DOES EXCHANGE RATE DEPRECIATION AND TRADE BALANCE IMPEDE ECONOMIC GROWTH IN NIGERIA?

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ABSTRACT

The Nigerian currency has experienced a significant depreciation due to its exchange with foreign currencies, particularly the dollar. This exchange rate depreciation affects purchasing power, real wages, foreign trade, debt servicing, macroeconomic stability, and interest rates. The study then seeks to fill a knowledge gap on the asymmetric link between exchange rate depreciation, trade balance, and economic growth in Nigeria. The Phillip-Perron and Augmented Dickey-Fuller unit root tests found mixed stationarity, whereas the ARDL bound cointegration test revealed a long-term link between these variables. As such, the study revealed that the depreciation of the exchange rate and trade balance positively affects economic growth. As the currency weakens, interest rates and money supply rise, and the economic growth rate rises. The study uses the error correction model to correct the disequilibrium by 59.8% to correct this economic hardship in the Nigerian economy, demonstrating that exchange rate depreciation considerably influences economic growth in the long run but not in the short term. Therefore, the practical implication is that the cost of production, importation, and inflation is high, causing fiscal restraints, governmental regulations, and economic shocks to macroeconomic stability, which may all influence economic growth. They recommend that interest rates be readjusted and that the government give grants and non-interest rate loans to small and medium enterprises to mash up with the import and export of consumable goods.

***Keywords:** Currency Depreciation, Economic Growth, Exchange Rate, Trade Balance*

ABSTRAK

Mata uang Nigeria telah mengalami depresiasi yang signifikan karena pertukarannya dengan mata uang asing, terutama dolar. Depresiasi nilai tukar ini mempengaruhi daya beli, upah riil, perdagangan luar negeri, pembayaran utang, stabilitas makroekonomi, dan tingkat suku bunga. Penelitian ini kemudian berusaha untuk mengisi kesenjangan pengetahuan tentang hubungan asimetris antara depresiasi nilai tukar, neraca perdagangan, dan pertumbuhan ekonomi di Nigeria. Uji akar-akar unit Phillip-Perron dan Augmented Dickey-Fuller menemukan adanya stasioneritas campuran, sementara uji kointegrasi terikat ARDL menunjukkan adanya hubungan jangka panjang di antara variabel-variabel ini. Dengan demikian, penelitian ini mengungkapkan bahwa depresiasi nilai tukar dan neraca perdagangan berdampak positif pada pertumbuhan ekonomi. Ketika mata uang melemah, suku bunga dan jumlah uang beredar meningkat, dan tingkat pertumbuhan ekonomi meningkat. Studi ini menggunakan model koreksi kesalahan untuk memperbaiki ketidakseimbangan sebesar 59,8% untuk memperbaiki kesulitan ekonomi ini

dalam perekonomian Nigeria, menunjukkan bahwa depresiasi nilai tukar sangat mempengaruhi pertumbuhan ekonomi dalam jangka panjang tetapi tidak dalam jangka pendek. Oleh karena itu, implikasi praktisnya adalah biaya produksi, impor, dan inflasi yang tinggi, menyebabkan pengetatan fiskal, peraturan pemerintah, dan guncangan ekonomi terhadap stabilitas ekonomi makro, yang semuanya dapat mempengaruhi pertumbuhan ekonomi. Mereka merekomendasikan agar suku bunga disesuaikan kembali dan agar pemerintah memberikan hibah dan pinjaman tanpa bunga kepada usaha-usaha kecil dan menengah untuk menyeimbangkan antara impor dan ekspor barang-barang konsumsi.

Introduction

In Nigeria, demand for imported commodities has grown relative to domestically produced items, and this demand-pull dynamic has influenced the appreciation and depreciation of the country's currency. Therefore, currencies provide significant business advantages, such as exchanging goods and services, human livelihoods, and economic stability in countries worldwide. Despite their currencies' uniqueness, their central banks' responsibility is the same. Thus, with the function of these banks being to control the monetary policies under their jurisdictions, it had become apparent by the turn of the century that economic and commercial development needed the widespread use of exchange rate variations in trading with one another. Hence, this birthed the amalgamation of the banks in West African nations with Britain, which led to the establishment of the West Africa Currency Board (WACB) in 1912 to exchange their currency for WACB notes.

The exchange of currencies with Britain masks the domestic money supply about what happens in foreign trade. Moreover, it should be noted that the depreciation of a currency depends on the elasticity of exports, thereby triggering a deficit in the trade balance (Udo et al., 2018). Therefore, if exports exceed imports, the currency would appreciate, and if vice versa, the currency would depreciate (Anoke et al., 2016). It could be responsible for the depreciated value of currencies in the foreign trade and WACB regions, especially Nigeria's currency, which is the region's strengthened currency due to its economy.

