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AN EXAMINATION OF MACROECONOMIC DETERMINANTS OF ECONOMIC GROWTH IN NIGERIA: A REGRESSION ANALYSIS MODEL

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KeyWords
Real Gross Domestic Product, Unemployment, Foreign Direct Investment, Inflation, Economic growth, Nigeria.

ABSTRACT
This study is on macroeconomic determinants of economic growth in Nigeria between the period of 1991 and 2019. The main objective of the study was to investigate some macroeconomic determinants of growth in Nigeria and further assess the variables and their influence on economic growth. The study made use of secondary data sourced from the 2021 Statistical Bulletin of the Central Bank of Nigeria and from the 2021 database of the World Bank. The Ex Post Facto research design was employed for the study. Both Simple Linear and Multiple regression analysis using SPSS were employed using Gross Domestic Product (GDP) as the dependent variable while Unemployment, Inflation and Foreign Direct Investment were considered as the explanatory variables. The Johansen Co-integration test and the error correction model were also applied in the study. The results showed that Unemployment and FDI had positive effects on Economic growth while Inflation had a negative effect. It also indicated the validity of short run equilibrium relationship between variables under study. The study recommended the need for government to create a business friendly environment and enact policies to encourage foreign investment inflows. Government should further develop critical and urgent policies that will support and drive production activities in all sectors to arrest the rising unemployment then proffer fiscal and monetary policies to assist in tackling inflation.

1.0 INTRODUCTION

1.1 Background to the Study

A persistent increase in per capita national output or net national product over a lengthy period of time is referred to as economic growth. It's also the year-over-year increase in the monetary worth of an economy's aggregate production. Economic growth is quantified as a percentage change in Gross National Product (GNP) or Gross Domestic Product (GDP), which is a core macroeconomic policy goal for any country in the world (Nyoni & Bonga, 2018). The major objective of every National Government is to improve the standard of living of its citizens and drive the country's economic growth and development. Due to the limited resources abounding in each country, countries are compelled to depend on each other in order to promote economic growth and attain sustainable development.

The fundamental policy thrust of the Nigerian government's developmental goals continues to be economic growth, which is a necessity for economic development. Policies aiming at changing and reorganizing the real economy are being implemented in order to achieve economic growth. Some of the policies involved the use of export promotion strategies, imports substitution strategy, subsidy payments, transfer payments and the CBN agricultural, health & developmental intervention schemes. The fundamental objectives of these policies as recommended in the research study of Gisaor, Bobbo and Danjuma (2021) include poverty reduction, price stability, human development and wellbeing of the citizens, reduction in unemployment, output development and sustainable growth. These goals must be met in order for the country's long-term economic prosperity to be realized.

Despite these macroeconomic policy initiatives, the Nigerian economy has performed poorly in terms of growth. The unending hardship being experienced by Nigerians today due to the high cost of food items, goods and services and high rate of unemployment is an issue of serious concern (Onwubuariri, Oladeji and Bank-ola, 2021; Obele, 2019; Osuji, 2020) . World Bank (2021) affirms that the rising prices of food items in Nigeria has plunged an estimated seven million Nigerians below the poverty line in 2020 alone and accounted for over 60 percent of the total increase in inflation. The World Bank report highlighted the effects of unemployment and underemployment on Nigeria. It said less productive *workers have become prime recruiting targets for criminal groups like Boko Haram and Armed Militias. This has intensified violence and widespread criminality further eroding the labour market and contributing to a vicious cycle of underemployment and political instability. In other words, creating adequate productive employment is thus a priority not only for economic policy but also for national security and economic development.*

A major reason why economic growth factors have been given much attention is that a sustained economic growth is critical for a nation's long-term development and stability thus making it pertinent for policy makers to investigate factors driving economic growth as seen in the studies of Tenzin (2019), Anichebe (2019), Osuji (2020), Gisaor, Bobbo, and Danjuma (2021). The Nigerian economy just like other developing countries has had its own historical share of turbulent economic growth. In 1960-70, the country recorded a GDP annual growth of 3.1 per cent, in 1970-78, GDP positively grew by 6.2 per cent annually which was the oil boom period. The 1980s witnessed negative growth while 1988-1997, GDP grew by 4 per cent (Ekpo and Umoh, 2004). According to Ekpo and Umoh (2004);Obele (2019); Gisaor, Bobbo, and Danjuma (2021), this observed phenomenon was blamed majorly on high fiscal deficits, mounting foreign debts, high inflation, high unemployment and unstable political terrain alongside corruption. The abysmal performance of the Nigerian state given its abundant resources calls for an in-depth review of the main factors responsible for economic growth in the country in comparison to experiences of other economies. Asian countries like Malaysia, India, China and Indonesia that previously had lower GDP in the past have now transformed their economies into major players in the world economic terrain. China for example who ranked 114th in 1970 (GDP per capita of US$111.82) has taken up the position as the second-largest market globally in comparison to Nigeria in 1970 with a ranking of 88th position (GDP per capita of US$233.35), (Sanusi, 2010).

