government

spending, investment, and net exports. The study employed macroeconomic models, time-series data and econometric approaches to quantify the impact of aggregate demand shocks on economic growth indicator (GDP, GNI) within a relevant time period.

Conceptual Review

Concept of Aggregate Demand (AD)

Aggregate demand is a metric that quantifies the overall level of demand for all produced products and services in a given market. It also refers to the overall expenditure on products and services within a given price level and time frame (Kenton, 2023). Wide array of economic aspects, such as capital goods, imports, exports, government expenditure and consumer goods makes the aggregate demand. One macroeconomic concept that can be compared to aggregate demand is the gross domestic product (GDP) that estimates the aggregate worth of goods and services produced within a given economy. Alternatively, aggregate demand pertains to the combined demand or desire for certain products and services. There exists a robust positive link between aggregate demand and GDP, such that alterations in one measure are typically accompanied by equivalent alterations in the other variable (Kenton, 2023). In the context of market valuation, variables are deemed equivalent when they are traded at identical market prices. The aggregate demand equation is a comprehensive representation of the total spending in an economy, which includes the combined amounts of government spending consumer spending, investment expenditure, and the net value of exports and imports.

Gross Domestic Product (GDP)

The GDP is the highly extensive and commonly utilized indicator of a nation's economic output. it also quantifies the combined worth of all end products and services generated within a nation's boundaries within a 12-month period. It considers account of the market pricing and utilises domestic resources such as labour, capital, and materials. Furthermore, it quantifies the market worth of domestic resources used in the manufacture of consumer goods and services, taking into account indirect company taxes and subsidies.

"Gross" in this context denotes that the measurements and survey-based estimations have not accounted for any deductions related to the decrease in the stock of plant and equipment resulting from wear and tear. The term "domestic" refers to the inclusion of solely the production carried out by factors situated within the country, regardless of whether they are owned by domestic or foreign entities, during the computation of the GDP. The calculation of GDP encompasses the

incorporation of the output and revenue generated by individuals and entities of foreign origin, as well as the property owned by foreigners within the domestic territory (Ott, 2023).

Gross Nation Income (GNI)

The gross national income is the aggregate revenue made by individuals and businesses inside a specific country, regardless of where it was generated geographically. Gross National Income (GNI) is a feasible substitute for Gross Domestic Product (GDP) for evaluating a country's wealth. The calculation prioritises income over output. The GNI is determined by the sum of external inflows of funds and the gross domestic product (GDP) of a particular country. The difference between the two economic indicators GNI and GDP is insignificant in many nations. Countries with significant amounts of foreign direct investment, foreign commercial presence, or foreign aid will demonstrate a noticeable discrepancy between the two indicators. When calculating Gross National Income (GNI), remuneration paid by foreign companies to local employees and the income generated from properties owned by people abroad is included in the GDPAlternatively, the calculation of wages paid by local enterprises to employees in foreign countries and the income earned by foreign owners of domestic assets is conducted. Furthermore, the GDP does not take into consideration the incorporation of product and import taxes that were not previously accounted for; the calculation of Gross National Income (GNI) incorporates these taxes. Conversely, the subsidies are deducted from the GNI calculation. (Investopedia Team, 2023).

Figure 1.1: Conceptual framework for aggregate demand and economic growth of Nigeria.

