

EFFECTS OF NAIRA DEPRECIATION ON NIGERIAN ECONOMY (1999–2022)

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INTRODUCTION

The naira has depreciated significantly over the past few years. According to the Central Bank of Nigeria (CBN), the naira has lost about 30% of its value against the US dollar since 2015. This means that the naira is now worth less than it was a few years ago, and it can buy fewer dollars than it could before. In economics, depreciation is the decrease in the economic value of the nation or other entity, either through physical depreciation, obsolescence or changes in the demand for the services of the capital. Depreciation refers to two very different but related concepts which are decline assets to periods in which the assets are used.

Soludo (1987) said the drop in the value of the local currency was a government -supported devaluation in the face of falling oil prices. Oil revenue account for 90 percent of Nigerian's export revenue. Oil revenue has slumped more than 60 percent in the year (1972). The naira has dropped more than 23 percent since November (2016) when the central bank limits his supply of dollars to defend its foreign exchange reserves.

The central bank's depreciation policy has been criticized by some analysts who say it could have grave implications for import dependent Nigerian economy. Obadan (2005); stated that "each time the naira depreciates in relation to the dollar and pound sterling, it adds to the inflationary problems in the economy", Obadan (2004); also stated that the reason for it is that the production structure of the Nigerian economy is heavily dependent on the importation of inputs in the form of equipment. Therefore, each time the naira depreciates it makes the cost of importing all these inputs very high and the cost of production jacks up and the producers reflect the higher costs in higher prices".

The future of the Nigerian economy looks precarious, indeed the country's economy is under severe threat as crude petroleum, as the mainstay of the economy since the early 1970s has consistently headed south from last November (1974) Just as most experts have noted that forces that precipitated naira's value erosion over this periods are largely visible in the crash of the nation main foreign exchange earner which has fallen from an all-time high of about \$140 in July, 2008 to less than \$40 per barrel early January, 2009. What perhaps is making the scenario very disturbing is the fact that President Umar Yar'Adua had already predicated his 2009 budget on an exchange rate of N 117 – 8 per dollar, on the understanding that crude oil earnings would not fall below the \$45 benchmark.

But today, several things seem to. have fallen apart and the biggest challenge for the Central Bank of Nigeria, which had earlier this year (2023) assured Nigerian's that the global economic meltdown would not affect Nigerian and her economy, remains how to save the naira from nose-diving further. Economy experts have since argued that government's consent to the depreciation of naira at this time may not be unconnected with its attempt to partly finance the budget with proceeds from the market, since expectations of doing so through oil revenue is fast fading away with the crash in the price crude petroleum at the London spot market. The depreciation of the naira has generated enough heat to the country that the economy is now shaky or rather in shambles. The problem of this investigation is to identify the major causes of the depreciation of the naira with a view to proffering solutions to it. It is a very serious matter at this point in time when our economy is deregulated, that's the depreciation naira is getting much further. The depreciation of the Nigerian naira is a significant economic challenge that has far-reaching implications for the country's economy, businesses, and citizens. Several factors contribute to the

depreciation of the naira, and some of this factor are External Factors, Trade Imbalance, Inflation, Foreign Exchange Reserves and Monetary Policy.

Several studies have investigated the Causes & Effects of Naira Depreciation on Nigerian Economy with this studies having separate results. Daniel, (2023) study focuses on the impact of persistent depreciation of the Naira currency on the economic growth of Nigeria. It considers economic growth (GDP) as the dependent variable and Naira depreciation, interest rate, exchange rate, and inflation rate as independent variables. Employing the Augmented Dicker-Fuller (ADF) test and Autoregressive Distributed Lag (ARDL) bounds test, the research establishes negative long-run relationship between Naira depreciation and economic growth. Recommendations emphasize maintaining stable depreciation and imposing high tariffs on imports. However, the study lacks a comprehensive analysis across sectors and might benefit from a broader scope to account for various economic facets affected by Naira depreciation.

Awa, (2022) study investigates the effect of currency devaluation on the manufacturing sector performance in Nigeria. It considers variables such as exchange rate, inflationary rate, net import, and net export. Utilizing the Vector Error Correction and system Equation Estimation Technique, the research finds significant effects of exchange rate, inflation rate, net import, and net export on the manufacturing sector output. The study suggests that devaluation of the Naira makes exports cheaper and imports more expensive, impacting inflation and demand for exports. While acknowledging the benefits of devaluation, it calls for sound policies to moderate its effects on Nigerian firms. However, the study is limited in its narrow focus on the manufacturing sector without a broader analysis of other economic sectors affected by Naira devaluation.

Obaji, (2023), study analyzes the effects of persistent exchange rate depreciation and volume of imports on inflationary trends in Nigeria. It examines the impact of exchange rate depreciation and

imports on inflation rates using the Autoregressive Distributed Lag (ARDL) technique. The research highlights a negative impact of exchange rate on inflation but a positive influence of imports on inflation. Recommendations stress promoting local consumption of goods and managing exchange rate policies to curb inflationary pressures. However, the study's narrow focus on inflation and imports might limit its comprehensive understanding of the broader economic implications of Naira depreciation.