Many studies on the impact of economic growth drivers have been conducted, with contradicting results from different academics in the likes of Gisaor, Bobbo, and Danjuma (2021); Tenzin (2019); Khan (2020); Longe and Omitogun (2017). This is due to the fact that each country's macroeconomic conditions are distinct, as well as the fact that each dataset and year of research is different, as well as the fact that each analysis, approach, and model specification is different. Despite these, little or no study has been conducted on the economic growth determinants (Unemployment, FDI and Inflation) using data-sets of 1991 to 2018 alongside the adoption of simple and multilinear regression models hence the reason for the study.

Based on the foregoing, the primary goal of this research is to investigate the influence of macroeconomic factors on Nigerian economic growth from 1991 to 2018. Unemployment, Foreign Direct Investment, and Inflation were the macroeconomic metrics considered in this study. The precise goals are as follows:

i. Determine the impact of macroeconomic indicators on Nigerian economic growth.
ii. To determine the independent impact of each macroeconomic indicator on Nigerian economic growth.

1.2 Research Questions

i. How do unemployment, foreign direct investment, and inflation affect Nigeria's economic growth?
ii. What is the effect of each macroeconomic indicator on Nigerian economic growth on its own?

1.3 Research Hypothesis

The following hypotheses were developed in accordance with the study's aims.

Ho_1: Unemployment, foreign direct investment, and inflation have no substantial effect on Nigeria's economic growth.

Ho_2: In Nigeria, no single macroeconomic indicator has a major independent effect on economic growth.

1.4 Scope and limitations of the study

The scope is limited to 3 macroeconomic indicators of growth (Unemployment, Foreign Direct Investment and Inflation) over a 29years period using time series data whereas Real GDP was utilized as the indicator measure for Economic growth. The study location was restricted to Nigeria. A problem encountered during the research study was the having the data of the variables in different measurement metrics as such the log of the data had to be taken in order to reduce the level of errors and to make moderately skewed data more normally distributed or to achieve constant variance.