DEPENDENT VARIABLE **INDEPENDENT VARIABLE**

Economic Growth **Aggregate Demand**

H1

H2

Source: Authors' Conceptualization, 2024

Theoretical Framework

Keynesian Model

This Model is predominantly linked to the scholarly contributions of John M. Keynes, notably in his seminal publication in 1936 "The General Theory of Employment, Interest, and Money". The models present a challenge to the Classical Theory by placing significant emphasis the impact of aggregate demand on decision of economic production and employment. Keynes posited that markets may encounter instances of demand inadequacies, resulting in the occurrence of involuntary unemployment. Hence, it is imperative for the government to engage in intervention by means of fiscal and monetary policies in order to effectively regulate aggregate demand and achieve economic stability. The key assumptions encompass the concept of price and wage stickiness, whereby adjustments do not occur instantaneously. Additionally, the influence of animal spirits, which are psychological elements impacting investment choices, is considered. Moreover, the necessity of government intervention to regulate demand during economic contractions is acknowledged. Critics contend that an overabundance of government intervention has the potential to result in inflation, the displacement of private investment, and fiscal deficits. Additionally, it is argued by some scholars that the Keynesian Model may not comprehensively consider the significance of supply-side issues regarding economic growth (Keynes, 1936).

Classical Theory

The Classical Theory of economics finds its origins in the scholarly contributions of renowned economists like David Ricardo, Adam Smith and John Stuart Mill. However, the theory underwent significant refinement and systematization by economists during the 19th century. The Classical Theory postulates that markets function with efficiency and that economic equilibrium is inherently attained via the interplay of supply and demand. The underlying assumption is that both wages and prices exhibit flexibility and that market may achieve equilibrium without the need for government intervention. This theory posits that aggregate demand is primarily influenced by factors such as the quantity of money and consumer preferences. The key assumptions underlying this perspective encompass the conviction in the inherent ability of markets to self-regulate, the concept of money neutrality (fluctuations in the available monetary supply have no impact on real economic variables), and the notion that economies tend to spontaneously revert to a state of full employment. Critics contend that the Classical Theory may not comprehensively encompass the intricacies of the real world, such as inflexible wages and prices, and it may not adequately address scenarios characterized by enduring unemployment or economic crises (Smith, Strahan, & Cadell, 1776).

Empirical Review

Abdulkarim (2023) conducted a detailed analysis to examine the effects of different investment methods on Nigeria's economic growth between 1981 and 2020. The study used structural break stationarity and conventional tests together with the autoregressive distributed lag (ARDL) technique, to examine the relationship between various variables. The results suggest a robust co-integrating relationship among the variables being studied. More precisely, domestic investment, the private sector, economic liberalisation, interest rate and foreign portfolio investment are identified as that exerts a significant and advantageous influence on the sustained expansion of the economy. Conversely, capital expenditure, foreign direct investment and inflation rate have proven to have a negative impact on long-term economic growth. Furthermore, the results of the short-term research demonstrate a direct relationship between economic liberalization, private-sector credit, and portfolio investment, and economic growth. In contrast, infrastructure spending, foreign direct investment, and inflation rate demonstrate substantial negative impacts. Consequently, the research proposed the implementation of a proficient alignment

between fiscal and monetary policies, with the aim of diminishing the expenses associated with conducting commercial operations. This approach would serve to stimulate and expand prospects for both domestic and international investors, while concurrently augmenting investments in infrastructure to generate employment chances, alleviate poverty, and maintain sustainable economic growth.

In a recent study completed by Suyanto (2023), an examination was conducted to investigate if the Covid-19 epidemic has had an effect on the delegation of monies to the East province of Indonesia. The research investigates the impact a change in government disbursements caused by the epidemic. Linear multiple regression techniques were used to model the cross-sectional data obtained from 38 districts. The research found no noticeable changes in the strategy for decentralising funds, the human development index, and public funds spending on domestic amenity. Nevertheless, the analysis found vertical fiscal imbalance had a major optimistic influence on economic development earlier to the Covid-19 pandemic, but does not have noticeable impact all through the pandemic. On the other hand, the study did not assess the direct correlation between different sectors expenditure and the human development index.