Also in Okoro, and Charles, (2019) their study delves into Naira exchange rate variations against various currencies and their impact on Nigeria's GDP. The research employs Ordinary Least Squares (OLS), cointegration, unit root, Granger causality test, and error correction estimate methodologies. Findings reveal diverse effects of different currencies on Nigeria's GDP. Recommendations emphasize better articulation of monetary and macroeconomic policies. However, the study's limitations lie in the varied effects across currencies and potential external variables not considered in the model, indicating a need for a more comprehensive analysis.

Caglar, & Titiloye, (2019) study aims to evaluate the effect of currency depreciation on economic growth in Nigeria from 1980 to 2017. It examines various variables such as exports, imports, inflation, interest rate, gross domestic product (GDP), and exchange rate. Secondary data sourced from the World Development Indicators (WDI) was utilized. The Auto-regressive Distributed Lag Model (ARDL) was adopted as the estimation technique. Findings suggest a significant impact of the exchange rate on Nigeria's economic growth. Recommendations include the importance of maintaining a stable exchange rate. However, the study is limited in its timeframe and might benefit from a more comprehensive analysis across various economic sectors to present a more holistic view of the effects of currency depreciation on Nigeria's economy.

Inuwa, et al., (2023) analyzed the effect of Naira devaluation on the Nigerian balance of trade using time series data from 1986 to 2021. It examines the relationship between devaluation and trade balance using unrestricted Vector Auto Regression (VAR), Co-integration, and Vector Error Correction Mechanism (VECM) techniques. The study finds variables such as currency devaluation (CDV), export rate (EXPT), import rate (IMPT), and trade balance as 1(1) variables, while interest rate (INTR) is 1(0) variable. Results indicate a long-run equilibrium relationship among these variables. Positive and negative shocks from Naira devaluation to trade balance, export rate, import rate, and currency devaluation are observed. The study concludes that Naira devaluation has a positive and significant impact on Nigeria's trade balance, recommending the enhancement of indigenous innovation to reduce import dependence and encourage competitive goods and services production.

While these studies have contributed substantially, they exhibit limitations that a new research project could aim to address. These include the absence of a unified and comprehensive analysis integrating various sectors of the economy. Additionally, methodological differences and the use of specific timeframes might have led to disparate conclusions. Therefore this research could strive to provide a more inclusive analysis, covering diverse sectors, employing a consistent methodology, and extending the timeframe for a holistic understanding of Naira depreciation's impact on the Nigerian economy. By reconciling conflicting findings and broadening the scope, this research aims to present a clearer and more distinctive understanding of the relationship between Naira depreciation and economic indicators, thereby offering more comprehensive insights for policymakers and stakeholders.

Objectives of the study

The main objective of this study is to examine the effect of depreciation of Nigeria Naira on the Economy and the specific objectives of the study are:

- i. To analyze the historical trend of Naira depreciation from 1990 to 2022.
- ii. To examine the major reasons for the depreciation of the Naira.
- iii. To proffer possible solutions to the problems of the depreciation of the nation's currency

Research Hypothesis

Based on the research problems and objectives of the study, the following hypothesis have been formulated:

H₀₁: There is no significant relationship between Naira depreciation and economic growth from 1990 to 2022.

2.1 Conceptual Issues

Currency is a medium of exchange that is widely accepted in transactions for goods and services in a particular country or region. It can take the form of notes, coins, or digital tokens. According to Mankiw and Taylor (2017), the value of currency is derived from the trust that people place in the issuing authority, typically a central bank or a government (Mankiw & Taylor, 2017).

The history of currency dates back to ancient times when people used various commodities, such as sea shells, livestock, or precious metals, to facilitate trade. The use of standardized currency emerged as a more efficient means of conducting transactions and promoting economic growth. Today, currencies are issued by central banks and governments to facilitate transactions within

their respective economies and to maintain stable exchange rates with other currencies (Ayegba & Okeke, 2021).

The exchange rates of currencies are determined by supply and demand forces in the foreign exchange market. The demand for a particular currency is influenced by several factors, including economic growth, inflation, and interest rates. When the demand for a currency is high, its value appreciates, and vice versa (Kimmitt, 2021).

Currency is an essential component of modern economies, as it facilitates transactions and enables economic activity. As such, currency plays a crucial role in the functioning of financial markets and international trade. Changes in currency values can have significant implications for businesses, investors, and policymakers.

In conclusion, currency is a crucial component of modern economies, and its value is derived from the trust that people place in the issuing authority. The exchange rates of currencies are determined by supply and demand forces in the foreign exchange market, and changes in currency values can have significant implications for the economy.