2.0 Review of Related Literature

2.1 Conceptual Framework

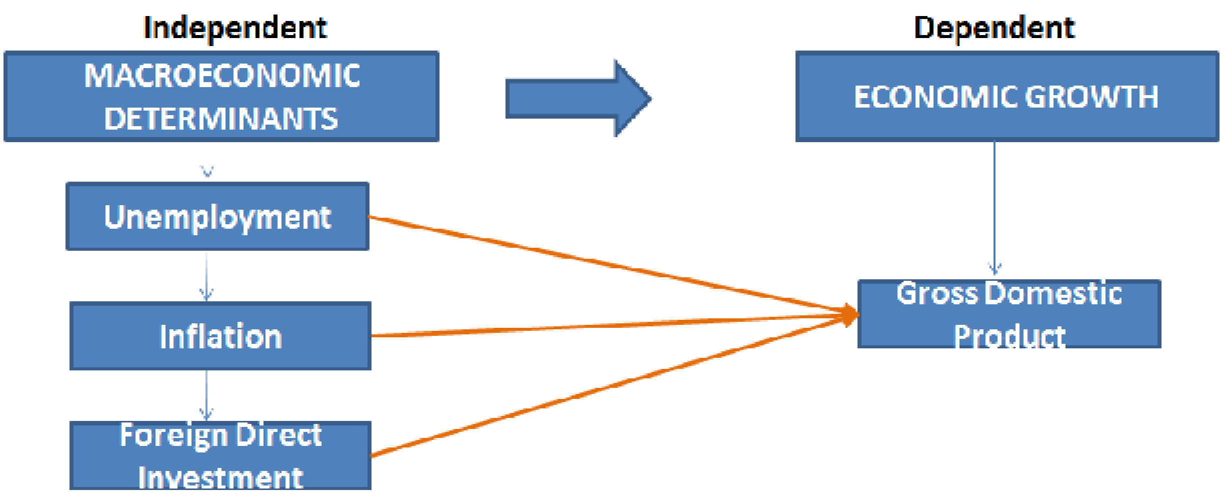

FIG 1

Fig 1 gives an overview of the conceptual framework of the study. GDP (Gross Domestic Product) has become widely used as a reference indicator for determining the economic growth of countries. It is a monetary indicator of the monetary worth of final goods and services generated in a given economy over time. Its significance stems from the fact that it provides information on the size and performance of an economy. Increases in GDP are viewed as a sign that an economy is performing well in general. Economies go through phases of rapid expansion and then times of sluggish growth or perhaps even recession. An alternative concept known as GNP (Gross National Product) refers to the total productive output arising from the residents of a country. For example, if a Nigerian owned firm has a factory in China, the output of the factory will be captured in the GDP of China and be captured in the GNP of Nigeria. Not all activities are captured in GDP such as unpaid work (work performed by housewives, volunteering activities, etc.) and black market activities because they are difficult to measure and value accurately. GDP does not take into cognizance the wear and tear of capital stock (machineries and buildings) that are used in production. This depleted capital stock is referred to as depreciation which when subtracted from GDP results in net GDP.

2.1.1 Unemployment

Unemployment is one of the major problems currently being faced in Nigeria. According to Obele (2019), unemployment is a well-known global economic concern that stifles economic growth. It is discovered to be one of the major hurdles to huge waste of a country's labor resources, resulting in reduced productivity, lower income, and sluggish economic growth. Unemployment refers to a condition in which people who are capable, qualified, physically healthy, and willing to work at any moment are unable to find work. Unemployment and economic growth have remained major issues for all countries, regardless of their degree of development. Unemployment has been one of the most chronic and unsolvable macroeconomic difficulties facing developing countries, particularly African countries, according to Khan (2020). Any economy's total national output must exceed its total population for a certain period of time in order for it to develop. Most developing countries in Africa and some parts of the world are experiencing the inverse of the last statement, which can be linked to bad management or underutilization of national resources.

Economic policies are geared toward ensuring economic growth and lowering unemployment. Despite the extensive literature on the correlations involving economic growth and unemployment, there is no agreement on the magnitude and direction of the relationship, as disparities in economic systems of nations have a significant impact on the relationship (Ozel et al, 2013). In his analysis using data from the US economy, Okun (1962) proposed that there is an inverse link involving real output and unemployment. His position became known as Okun's law in economics theory, which said that when economic growth exceeds 2.25 percent, each 1 percent gain in real output results in a 0.5 percent decrease in the unemployment rate. The empirical relationship between changes in aggregate output and changes in the unemployment rate is known as Okun's law. Okun's law specifies how much of a country's gross domestic product (GDP) can be lost if unemployment rises above its natural rate. Longe and Omitogun (2017) affirmed that unemployment was one of the significant variables mitigating the growth of the Nigerian economy and this is due to widespread corruption and mishandling of public finances throughout time. Inflation and unemployment, as Tenzin (2019) points out, have a detrimental impact on individual perceptions of personal well-being as well as a nation's past and present well-being.

2.1.2 Inflation

Inflation is defined as a steady increase in the overall price of goods and services in a given economy. Inflation, according to (Osuji 2020) and Fakutukasi (2012), is a sustained rise in the general price level within an economy that impacts the value of the domestic currency. Inflation, according to Osuji (2020), stifles growth and development by causing economic distortions and uncertainty, inhibiting long-term planning, and lowering savings and capital accumulation. As a result, high inflation rates have become a key cause of concern for most countries' monetary authorities and policymakers as opined by Onwubuariri, Oladeji, and Bank-ola (2021). Maintaining price stability is still one of the most important goals of monetary policy in most nations today, including Nigeria. It is no longer news that different countries all over the world experience inflation. Probably the differences in inflationary periods can be tied to the timing, duration, causes and their prevailing economic situations. All national economies around the world, whether established, developing, or undeveloped, are experiencing price increases. It could be minor swings for certain countries, while it could be a steady and continual rise in price for others.

In Nigeria, prices have risen in recent years, and the country has experienced economic growth as well. Inflation has become a major source of concern for economic analysts, as it is a fact that citizens' real incomes are affected during inflationary periods unless compensating revenues such as subsidies or pay increases are implemented. The latter becomes an economic issue when it is not accompanied by greater productivity since it will lead to increased inflationary patterns in the economy because the value of money will have declined if the enhanced salaries do not result in increased production and this can also be seen in the studies of Onwubuariri, Oladeji, and Bank-ola (2021), and also Tenzin (2019). Despite the Nigerian government's efforts to reduce inflation, these measures have failed to produce any beneficial or intended results, as high prices have remained unabated, producing setbacks in the rate of rise of most Nigerians' living standards (Fatukasi, 2012). He noted that it had a negative impact on investment productivity, the balance of payments, and thus the Gross Domestic Product growth rate. The wholesome or producer price index, the Consumer Price Index, and the Gross National Product Implicit deflator are three approaches to inflation assessment, according to Kromtit (2015).