Iheoma (2021) states that the global economy has experienced volatility, leading to an increasing need for administrations of Economic Community of West African States (ECOWAS) nations to contribute additional funds to the healthcare sector. The research study utilized the panel autoregressive distributed lag (ARDL) technique to ascertain that per capita health spending is influenced by long-term factors such as population increase and economic uncertainty. It was discovered that when the model was divided into distinct income categories based on the nations involved, an adverse relationship between healthcare spending and economic improbability was identified in low-income economies. This adverse correlation maintained in both the immediate and extended periods. Moreover, it revealed the scope of the population has a negative impact on the amount of healthcare spending per person in lower-middle-income nations in the ECOWAS area. The findings suggest the existing reliance on government support for the health industry is considered to be unviable. Consequently, it suggests the necessity of exploring alternative funding sources, such as private and public sector efforts, to support the sector.

Research Methods

This study adopted a non-experimental design in an attempt to fulfil its objective.

The study focuses on the population of the Nigerian economy. The statistics for the research was obtained through secondary sources by utilizing relevant information derived on the CBN statistical bulletin, Nigeria stock exchange and Nigeria Statistics Bureau data between 1985 and 2022 investigate the impact of an aggregate demand shock on the growth of the Nigerian economy. The study's analytical approach was restricted to the use of E-view software. The ordinary least square method (using Panel data) was use to investigate the relationships between the variables. The accepted model for simple linear regression in this work is represented by the functional form Y = f(x). In accordance with the study objectives, the equation was adopted in its explicit form.

$GDP = \beta_0 + \beta_1 + AGD + e$ ..... (1)

$GNI = \beta_0 + \beta_1 + AGD + e$ ..... (2)

Where;

GDP= Domestic Product (dependent variable)

GNI = Gross National income

AGD= Aggregate demand/Total Expenditure (Independent variables)

β_0 and β_1 = Regression coefficients for the estimated variables.

e - Error term (Term indicating a mistake or inaccuracy)

Data Presentation

Test summary for hypothesis one

H_{01}: Aggregate Demand/Total expenditure (AD) does not possess a substantial effect on the GDP of the Nigerian economy.

Dependent Variable: Gross Domestic Product
Method: Least Squares
Date: 05/27/24 Time: 20:54
Sample (adjusted): 1985 2018
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Total Expenditure	18.41041	0.634752	29.00408	0.0000
C	-4178.047	1764.941	-2.367244	0.0241

R-squared	0.963355	Mean dependent var	30793.44
Adjusted R-squared	0.962210	S.D. dependent var	38659.78

S.E. of regression	7515.369	Akaike info criterion	20.74431
Sum squared resid	1.81E+09	Schwarz criterion	20.83410
Log likelihood	-350.6533	Hannan-Quinn criter.	20.77493
F-statistic	841.2367	Durbin-Watson stat	0.416645
Prob(F-statistic)	0.000000		

Source: Researcher's computation, 2024

The coefficient estimate for Total Expenditure in the regression model is 18.41041, indicating that for any single rise in Total Expenditure; dependent variable is estimated to rise by 18.41041 units, all things being equal. The coefficient estimate is associated by a standard error of 0.634752. The t-statistic for the coefficient of Total Expenditure has been computed to be 29.00408. The statistical analysis reveals that the p-value corresponding to the coefficient of Total Expenditure is 0.0000. The coefficient estimate observed for Total Expenditure indicates a positive association between Total Expenditure and GDP. The analysis indicates a favourable connection among Total Expenditure and GDP. Each incremental unit increase in Total Expenditure is anticipated to result in a corresponding approximate increase of 18.41041 units in GDP. The t-statistic associated with the Total Expenditure coefficient exhibits a remarkably high value of 29.00408, suggesting a substantial level of statistical significance. The findings of this analysis indicate that the coefficient associated with Total Expenditure exhibits a notable deviation from zero, thereby implying that the relationship between Total Expenditure and GDP is highly probable to possess statistical significance.

Test summary for hypothesis Two

H_{02}: There is no apparent relationship between Aggregate Demand/Total expenditure (AD) and the Gross National Income (GNI) of the Nigeria economy.