2.1.2 Brief History of Global Currency

Reserve currencies have come and gone with the evolution of the world geopolitical order. International currencies in the past have (excluding those discussed below) included the Greek “drocfima”, coin in the fifth century BC. The Roman denarii, the Byzantine solidus and Arab dinar of the Middle Ages and the French Franc. The Vientiane ducat and the Florentine Florin became the gold-based currency of choice between Europe and Arab world from the 13th to 16th centuries, since gold was easier than silver to mint in standard sizes and transport over long distances. It was the Spanish silver dollar, however, which created the first true global reserve currency recognized

in Europe, Asia and America from the 16th to 19th centuries due to abundant silver supplies from Spanish America (Gary, 1996). While the Dutch guilder was a reserve currency of somewhat lesser scope used between Europe and the territories of Dutch colonial Empire from 17th to 18th centuries, it was also a silver standard currency fed with the output of Spanish American monies flowing through the Spanish Netherlands. The Dutch, through the Amsterdam Wissel bank (the Bank of Amsterdam, were also the first to establish a reserve currency whose monetary unit was stabilized) through American monies output and Spanish fiat which can be considered as a precursor to modern day monetary policy (Coyle, Kim, & O'Brien, 2021).

. It was therefore the Dutch which served as the model for bank money and reserve currencies stabilized by central banks, with the establishment of Bank of England in 1694 and Bank of France in the 19th century.

The British Pounds Sterling, in particular, was poised to dislodge the Spanish dollars hegemony as the rest of the world transitioned to the standard gold in the last quarter of the 19th century. At that point, the UK was the primary exporter of manufactured goods and services and over 60% of the world trade was invoiced in Pounds Sterling. British Banks were also expanding overseas; London was the world center for insurance and commodity markets and British capital was the leading source of foreign investment around the worlds; sterling soon became the standard currency used for International commercial transactions (Gary, 1996). Attempts were made in Inter war period to restore the gold standard. The British gold standard Act reintroduced the gold bullion standard Act 1925. (10) followed by many other countries. This led to relative stability followed by deflation, but because the onset of the Great depression and other factors; global trade greatly declined and the gold standard fell. Speculative attacks on the Pound forced Britain entirely off the golden standard in 1931.

After the World War II, the International Financial system was governed by a formal agreement, the Bretton woods system, under this system the USD was placed deliberately as an anchor of the system, with the US government guarantying other central banks that they could sell their dollar reserves at a fixed rate for gold. In the late 1960s and early 1970s, the system suffered setbacks ostensibly due to problems pointed out by Triffin dilemma – the conflict of economic interest that arises between short-term domestic objectives and long-term International objectives when a national currency also serves as a world reserve currency (Ghizoni, 2013).

Additionally, in 1971, President Richard Nixon suspended the convertibility of the USD to gold, thus creating fiat global reserve currency system. However, gold has persisted as a significant reserve asset since the collapse of the classical gold standard (14). Following the 2020 economic recession, the IMF opined about the emergency of “a new Bretton woods moment” which could imply the need for a new global reserve currency system. John Maynard Keynes proposed the bancor, a super national currency to be used as a unit of account in International trade, as a reserve currency under the Bretton woods conference of 1945. The bancor was rejected in favour of US Dollar. A report was released by the United Nations Conference on Trade and Development in 2010, which called for the abandoning of the US Dollar as a single major reserve currency. The report states that the new reserve system should not be based on a single currency or even multiple currencies but instead permit the permission of international liquidity to create a more stable global financial system. Countries such as Russia, China Central banks, and economic analysts and groups such as the Gulf cooperation council have expressed a desire to see an Independent new currency replace the dollar as a reserve currency (Pillah & Patrick, 2023).

Exchange Rate Regime in Nigeria

The Nigerian government adopted the Nigerian pound since 1959 until 1973 when it was changed to Naira. In 1971 the Nigerian authorities choose not to devalue its Nigerian pound during the devaluation process of the American dollar and this resulted in the appreciation of the Nigerian pound dollar exchange rate \$2.80-\$3.80 to the naira pound. In 1973 the naira replaced the Nigerian pound and then Nigeria devalued at the same rate with the US which caused the exchange rate to be \$1.52. The year 1986 was a transformational year in the exchange rate policy of Nigeria it was characterized by the introduction of the structural adjustment program (SAP) in 1986 that was put in place to address the structural imbalance in the economy in order to attain a structural transformation in the economy, (Omojimate 2010). By 1994, the federal government fixed the exchange rate at \$22 to a US dollar which implies a shift from the flexible regime of 1986. The foreign exchange market was liberalized in 1995 and it saw the introduction of autonomous foreign exchange market (AFEM) for sale of foreign exchange dedicated to this market by government as well as purchase of foreign exchange by the Central Bank of Nigeria (CBN) from the oil companies, (Alao 2010). An Inter-Bank foreign Exchange Market (IFEM) was introduced on October 25, 1999. The operation of the IFEM, however, experienced similar problems and setbacks as the AFEM. The CBN thus, reintroduced the Dutch Auction System (DAS) to replace the IFEM (Sanusi 2004).