2.1.3 Foreign Direct Investment (FDI)

Anichebe (2019) defines foreign direct investment as net inflows of capital used to acquire a long-term managerial stake in a company functioning in the host country's economy. As demonstrated in the balance of payments, it is also the sum of earnings reinvestment, equity capital, other long-term investment, and short-term investments. Foreign direct investment not only gives much-needed finance to developing countries, but it also boosts job creation, managerial skills, and technology transfer. All of these factors contribute to economic development and growth as affirmed by Kulu, Mensah and Sena (2021). One of the most important features of today's globalization movement is the deliberate promotion of cross-border investments, particularly by multinational firms. Many countries, particularly developing ones, increasingly regard soliciting FDI as a critical component of their economic growth and development plan. Because of its well-known benefits as a tool for economic development, most countries aim to attract foreign direct investment (FDI). African countries (including Nigeria) have joined the rest of the world in seeking FDI, as evidenced by the development of the New Partnership for Africa's Development (NEPAD), which includes attracting FDI to Africa as a key component (Ayanwale, 2007).

Scholars have demonstrated that FDI is a significant driver of economic growth, arguing that FDI flows can bridge the gap between required investments and locally generated savings (Nyoni and Bonga, 2018). Several writers in Nigeria, including Anichebe (2019), Adeleke et al (2014), Udeaja and Obi (2015), Mohammed and Ehikioya (2015), have proven that FDI has a favorable impact on economic growth and has the potential to increase tax revenues as well as adopt new technologies and skilled labour. Increased

FDI inflows will assist the country in breaking free from the shackles of abject poverty. Hsiao and Hsiao (2006) found that FDI is a strong antecedent to economic growth and that it causes growth in both the short and long term in a study of selected Asian countries. Another notable finding of their research is that FDI has a significant role in the development of the East Asian economy, implying that countries that succeed in recruiting FDI can create more investment, resulting in faster overall growth and development. The evidence of research studies of economic growth determinants suggests that Nigeria needs to learn a lot of lessons from the studies on growth, especially for emerging countries.

2.2 Theoretical framework

2.2.1 Harrod Domar's Theory

Keynes' short-term study of full employment and income theory includes Harrod Domar's Theory. The Harrod Domar's model exemplifies a long-term output hypothesis. It developed a model which focused on the conditions for a stable economy's growth. As a result, capital stockpiles are an important component in an economy's growth. They proposed that capital accumulation not only generates revenue but also boosts an economy's output capability. If a construction factory were to be created, it would create jobs and contribute to the economy's productive capacity through its operations. Demand for products and services is created as a result of newly generated income resulting from investment or capital accumulation. The Harrod Domar's theory goes on to say that the most important criterion for economic growth is that the demand generated by newly acquired income is adequate to absorb the output produced by the investment completely. This requirement must be met in a timely manner in order to ensure high employment and long-term economic growth (Lukasz 2014).

2.2.2 Theories of Inflation

Inflation can be induced by a rise in production costs as a result of wage increases or increases in input prices, according to the cost-push inflation theory. According to the modern quantity theory of money, inflation is always a monetary phenomena caused by a faster increase in the quantity of money than the quantity of production. These theories unanimously assert that inflation influences economic growth negatively. Although there are a few circumstances whereby inflation could actually help economic growth, for example, a greater inflation projection can lower the real rate of interest, causing portfolio changes to shift from real money to real capital, supporting real investment and growth of the economy. Inflation in Nigeria has been positively benefiting the growth of Nigerian economy, according to research extracts from Umaru & Zubairu (2012) and Olu & Idih (2015), but Babatunde and Shuaibu (2011) including Uwakaeme (2015) discovered that Inflation negatively affects economic growth in Nigeria.

2.3 Empirical review

Onwubuariri, Oladeji and Bank-ola (2021) evaluated the the impact of inflation on Nigeria's economic growth from 1980 to 2019. Data collected were analysed using the Autoregressive Distribution Lag (ARDL) model and the Error Correction Model (ECM). Results indicated that inflation negatively affected economic growth over the years as it reduces competitiveness as well as lowering the purchasing power of money. They advised that measures be put in place by the CBN through the Monetary Policy Committee to ensure that the rate of inflation is reduced to the barest minimum.

Kulu, Mensah and Sena (2021) analyzed the individual and combined effect of foreign direct investment and institutions on economic growth in Ghana using the ARDL technique on data obtained from 1995 to 2019 from the world bank database. The results of the ARDL model indicated that FDI had a significantly positive effect on the country's economic growth compared to their individual effects in both the short and long run. The study recommends that government policies be aimed at attracting foreign direct investment while strengthening institutions and regulations to enhance output growth.