However, in the case of Nigeria, the depreciation of her currency, the naira, started in the early 1980s with the introduction of the Second-Tier Foreign Exchange Market (SFEM) and adjustment programs, which have posed a persistent increase in the depreciation of the naira, an increase in inflation, an inability to compete with other currencies across the globe, and a reduction in the hope of refining economic growth (Anagun, 2020). Although depreciation is viewed as fundamental to the conventional stabilization in any economy, it has been assumed that exchange rate policy, a reduction in the money supply, the interest rate, cash reserves, and the inflation rate affect the exchange rate depreciation (Allor, 2020; Egilsson, 2020; Nurjanah & Mustika, 2021; Olabisi et al., 2019), in long-run affects economic growth (Khan, 2021).

Exchange rate depreciation is, in most literature, related to exchange rates. As such, economic and commercial development inside the sterling exchange determines the percentage change in the value of an increase in the exchange rate divided by a new exchange rate. It is a reduction in currency value at a floating exchange rate (Morina et al., 2020). Exchange rate depreciation is caused by demand and supply in a free exchange rate market,

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as opposed to currency devaluation, which occurs when one country's currency requires more excellent value to acquire or exchange for another's currency. To a large extent, currency depreciation affects most nations' monetary policies regarding purchasing power and real wages (Egilsson, 2020).

In Nigeria, exchange rate changes are influenced by the interaction of economic and commercial activity within the pound currency. Hence, these effects could significantly affect economic growth and output levels. Therefore, relatively cheaper exports due to exchange rate depreciation enhance strong domestic competitiveness, increase manufacturing levels, and increase a country's export volume. Therefore, it means that domestic products will gain more foreign preference than imported manufacturing goods, and as a result, it will asymmetrically boost the output level of the country. Unlike imports, it leads to a decrease in the nation's import volume, and if this happens, there will be a shift in the country's trade balance.

Moreover, it stimulates and makes room for more domestically manufactured products, thereby reducing trade deficits. Furthermore, with inflation being one of the economy's key drivers, a sustained fall in the overall price level promotes economic growth even more. On the other side, having monetary economic pressure in an economy due to exchange rate depreciation makes imported products costlier because the currency of such a country makes it much cheaper to buy items in the foreign market. This assertion threatens consumers' purchasing power, savings, and income to meet their needs.

More so, with a country like Nigeria having a total debt stock of 77.8 trillion naira by the end of December 2023 (Thompson, 2020). The implication is that the higher the local currency unit (LCU), the higher the debt servicing in terms of repayments in terms of the exchange of currency with foreign currency. Hence, as Nigeria's currency depreciates, the debt servicing and repayments will increase. As such, it causes fiscal pressure, especially by spending all of its revenue on debt repayments. As such, exchange rate depreciation affects Nigeria's economic growth through export volume, import rate, exchange rate, interest rate, inflation rate, and debt servicing. Although the exchange of the naira with other foreign currencies, especially the dollar, has depreciated at an alarming rate and has put pressure on the domestic currency. The threat is so severe that the official market's naira exchange rate differs significantly from the parallel markets.

Despite these threats, the Central Bank of Nigeria (CBN) does not show signs of principal responsibility or correctional measures to mitigate these economic abnormalities. It is a worrisome problem since various issues have been raised regarding the situations the research intends to explore within its context and scope. This paper investigates whether currency rate depreciation and trade balance limit economic growth in Nigeria to provide answers to this problem. The study investigates the effect of currency rate depreciation and trade balance on Nigerian economic growth, assuming that they have little effect on the country's growth.

A plethora of studies have chanted the course of the study's objective, but the need to review 1980 and 2021 justifies the need for the study. The study aims to close that gap by endogenously identifying the probable association and effects between these factors and variables through regression analysis. As such, the study shed light on the economic effects of exchange rate devaluation in Nigeria. It offered insights into viable strategies for addressing its difficulties by investigating these factors in-depth. Therefore, the study tests the hypothesis that currency depreciation and trade balance do not significantly affect Nigeria's economic growth.

This paper gives strong evidence, supported by theoretical ideas and numerous econometric methodologies, using Nigerian time series data. As a result, the study improves knowledge and benefits academics and policymakers in low-income countries by summarising literature reviews, offering data and research tools, and presenting findings and policy implications.

Literature Review

Theoretical Review

The J-curve theory is most suited to explaining the linkage between the rate of currency depreciation and economic growth in Nigeria. The J-curve theory is an economic theory based on the assumption that, all other things being equal, a country's trade deficit worsens following currency depreciation because higher import prices in the short term have a more significant impact on total domestic imports than a decrease in import volume. In other words, the curve indicates that a shift in trade balance as a result of a trade deficit exacerbates the currency depreciation (Arthur et al., 2022). Therefore, as the currency keeps depreciating, there is a growth in imports while exports stay fixed, and the trade deficit adjusts to surplus; when plotted, it exhibits a "J" shaped curve (Vambery & De Feis, 2021). The J-curve theory further depicts that exchange rate depreciation may initially cause a country's trade balance to worsen, but it may boost economic growth (Onakoya & Johnson, 2018).