Theoretical Framework

The Finance Constraint Theory of Money

The theory of money that emerged from the Keynesian Revolution is coming increasingly into question, and a variety of new theories are being put forward as alternatives. The most promising one is finance constraint theory. The financial constraints of money theory, also known as the

monetary theory of production, is a concept within economics that explores the relationship between money and the constraints it imposes on economic activity. This theory suggests that the availability and allocation of money have a significant impact on the productive capacity and growth of an economy (Clementi & Hopenhayn, 2006).

In understanding the financial constraints of the money theory, it is important to recognize the fundamental principles of monetary economics. Economists highlight that money serves as a medium of exchange, a unit of account, and a store of value. However, its issuance and management are subject to certain limitations that can affect economic stability and growth.

The financial constraint theory of money is a heterodox monetary theory that emphasizes the role of financial constraints in determining economic activity. This theory argues that the ability of firms and households to access financial resources can have a significant impact on their investment and spending decisions.

The financial constraint theory of money is based on the following assumptions:

Firms and households face financial constraints. This means that they cannot always borrow as much money as they need to finance their desired investment and spending.

The availability of financial resources is not evenly distributed. Some firms and households have easier access to financial resources than others.

Financial constraints can have a significant impact on economic activity. When firms and households are financially constrained, they are less likely to invest and spend, which can lead to slower economic growth.

The financial constraint theory of money has been used to explain a variety of economic phenomena, including:

The business cycle. The financial constraint theory of money can help to explain why the economy tends to go through periods of boom and bust. When financial constraints are tight, firms and households are less likely to invest and spend, which can lead to a recession. When financial constraints are relaxed, firms and households are more likely to invest and spend, which can lead to a recovery.

The distribution of income. The financial constraint theory of money can help to explain why the distribution of income is often unequal. Those who have easier access to financial resources are more likely to invest and spend, which can lead to them accumulating more wealth.

The role of monetary policy. The financial constraint theory of money can help to explain why monetary policy is not always effective in stimulating the economy. When financial constraints are tight, monetary policy may not be able to induce firms and households to invest and spend more.

The financial constraint theory of money is a relatively new theory, but it has gained increasing attention in recent years. It is a promising approach to understanding the role of money in the economy, and it has the potential to shed light on a variety of economic phenomena.

Quantity Theory of Money

The quantity theory of money is a theoretical framework that explores the relationship between the money supply and the overall price level in an economy. This theory posits that changes in the money supply will lead to proportional changes in the price level. In other words, an increase in the money supply will lead to inflation, while a decrease in the money supply will lead to deflation (Goodhart, 2017).

The quantity theory of money, sometimes called "The Fisherian Theory" simply states that a change in price can be related to a change in the money supply. In simple terms, it states that the

quantity of money available (money supply) in the economy and the price levels have the same growth rates in the long run (Friedman & Schwartz, 1963). When there is a fall in interest rates or a decrease in taxes and there is little restriction on how money can be accessed, consumers become less sensitive to changes in price, and hence, have a higher propensity to consume. As a result of this, there will be a rightward movement in the aggregate demand curve, and an upward movement in the equilibrium price level (Rahman & Ahmed, 2017).

The quantity theory of money generally assumes that, if there is an increase in the quantity of money which is in circulation in the economy, there will likely be inflation, and vice versa. By examining the activities of the Federal Reserve or European Central Bank (ECB), we can see that if this body increases the supply of money in the economy by twice its normal quantity, there tends to be a sudden increase in prices of commodities in the economy in the long-run. This price increase can be associated with the excess money supply which will create more demand and spending. Although economists don't agree with the assumption of a sudden change in price after a change in the quantity of money in circulation (Valesco, 2016).

The Fisher equation is mathematically expressed as:

$$M \times V = P \times T$$

Where;

M = money supply

V = velocity of money

P = average price level

T = volume of transactions in the economy

Generally speaking, the quantity theory of money explains how increases in the quantity of money tends to create inflation, and vice versa. In the original theory, V was assumed to be constant and T is assumed to be stable with respect to M , so that a change in M directly impacts P . In other words, if the money supply increases then the average price level will tend to rise in proportion (and vice versa), with little effect on real economic activity.

According to Friedman and Schwartz (1963), "Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output". If the redesign of the naira leads to an increase in the money supply, it could lead to inflation and a decrease in purchasing power. Conversely, if the redesign of the naira leads to a decrease in the money supply, it could lead to deflation and an increase in the purchasing power.

Empirical Review

Momodu and Akani (2016) investigated the impact of currency devaluation on economic growth of Nigeria. The Johansen Co-integration method was used for this analysis because the study involves the use of multivariate estimations. The result from the multivariate co-integration test shows that there is at least one co-integrating vector in the relationship between economic growth and the independent variables. This implies that a long run relationship exists among these variables. The autoregressive distributed lags (ARDL) approach is used for the ECM. The error correction mechanism result indicates that short term changes in economic growth may actually be sufficiently explained by currency devaluation and other factors selected in the model. They accepted the hypothesis of a significant short term relationship between economic growth and currency devaluation. The study shows that in the short run currency devaluation leads to increase in output and improves the balance of payments but in the long run the monetary consequence of

the devaluation ensures that the increase in output and improvement in the balance of payment is neutralized by the rise in prices.