Using time series data from 1970 to 2018, Gisaor, Bobbo, and Danjuma (2021) empirically examined the validity of Okun's law in Nigeria, using the Auto Regressive Distribution Lag (ARDL) bounds test approach to examine the existence of long run linkages among selected macroeconomic variables and their relative impact on economic growth. It was discovered that, while Nigeria's unemployment rate is high, the country has relatively high economic growth, thus invalidating Okun's law. Government initiatives focused at boosting economic performance that is geared toward creating jobs for the people, as well as the implementation of skill development programs that will invariably lead to self-employment and agricultural mechanization, are recommended in the paper.

Dankumo et al (2020) investigated if Okun's Law (a negative association between unemployment and growth) holds in Nigeria using data covering 22 years period (1997 to 2017) by applying the ARDL bounds test approach. The result outcome showed that unemployment had a negative relationship with growth.

Using the ordinary least square econometric method, Osuji (2020) empirically studied the inflation effects on house-hold final consumption spending in Nigeria from 1981 to 2018. In Nigeria, the study found a substantial positive long-run link between inflation and household consumption spending. In order to decrease the negative impact of inflation on private consumption, the study also advised that the government maintain low and stable prices at all times.

Khan (2020) used the OLS and the augmented dickey-fuller unit root test to examine the impact of unemployment on Nigerian economic growth from 1999 to 2015. Unemployment has a negative and negligible impact on economic growth, according to the findings, with a 1% increase in unemployment resulting in a 0.04 decline in GDP. In order to alleviate unemployment, the report advised that the government focus on labor-intensive production techniques rather than capital-intensive techniques.

Anichebe (2019) investigated the effect of foreign direct investment on economic growth in Nigeria covering a period of 37 years from 1981 to 2017. The annual time series data for the study were analysed using the Ordinary least square (OLS) technique. The results of the estimated model showed that foreign direct investment had strong positive impact on economic growth. The study therefore concluded that foreign direct investment has long run impact on economic growth in Nigeria.

From 1998 to 2016, Tenzin (2019) investigated the relationship between economic growth, inflation, and unemployment. To estimate the influence of economic growth and inflation on unemployment, the ARDL model was used. The findings imply that economic expansion has little effect on the lowering of Bhutan's unemployment rate in the short or long term. In fact, as the economy grew, the unemployment rate grew as well. In the short run, however, an increase in the employment rate led to an increase in inflation. Similarly, if inflation is not monitored or controlled, the uncertainty of inflation can lead to poorer investment and economic growth, resulting in higher unemployment over time. According to the report, policymakers should consider employment elasticity in relation to economic production and concentrate on sectors with greater absorptive potential in terms of attracting young workers.

Obele (2019) used the OLS technique, stationary test, co-integration test, and error correction model to study the impact of unemployment on economic growth in Nigeria between 1986 and 2008. The study's findings revealed a long-term link between labour and growth. This finding supports the theory that high unemployment slows Nigeria's economic growth, with a one percent increase in unemployment resulting in an 11.56 percent drop in GDP. In order to boost job creation and growth, the report proposed that the Nigerian government be involved as significant participants in the establishment and management of economic and other types of enterprises.

Longe and Omitogun (2017) assessed the unemployment effect on Nigeria’s economic growth using the VAR model, Johansen co-integration test, Impulse response test and variance decomposition test on data sets from 1986 to 2015. Their findings indicated a long-term link between GDP, inflation and unemployment among other variables. They further showed that unemployment and inflation rates were strong determinants of the country’s economic growth recommended the government to concentrate on cushioning the rising unemployment rate.

Akinkunmi (2017) analysed the Nigerian economic growth patterns since independence to 2015 alongside its determinants using the autoregressive lag model (ARDL) and time series analysis approach. The outcome of their study indicated that the long-run economic growth was significantly influenced by the levels of investments and advised that government address measures that could hinder levels of investments without compromising the people’s welfare.

Pokrivčák and Záhorský (2016) investigated the determinants of economic growth across 10 Central and Eastern European Countries using secondary data from 2004 to 2012. Growth accounting technique and regression analysis were applied and their findings showed that FDI among other variables had impacts on GDP.

Olu and Idih (2015) investigated the relationship between economic growth rate and inflation based on available 1980 to 2013 using the ordinary least squares and multiple regression analysis. Their findings revealed that inflation rate and apriori expectancies had a positive link with economic growth rate, however the relationship was weak. This shows that GDP has a direct proportional relationship with inflation, indicating that Nigeria's monetary policies have failed to successfully combat inflation. They recommended that inflation be stabilized through effective monetary policy in order to achieve long-term economic growth.