Dependent Variable: Gross National Income
Method: Least Squares
Date: 05/27/24 Time: 20:55
Sample (adjusted): 1985 2018
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Total Expenditure	0.076200	0.005515	13.81603	0.0000
C	40.13794	15.33542	2.617336	0.0134

R-squared	0.856427	Mean dependent var	184.8829
Adjusted R-squared	0.851940	S.D. dependent var	169.7058
S.E. of regression	65.30039	Akaike info criterion	11.25290
Sum squared resid	136452.5	Schwarz criterion	11.34268
Log likelihood	-189.2992	Hannan-Quinn criter.	11.28351
F-statistic	190.8826	Durbin-Watson stat	0.433503
Prob(F-statistic)	0.000000		

Source: Researcher's computation, 2024

The regression model reveals a coefficient of 0.076200 for the variable of Total Expenditure. The coefficient estimate is associated by a standard error of 0.005515. The t-statistic, that measures the significance of the coefficient of Total Expenditure, has been computed to be 13.81603. The p-value corresponding to the coefficient of Total Expenditure is determined to be 0.0000. The coefficient estimate for Total Expenditure indicates a favourable relationship with GNI. The analysis indicates a positive correlation between Total Expenditure and GNI. Specifically, the findings indicate that for every unit increase in Total Expenditure, it is anticipated that GNI will increase by approximately 0.076200 units. The t-statistic of 13.81603 observed for the Total Expenditure coefficient suggests a high statistical significance. The outcome of this analysis suggests that there exists strong evidence to support the notion that the coefficient associated with Total Expenditure is indeed distinct from zero. Furthermore, it is very probable that there exist a statistically significant relationship among Total Expenditure as well as GNI.

Discussion of findings

The present study employed regression analysis to investigate the association between GDP, GNI, and Total Expenditure.

Results pertaining to each variable are as follows:

The examination of data has uncovered a robust and statistically significant positive relationship between GDP and Total Expenditure. The study's findings suggest a beneficial association among Total Expenditure and GDP. Specifically, a one-unit increase in Total Expenditure is estimated to result in an approximate 18,410.41 increase in GDP. The obtained coefficient exhibited statistical significance, indicating that alterations in Total Expenditure exert a significant influence on GDP.

The GNI is a measure similar to the GDP. In our analysis, we have observed a positive correlation between Total Expenditure and GNI. The findings suggest a positive correlation between an increase in Total Expenditure and a corresponding approximate increase of 0.076200 in Gross National Income (GNI). The statistical significance of the coefficient pertaining to Total Expenditure underscores the influence exerted by this variable on Gross National Income (GNI).

Conclusion

The findings of the analysis reveal a noteworthy correlation between Total Expenditure and both GDP and GNI, indicating a favourable relationship among each of these factors. The statistical significance of the coefficients pertaining to Total Expenditure suggests a notable influence of this variable on the observed economic indicators. The outcomes of the analysis show a significant correlation among Total Expenditure and substantial advancements in GDP and GNI. In light of evidences presented, it can be inferred that the study reveals a noteworthy correlation among Total Expenditure and economic growth, as assessed through metrics of GDP and GNI. The findings of this research point to the fact that the involvement of government expenditure, investment, and consumption is of utmost significance in propelling economic growth. The results hold significant effects on the formulation and implementation of economic policies, as well as for the process of decision-making in various contexts.

According to the observed data gathered, it is highly recommended that policymakers carefully deliberate upon the potential advantages associated with augmenting Total Expenditure as a means to foster and bolster economic growth. However, it is of utmost importance to guarantee that such expenditure is conducted in an efficient manner, with a clear focus on specific objectives, and in accordance with overarching economic objectives. The present study aims to enhance our

comprehension of the factors that influence economic growth, specifically emphasising the significance of Total Expenditure. The main focus of this investigation is on the identification of the pivotal role that government spending and consumption patterns play in promoting and nurturing economic development. The significance of data-driven economic policy is emphasized by the research findings.

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