Aiya (2014) assessed people's perception on the impact of devaluation of Nigerian currency on the performance of poverty alleviation programmers in Edo state, Nigeria using primary data and Chi-square statistical analysis, he found that currency devaluation limits the performance of poverty alleviation programmers in Edo state. He recommends that there should be proper funding of poverty alleviation programs because the devaluation of currency as often recommended by the Bretton wood institutions such as IMF and the World Bank has resulted in hyper inflationary trend in the economy. Hence, devaluation is expansionary in terms of GDP since exports increases more than imports according to Mundell-Fleming model.

Saibene and Siccour (2012) concludes that devaluation is contractionary for countries with a large amount of debt dominated in a foreign currency whereas, they are not for the countries whose debt is denominated in their own currency all things being equal. They also assert that after sharp currency devaluations, the debt burden increases in real terms, leading to the following chain of events: Firms profits decrease, bank lending is constrained, and thus the amount of investment is sharply reduced, reducing also next period output.

Kogid, Asid, Lily, Mulok and Lognathan (2012), carried out a research on the effect of exchange rates on economic growth, using nominal and real exchange rate, they found out that both exchange rates (nominal and real) are considered to have similar effects on economic growth. The results of Autoregressive distributed lags (ADRL) bounds test carried out by them suggest that long-run co integration exist between both nominal and real exchange rates and economic growth with a significant positive coefficient recorded for real exchange rate. In addition, the results of ECM-

based ARDL also reveal that both exchange rates have a similar casual effect towards economic growth.

Siddig (2012) examined exchange rate devaluation in Sudan using computable general equilibrium. The paper reports the impact of devaluation on several economic indicators considering domestic commodity markets, the factors market and institutions. Responses of specific economic variables such as prices, household demand, welfare and the balance of payment are used to describe the resulting equilibrium of the economy as a result of devaluation in the three scenarios. The results reveal that devaluation of the Sudanese pound will considerably increase most domestic commodity prices. This is desirable for producers who target the world market because their returns in the local devalued currency will tend to be higher. Accordingly, export oriented sectors, which have a larger share of exports and in their total output, show the greatest increase in output and exports compared to other sectors. He concludes that, devaluation of Sudan's currency would increase domestic prices of tradable goods and encourage producers to export. However, domestic consumers are unaccompanied by similar increase in household income. This could also lead domestic production to deteriorate at a certain point in time since the cost of intermediate inputs will also increase especially imported intermediate inputs. Therefore, devaluation would encourage producers of some sector to increase output and exports, while it would hinder consumers to enjoy the previously cheaper imported and domestic commodities since domestic prices increased.

Farhi, Gopinath and Itskhoki (2012), considered the case of producer and local currency price setting with some price stickiness, as the real effects of nominal devaluations depends on whether prices are set in the producer's currency or in local currency. Their model features two countries, home and foreign, the foreign with a passive policy of a fixed money supply and also potentially

use six different fiscal instruments to achieve the policy goal that mimics a nominal devaluation but maintains a fixed nominal exchange rate: import and export tariffs, a value-added tax (with border adjustment) a payroll tax paid by producers and consumption and income taxes paid by consumers. The authors consider various degrees of capital account openness: Balanced trade, complete risk-sharing with Arrow-Debru securities (securities that are paid in only one time period) and an arbitrary net foreign asset position.

METHODOLOGY

The source used in collecting data in any study or investigation depends on the type of data needed and the purpose of the investigation. This study collects secondary data collection for the analysis. The data are time series collected from the Central Bank of Nigeria Statistical Bulletin (2022) downloaded from www.cbn.gov.ng. The data collected spanned from 1990-2022,

Variables Definition and Measurement

This section provides a comprehensive overview of the variables utilized in the study, their definitions, and the measurement techniques employed to ensure accuracy and consistency.

Economic Growth (GDP Growth Rate): This variable represents the overall economic performance and is measured as the annual percentage change in the Gross Domestic Product (GDP) of Nigeria.

Naira Depreciation (Naira Official Cross Exchange Rates - End Period): This variable captures the year-end cross-exchange rates of the Nigerian Naira against the dollar. The measurement involves the absolute values of the exchange rates for each year from 1990 to 2022. Data for this variable will be meticulously sourced from the Central Bank of Nigeria (CBN).

To ensure a comprehensive analysis, a control variable will be incorporated into the model:

Inflation Rate: Measured as the annual percentage change in the Consumer Price Index (CPI), sourced from the NBS.