Uwakeme (2015) looked at the primary economic growth factors as well as the direction of causality between certain economic growth indicators and growth. They found that FDI, among other variables, was a major growth determinant using Johansen Co-integration and Granger causality tests on secondary data. Inflation and a large government fiscal deficit had a major negative impact on economic growth. They advised that government enact stable policies in order to promote trade and investment (foreign & domestic).

Kromtit (2015) used the augmented dickey-fuller and granger-causality in conjunction with the ordinary least squares technique to analyze the efficacy of monetary policy in regulating inflation in the Nigerian economy. They discovered that economic growth had a large and beneficial impact on inflation in Nigeria, indicating that monetary policy in the country had failed to successfully stabilize prices. They suggested that, in order for monetary policies to be successful in curbing inflation, financial inclusion should be enhanced, and measures for controlling the money supply and other monetary indicators should be implemented.

In a study published in 2014, Abdel-Khaliq, Soufan, and Shihab looked at the relationship involving unmployment and economic growth in nine Arab countries. The Pooled-EGLS (Cross section SUR) was used to look at data between 1994 and 2010. They discovered that economic growth had a significant and negative effect on unemployment rates, meaning that a 1% rise in economic growth resulted in a 0.16 percent drop in unemployment.

Ozei, Sezgin, and Topkaya (2013) investigated the link between unemloyment levels and economic growth in the G7 developed nations. . Their findings showed that, while output and economic growth factors have strong and significant effects on the drop of unemployment within the three-crisis period, output becomes negligible after the crisis, whilst the effect of economic growth as a decreasing effect on unemployment persists and the impact level rises.

Muhammad, Umer and Ahmed (2012) analysed the impact of FDI in Pakistan for the period of 1981 to2000 using multiple regression model on available secondary data. Findings revealed that FDI and GDP have a positive and significant association, while GDP and inflation have a negative but significant relationship. They came to the conclusion that FDI is a critical component of economic progress in developing nations because it provides for technology transfer, human capital development, increased domestic market competitiveness, and increased corporate tax profits.

Using the augmented dickey-fuller technique and the granger-causality test, Umaru and Zubairu (2012) assessed the influence of inflation on Nigerian economic growth and development. Inflation had a favourable effect on economic growth, according to their findings. They stated that inflation can only be minimized to the barest minimum by increase in GDP (output level). Hence government should push for productivity in order to reduce prices of goods & services in order to boost economic growth.

Using the augmented growth model, OLS, and 2SLS methodologies, Ayanwale (2007) investigated the empirical link between non-extractive FDI and economic growth in Nigeria, as well as the factors of DI into Nigeria. Market size, infrastructure development, and stable macroeconomic policies were all found to be predictors of FDI in Nigeria. The findings also revealed that, while FDI as a whole may not have a major impact on economic growth, the FDI components do.

3.0 Methodology

Ex Post Facto research design was used in conjunction with a causal-comparative experimental research design. This was due to the study's specific objectives as well as the fact that historical data was employed. The goal was to quantitatively analyze and statistically assess whether the independent variables affected the dependent variable using historical data without the researcher altering or modifying any of the variables.

3.1 Data Source

The secondary data used for this study was spooled from the Central Bank of Nigeria's 2021 statistical bulletin and the World Bank's 2021 databases.

3.1 Data Analysis

The data collected was analysed using simple and multiple linear regressions. Real Gross Domestic Product (RGDP) was used as an indicator of economic growth. Real GDP was regressed against Unemployment rate, Inflation rate (INF) and Foreign Direct Investment (FDI). The Natural log of the variables was determined in order to normalise the dataset. The Johansen co-integration test and error correction model was also applied in the study to test for long-run linkages among the variables and their relative effect on economic growth.

3.2 Model Specification

The study applied the simple and multiple linear regression models. The multiple regression model is expressed as below and SPSS 25 was used to carry out the regression analysis:

Real GDP = f (Unemployment, Foreign Direct investment, Inflation) ………… (1)

$RGDP = P_0 + P_1UR + P_2FDI + P_3INF + et$ ………… (2)

Logarithmic transformation will give:

$LRGDP = P_0 + P_1LUR + P_2LFDI + P_3LINF + et$ ………… (3)

The simple linear regression model was used to ascertain the strength of each independent variable on the dependent variable as represented below:

$LRGDP = P_0 + P_1LUR + et$ ………… (4)

$LRGDP = P_0 + P_1LINF + et$ ………… (5)

$LRGDP = P_0 + P_1LFDI + et$ ………… (6)

Where RGDP = real gross domestic product, P_0 = intercept, P_1 to P_3 = coefficient of the variables, FDI = foreign direct investment, UR = unemployment rate, INF = inflation and et = stochastic term (error term).

The a priori expectations are $P_1, P_2, P_3 > 0$

4.0 Data Presentation, Findings and Discussion.

Logarithmic form of the data set as seen in Table 4.1 was used for hypothesis testing

Table 4.1

Year	L-GDP Growth rate	L-Unemployment Rate	L-Inflation Rate	L-FDI
2019	4.854	0.908	1.057	0.519
2018	4.844	0.916	1.082	0.301
2017	4.836	0.924	1.218	0.544
2016	4.832	0.849	1.195	0.648
2015	4.839	0.634	0.955	0.486
2014	4.827	0.659	0.906	0.671
2013	4.801	0.568	0.928	0.745
2012	4.778	0.573	1.087	0.849
2011	4.760	0.576	1.035	0.946
2010	4.737	0.576	1.137	0.780
2009	4.698	0.571	1.099	0.932
2008	4.663	0.549	1.064	0.913
2007	4.633	0.553	0.732	0.781
2006	4.602	0.562	0.915	0.686
2005	4.574	0.573	1.252	0.697

2004	4.544	0.579	1.176	0.272
2003	4.501	0.582	1.147	0.303
2002	4.462	0.582	1.110	0.276
2001	4.403	0.577	1.276	0.076
2000	4.375	0.577	0.841	0.057
1999	4.351	0.579	0.821	0.000
1998	4.349	0.575	1.000	-0.523
1997	4.338	0.575	0.931	-0.328
1996	4.326	0.576	1.466	-0.301
1995	4.309	0.575	1.862	-0.469
1994	4.301	0.575	1.756	0.292
1993	4.299	0.573	1.757	0.130
1992	4.293	0.565	1.649	-0.046
1991	4.283	0.561	1.114	-0.149

Source: CBN 2021 Statistical Bulletin and World Bank 2021 Database

Test of hypothesis one

Ho_1: Unemployment, foreign direct investment, and inflation have no substantial effect on Nigeria's economic growth.

H_{A1}: There is a significant effect of Unemployment, Foreign Direct Investment and Inflation on the economic growth in Nigeria.

TABLE 1: Multiple Linear Regression Result of Indicators

VARIABLE	**R^2**	**F-Statistics**	**Model Significance**	**T-Statistics**	**Variables Significance**
Generalized Model	0.866	53.711	-	0.000	-
Coefficients					
LUR	-	-	6.280	-	0.000
LINF	-	-	-2.459	-	0.021
LFDI	-	-	8.233	-	0.000

Source: Extracted from SPSS Results, 2021

Table 2 shows the multiple regression result obtained from equation (3). The R2 result returned a value of 0.866 which implies that the variables when considered together will influence 86.6 percent of the changes in real GDP. It returned a significant value of 0.000 which showed that the indicators can predict outcome in real GDP (economic growth) at 1 percent confidence level. The outlook of the coefficients of the components showed unemployment was statistically significant to economic growth with a positive t-score of 6.280 and a p-value of 0.000. The inflation rate was not statistically significant to economic growth but showed an inverse relationship to economic growth using the data set. FDI was statistically significant at 1 percent confident level. The t-score showed a positive relationship between FDI and real GDP. Hence alternative hypothesis **H_{A1}** is accepted.

Test of hypothesis two

Ho_2: In Nigeria, no single macroeconomic indicator has a major independent effect on economic growth.

H_{A2}: There is a positive significant independent effect of Unemployment and FDI variables on economic growth in Nigeria. However, inflation statistically had a negatively significant effect or an inverse effect to economic growth.

TABLE 2: Simple Linear Regression Result of Indicators

VARIABLE	R^2	F-Statistics	Model Significance	T-Statistics	Variables Significance
LUR	0.322	12.852	0.001	3.585	0.001
LINF	0.206	7.011	0.013	-2.648	0.013
LFDI	0.620	44.137	0.000	6.644	0.000