Model Specification

This section outlines the structure and specifications of the econometric model that will be employed to analyze the relationship between Naira depreciation and economic growth, considering the specified control variables.

The proposed econometric model with the simplified control variable is specified as follows:

$$GDP_t = f(ND \text{ and } Infla_t) \dots\dots\dots 3.1$$

$$GDP_t = \beta_0 + \beta_1 ND_t + \beta_2 Infla_t + \varepsilon_t \dots\dots\dots 3.2$$

Where:

GDP_t is the annual GDP growth rate of Nigeria for year (t).

ND_t is the Naira depreciation measured by the year-end official cross exchange rates for year (t).

$Infla_t$ is the inflation rate for year (t).

β_0 is the intercept term.

β_1 and β_2 are the coefficients to be estimated.

ε_t is the error term.

Dependent Variable (Economic Growth): GDP growth rate remains a comprehensive measure of economic performance.

Independent Variable (Naira Depreciation): The year-end official cross exchange rates serve as a comprehensive measure of Naira depreciation, allowing for a nuanced analysis of its impact on economic growth.

Expected Relationship

A positive coefficient for β_1 is anticipated, signifying that an increase in Naira depreciation is expected to correlate with an increase in economic growth in the short term.

The coefficient for β_2 represents the expected relationship between inflation rate and economic growth.

This model, with a focused control variable, aims to explore the specific impact of Naira depreciation on economic growth while accounting for inflation rate variations.

Method of Analysis

In this study, the Ordinary Least Squares (OLS) regression analysis will be employed as the primary method for examining the relationships between variables in the econometric model. The analytical process involves thorough data preparation, assumption validation, model estimation, hypothesis testing, and assessment of goodness-of-fit using established metrics such as R-squared. Utilizing statistical software, specifically Eviews, the significance level for hypothesis testing will adhere to the conventional 5% level ($\alpha = 0.05$). The focus will be on estimating the coefficients, particularly β_1 , representing the impact of Naira depreciation on economic growth, with a control variable of Inflation Rate. To enhance robustness, sensitivity analyses and diagnostic tests will be conducted to address potential issues like multicollinearity and heteroscedasticity. The results, including coefficients, standard errors, p-values, and other relevant statistics, will be reported comprehensively, facilitating a nuanced interpretation of the relationships under investigation.

This methodological approach ensures a systematic and rigorous examination, providing valuable insights into the specified economic model.

Data Analysis

Descriptive Statistics

Table 4.2.1 Descriptive Statistics

	GDP	ND	INFLA
Mean	4.287737	159.0844	0.180858
Median	4.230061	131.2500	0.128800
Maximum	15.32916	460.0000	0.728400
Minimum	-2.035119	8.037800	0.053900
Std. Dev.	3.958301	118.2376	0.161083
Skewness	0.465009	1.047207	2.199110
Kurtosis	3.389531	3.399343	6.826989
Jarque-Bera Probability	1.397917 0.497103	6.250809 0.043919	46.73650 0.000000
Sum Sum Sq. Dev.	141.4953 501.3807	5249.786 447364.2	5.968300 0.830327
Observations	33	33	33

Source: E-view Output, version 10

The descriptive statistics unveil important characteristics of the variables under consideration—GDP (Economic Growth), ND (Naira Depreciation), and INFLA (Inflation Rate)—across the 33-year period from 1990 to 2022. Regarding GDP, the mean growth rate stands at approximately 4.29%, indicating a moderate economic performance. However, the median is slightly lower at 4.23%, suggesting a right-skewed distribution. The Naira Depreciation variable exhibits an average depreciation of around 159.08, with a right-skewed distribution evident from the lower median of 131.25. Notably, the Inflation Rate reveals a mean of 0.18, denoting relatively low annual inflation, but its right-skewed distribution is emphasized by a higher median of 0.13.

Furthermore, the statistical measures of variability, skewness, and kurtosis provide insights into the nature of these economic indicators. While GDP portrays a moderately variable distribution, both Naira Depreciation and Inflation Rate exhibit higher variability. Additionally, normality tests reveal that GDP approximates a normal distribution, while Naira Depreciation and Inflation Rate deviate significantly from normality, especially the latter. These findings lay the foundation for a more in-depth statistical analysis, contributing valuable insights into the economic dynamics under scrutiny.

Unit Root Test

In order to examine (whether) the variables are stationary or not, the variables were individually subjected to unit root test using the Augmented-Dickey Fuller (ADF) test. The requirement is that for a variable to be stationary using the 5% level of significance, the value of the ADF test statistics must be less than test critical value to reject the null hypothesis of non-stationarity of the variable. The unit root test was conducted at constant and trend and the result of the test are reported at the 5% confidence level.

The summary of the result as shown in Appendix (A) is presented in the Table 4.2.2.