Source: Extracted from SPSS Results, 2021 **Dependent Variable: LGDP**

Table 2 shows a collated result of the simple linear regression (equations 4, 5 & 6). LUR shows the result of unemployment predicting economic growth in Nigeria (RGDP). The R^2 returned a value of 0.322 which implies that unemployment is responsible for 32.2 percent of the changes in Real GDP. The model was statistically significant at 1 percent confidence level (p-value = 0.001) while the F-statistics showed a positive relationship between unemployment and economic growth as seen in the studies of Tenzin (2019); Gisaor, Bobbo, and Danjuma (2021).
Regressing inflation rate against Real GDP revealed a statistically insignificant relationship (p-value >0.010). The R^2 value showed that inflation is responsible for 20.6 percent of the changes in economic growth. The T-statistics shows a negative (inverse) relationship between inflation rate and economic growth. This implies that increase in inflation will result in a reduction in economic growth in Nigeria as seen in the studies of Tenzin (2019); Onwubuariri, Oladeji, and Bank-ola (2021). Foreign Direct Investment (FDI) when regressed with Real GDP gave an R^2 value of 0.620 which implies that FDI affects 62 percent of RGDP. The model showed a goodness of fit of 44.137 (F-statistics) with statistically significant value of 0.000 (p-value<0.001). FDI was statistically significant at 1 percent confident level. The t-score showed a positive relationship between FDI and Real GDP as affirmed Anichebe (2019); Kulu, Mensah, and Sena (2021). Hence alternative hypothesis $\mathbf{H_{A2}}$ is accepted.

Policy Implication of Findings

According to the conclusions of the study, there are insufficient strong pragmatic measures aimed at combating Nigeria's high unemployment rate. This also suggests that the economic sectors responsible for the rising GDP did not transfer into actual production activities, which should have resulted in the country gaining high rates of employment. As such, the Nigerian government should strive to create a friendly investing climate to encourage the inflow of investments which should be directed at the real sector being the main engine room of any economy. With the necessary investment flows into the real sector, employment rate will rise alongside production activities which will in turn assist in lowering prices of goods and services thereby tackling inflation, as witnessed in other emerging nations.

5.0 Conclusion and Policy Recommendations.

This study has examined the macroeconomic determinants of economic growth in Nigeria for the duration of 1991 and 2019. Both linear and multi-regression model approaches were applied to ascertain the effect of the various macroeconomic variables (Unemployment, Inflation & FDI) on economic output growth (determined by Real GDP) in Nigeria. The independent variables were tested independently and jointly for their statistical significance on the dependable variable in order to determine the variation of the model and the relative contribution of each economic growth determinant to Real GDP. The study found that Unemployment, Inflation and FDI all contributed to economic growth in Nigeria. This shows that the short-run equilibrium relationship between the variables under investigation is valid indicating that the model has the ability to adjust and return to equilibrium on a regular basis. However, only Unemployment and Foreign direct Invest (FDI) positively contributed to economic growth while Inflation made an inverse contribution indicating that reduction in inflation will generate a positive effect on economic growth in Nigeria. The inverse effect of inflation to economic growth is affirmed by World Bank (2021), where high consumer prices in Nigeria have impoverished millions of its citizens below the poverty line and also supports the research findings of Onwubuariri, Oladeji and Bank-ola (2021), Osuji (2020), Umaru and Zubairu (2012), Babatunde and Shuaibu (2011) where a negative relationship was found between inflation and economic growth. Unemployment had a positive significance on economic growth signifying that as GDP rises, so does rate of unemployment. The result supports the research study of Gisaor, Bobbo, and Danjuma (2021), Tenzin (2019), Longe and Omitogun (2017), where they discovered that unemployment is a strong determinant of economic growth in Nigeria as opposed to the study outcomes of Dankumo et al (2020), Khan (2020), Ozel et al (2013) on G7 countries and Abdul-Khaliq et al (2014) on Arab countries where unemployment rate had an inverse relationship with economic growth. This suggests that there are no effective policies aimed at tackling unemployment in Nigeria further indicating that the economic sectors responsible for the increased GDP figures does not translate to actual production activities that ought to create employment. Foreign direct investment contributed positively to economic growth affirming the findings of research studies of Kulu, Mensah and Sena (2021) on Ghana, Anichebe (2019) on Nigeria, Muhammad et al (2012) on Pakistan, Ayanwale (2007) on Nigeria, Pokrivčák and Záhorský (2016) on CEE countries, Uwakaeme (2015) on Nigeria. This further suggests FDI as an important determinant of economic growth hence for Nigeria to optimize positively from FDI, it should ensure it provides an investor friendly environment inclusive of policies. In conclusion research finding indicates a Non-inclusive growth in Nigeria. It is recommended that government should create enabling investor friendly policies as well as policies to stimulate productive activities in the economy in order to boost output and generate employment.

Future Research Directions

It is recommended that further studies be conducted on the macroeconomic determinants of economic growth in African nations in comparison to other European or Asian nations using other varying methods of data analysis.

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