Table 4.2.2: Augmented Dickey Fuller Unit Root Test Trend and Intercept

Variables	Levels: Intercept	Levels: Trend & Intercept	1 st Diff: Intercept	1 st Diff: Trend & Intercept	Decision
GDP	-2.957110 (0.0093)	-3.557759 (0.0460)	-2.960411* (0.0000)	-3.562882* (0.00000)	I(1)
ND	-2.957110 (0.9993)	-3.557759 (0.9904)	-2.960411* (0.0008)	-3.562882* (0.0016)	I(1)
INFLA	-2.957110 (0.2253)	-3.557759 (0.2849)	-2.963972* (0.0021)	-3.587527* (0.00000)	I(1)

Source: Researcher Computation 2023

Note: * 5% level of significance

Table 4.2.2 presents the outcomes of the Augmented Dickey-Fuller (ADF) Unit Root Test for the variables—GDP (Economic Growth), ND (Naira Depreciation), and INFLA (Inflation Rate)—considering various levels of trend and intercept components. For GDP, the ADF statistics indicate non-stationarity at the levels with intercept and both trend and intercept. However, upon differencing once with intercept, the null hypothesis is rejected, suggesting that GDP is integrated of order 1 (I(1)). Similarly, Naira Depreciation displays non-stationarity at the levels but becomes stationary after differencing once with intercept, also signifying an integration order of 1. In the case of Inflation Rate, non-stationarity at the levels is resolved through differencing once with intercept, confirming an integration order of 1.

The results underscore the importance of differencing to achieve stationarity, a critical prerequisite for time-series analyses. Notably, all three variables exhibit an integration order of 1, implying that their first differences yield stationary series. This finding informs subsequent modeling and statistical analyses, ensuring appropriate treatment of these economic indicators. It's worth noting that the significance level for these tests is set at 5%, and the decision to reject or fail to reject the null hypothesis is based on the corresponding p-values.

Johansen Cointegration Test

This section delves into the Johansen Cointegration Test, a crucial analysis to explore potential long-term relationships among the economic variables—GDP (Economic Growth), ND (Naira Depreciation), and INFLA (Inflation Rate). The Johansen Cointegration Test is employed to assess whether these variables move together in the long run, signifying a stable equilibrium relationship.

Table 4.2.3: Cointegration Test: Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.310042	19.13714	29.79707	0.4831
At most 1	0.190868	7.632271	15.49471	0.5055
At most 2	0.033824	1.066698	3.841466	0.3017

Trace test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**Mackinnon-Haug-Michelis (1999) p-values

Source: E-view 12, (2024)

The Johansen Cointegration Test results for the variables—GDP (Economic Growth), ND (Naira Depreciation), and INFLA (Inflation Rate)—are presented with a sample adjusted from 1992 to 2022. The test involves assessing the number of cointegrating equations among these variables, which would indicate a long-term relationship.

The hypothesis tests for different numbers of cointegrating equations reveal that no cointegration is found at the 0.05 significance level, as indicated by both the trace and max-eigen value tests.

The normalized cointegrating coefficients suggest no significant relationship among the variables.

The coefficients, when normalized, do not show strong relationships among the variables, with values close to zero for ND and GDP, and a relatively higher value for INFLA. The adjustment coefficients further support the absence of strong cointegration.

The Johansen Cointegration Test results suggest that, as of the specified date, there is no evidence of a long-term relationship (cointegration) among GDP, Naira Depreciation (ND), and Inflation Rate (INFLA) at the 0.05 significance level. The absence of cointegration implies that these variables do not share a stable equilibrium relationship in the long run. This information is crucial

for determining the appropriate modeling approach, indicating that short-term dynamics may be more influential in explaining the relationships among these economic indicators.

Ordinary Least Square (OLS) Result

This section provides an overview of the Ordinary Least Squares (OLS) results, a fundamental component of the econometric analysis examining the relationships among GDP (Economic Growth), Naira Depreciation (ND), and Inflation Rate (INFLA). The OLS method is employed to estimate the coefficients of the specified model and to ascertain the statistical significance of each variable.

Table 4.2.4: OLS Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ND	-0.011528	0.005374	-2.145261	0.0401
INFLA	-12.66451	3.944481	-3.210691	0.0032
C	8.412178	1.392313	6.041874	0.0000
		Mean dependent		4.28773
R-squared	0.286073	var		7
Adjusted R-squared	0.238478	S.D. dependent		3.95830
		var		1
		Akaike info		5.40357
S.E. of regression	3.454221	criterion		9
				5.53962
Sum squared resid	357.9492	Schwarz criterion		5
		Hannan-Quinn		5.44935
Log likelihood	-86.15905	criter.		4
		Durbin-Watson		1.45272
F-statistic	6.010552	stat		7
Prob(F-statistic)	0.006380			

Source: E-view 12, (2024)

The Ordinary Least Squares (OLS) analysis was conducted to examine the relationships between GDP (Gross Domestic Product) and its influencing factors, namely Naira Depreciation (ND) and

Inflation Rate (INFLA). The model considered GDP as the dependent variable, and the results, based on data from 1990 to 2022, provide valuable insights into the impact of Naira Depreciation and Inflation Rate on the Nigerian economy.

The coefficient for Naira Depreciation (ND) is estimated at -0.0115, with a standard error of 0.0054. This suggests that, holding other factors constant, a one-unit increase in Naira Depreciation is associated with a decrease of 0.0115 units in GDP. The t-statistic of -2.15 and the p-value of 0.0401 indicate that the coefficient for ND is statistically significant at the 5% significance level.

Similarly, the coefficient for Inflation Rate (INFLA) is calculated as -12.6645, with a standard error of 3.9445. This implies that, on average, a one-unit increase in Inflation Rate is associated with a substantial decrease of 12.6645 units in GDP. The t-statistic of -3.21 and the p-value of 0.0032 indicate that the coefficient for INFLA is statistically significant at the 1% significance level.

The intercept term (C) in the model is estimated at 8.4122, with a standard error of 1.3923. This represents the estimated value of GDP when both ND and INFLA are zero. The intercept is highly statistically significant, with a p-value of 0.0000.

The overall model fit is assessed through the R-squared and adjusted R-squared values. The R-squared value is 0.2861, suggesting that approximately 28.61% of the variability in GDP is explained by the model. The adjusted R-squared, which accounts for the number of predictors, is 0.2385. The F-statistic is 6.0106 with a p-value of 0.0064, indicating that the overall model is statistically significant.

The OLS results provide detailed insights into the relationships between GDP, Naira Depreciation, and Inflation Rate. The coefficients, t-statistics, and p-values contribute to a comprehensive

understanding of how changes in these economic indicators impact the Nigerian economy. These findings are crucial for policymakers and researchers seeking to comprehend the complex dynamics of the nation's economic landscape.

Discussion of Major Findings

The results of the findings shed light on the relationships between Gross Domestic Product (GDP), Naira Depreciation (ND), and Inflation Rate (INFLA) during the period from 1990 to 2022. The coefficient for Naira Depreciation (ND) is -0.0115, indicating that, all else being equal, a one-unit increase in Naira Depreciation is associated with a decrease of 0.0115 units in GDP. This negative relationship aligns with the study's focus on the effects of Naira Depreciation on the Nigerian economy. The finding corresponds with Momodu and Akani's (2016) study, reinforcing the idea that Naira Depreciation adversely affects economic growth. This reinforces the notion that currency devaluation has notable short-term consequences on various economic sectors, contributing to a comprehensive understanding of its effects.

The coefficient for Inflation Rate (INFLA) is -12.6645, signifying that, on average, a one-unit increase in Inflation Rate corresponds to a substantial decrease of 12.6645 units in GDP. This underscores the significant impact of inflation on the Nigerian economy. The negative relationship between inflation and economic growth aligns with Saibene and Siccour's (2012) findings, emphasizing the adverse consequences of inflationary pressures on economic activity. This finding is crucial within the context of the study's focus on Naira Depreciation, emphasizing the intertwined nature of currency devaluation and inflation in shaping economic outcomes.

The study's findings not only substantiate but also refine existing knowledge on the effects of Naira Depreciation on the Nigerian economy. The negative impact of Naira Depreciation on GDP aligns with Momodu and Akani (2016), offering specific coefficients and statistical significance. This

enhances the understanding of the intricate relationships between currency devaluation and economic performance.

Conclusion

The study offers compelling evidence regarding the impacts of Naira Depreciation and inflation on the Nigerian economy. The findings accentuate the imperative for policymakers to enact targeted policies aimed at stabilizing the currency and curbing inflationary pressures to facilitate sustained and robust economic growth. By addressing these underlying challenges, Nigeria can bolster its economic resilience and enhance its prospects for long-term prosperity.

The study's significance lies in its contribution to the existing body of knowledge, providing empirical validation of the adverse consequences associated with currency devaluation in the Nigerian context. Through rigorous analysis and statistical modeling, the research elucidates the intricate dynamics between Naira Depreciation, inflation, and economic performance, offering valuable insights for policymakers, economists, and stakeholders alike. By illuminating the adverse effects of currency devaluation, the study serves as a catalyst for informed policy decisions and strategic interventions aimed at safeguarding Nigeria's economic stability and fostering sustainable development.

Recommendations

Based on the research findings, the following recommendations are proposed:

- I. **Currency Stabilization Measures:** The Central Bank of Nigeria should implement measures to stabilize the Naira to mitigate the adverse effects of depreciation on the economy. This may include interventions in the foreign exchange market and prudent monetary policies.
- II. **Inflation Control Policies:** Policymakers should prioritize inflation control measures to maintain price stability and promote economic growth. This may involve implementing tight monetary policies and adopting fiscal discipline to curb inflationary pressures.
- III. **Diversification of the Economy:** Efforts should be made to diversify the Nigerian economy to reduce its vulnerability to external shocks, such as currency fluctuations. Emphasis should be placed on developing non-oil sectors to create a more resilient economic base.

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