The J-curve theory suggests that a depreciating nation's currency leads to higher import costs and lower export costs (Dogru et al., 2019; Arthur et al., 2022). However, the demand for exports and imports tends to be inelastic in the short run, which means that price changes may take time to affect the trade balance volume. Therefore, the trade balance may initially deteriorate as imports rise in value more quickly than exports (Bhat & Bhat, 2021). Furthermore, the theory suggests that as demand for exports and imports becomes more price elastic, the trade balance may improve due to increased export volumes and decreased import volumes due to exchange rate depreciation (Biltagy & Salah, 2020).

This improvement may boost economic expansion, increase net exports, and boost domestic competitiveness, leading to increased manufacturing and export volumes. It could create jobs, revenue, and investments, boosting economic growth. Also, the J-curve theory assumes conditions like a flexible exchange rate regime, price elasticities, and structural constraints (Jackson et al., 2021). It acknowledges that the J-curve effect's materialization time varies depending on trade flow responsiveness and adjustment mechanisms. Thus, the theory helps explain how exchange rate depreciation, initially causing trade balance deterioration, can contribute to long-term economic growth by stimulating exports, reducing imports, and improving competitiveness (Haile, 2019).

Empirical Review

Previous studies make it evident currency depreciation causes more inflationary pressure, higher interest rates, a shift in the trade balance, and debt stock servicing in an economy, all of which have a long-run effect on the nation's economic growth. To this end, Zhu et al. (2022) explore the relationship between Asian nation's economic growth, exports, and exchange rates from 1981 to 2016, finding that a depreciated currency boosts exports and significantly impacts economic growth, suggesting that a timely and balanced policy can improve this relationship.

Also, Henry et al. (2020) revealed that between 1997 and 2017, exchange rate variations affected economic growth in Nigeria. The study further revealed a decline in Nigeria's economic growth since 2002, primarily due to a significant correlation between exchange

rate fluctuations and economic growth. Despite high inflation rates, they had no meaningful impact on economic growth. The report suggests that fiscal and monetary policymakers execute measures to boost currency demand, grow GDP and foreign profits, strengthen the currency, improve exchange rate stability, and lower inflation rates.

Effiong et al. (2022) found that total trade positively impacts Nigerian economic growth, while exchange rates negatively affect it. Factors influencing exchange rates include economic growth, foreign reserves, inflation, and overall trade balance. Stimulating local production to increase non-oil exports can help to stabilize and develop the Nigerian economy. However, it is interesting that high political and economic risks can lead to investment funds being drawn away from countries with high risks, potentially losing trust in currency stability and capital mobility.

To this end, using M-TAR and TAR models, Onakoya et al. (2019) studied the asymmetric co-integrating connection between Nigerian exchange rate, trade balance, and growth. They found asymmetric adjustment disequilibrium among economic growth, balance of trade, and real exchange rates, with negative coefficients for domestic income and exchange rate and positive coefficients for foreign income.

Data and Research Methods

In order to identify variables related to trade balance, economic growth, and currency rate depreciation in Nigeria, the study used a descriptive research approach and examined historical occurrences. A yearly data set from 1980 to 2021 was used to study the influence of currency rate depreciation, trade balance, and economic growth in Nigeria. GDP was utilized as a proxy for economic growth (EG), the ratio of GDP shares on exports (EXP) and imports (IMP) of goods and services as a proxy for the trade balance, and the official exchange rate (EXR) for exchange rate depreciation.

The control variables employed in the study were the real interest rate, inflation rate, and broad money supply. It utilized a lin-log econometric model and EViews 10. Hence, to the best of the researcher's knowledge, the study was reworked upon that of Onakoya et al. (2019) and Zhu et al. (2022) and is seen to have captured the aim of the study but not the variables used. The Autoregressive Distributed Lag (ARDL) model examined the link between exchange rate depreciation, trade balance, and economic growth to establish the relationship and effects between exchange rate depreciation, trade balance, and economic growth. The ARDL approach effectively identifies short- and long-run parameters, especially when the series has a mixed order of stationarity (Nkoro & Uko, 2016). Moreover, in the words of Pesaran et al. (2001), it was asserted that the ARDL tests the presence of a co-integrating link, while the bound test, as estimated in Equation (Eq. 1), is a unique symmetric cointegration test that is particularly useful for determining short- and long-run parameters in series of different order.

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \Delta Y_{t-i} + \sum_{i=1}^{q} \delta_j \Delta X_{1t-j} + \sum_{i=1}^{q} \lambda_k \Delta X_{2t-k} + \theta_0 Y_{t-1} + \theta_1 X_{1t-1} + \theta_2 X_{2t-1} + e_t \qquad (1)$$

Where Y_t is the vector of the dependent series, X_t is a vector of the independent series, $\alpha, \beta, \delta, \lambda,$ and θ are the estimated parameters. The bounds test involves performing an F-test of the hypothesis as specified in Eq. 2,

$$H_0: \theta_0 = \theta_0 = \theta_0 = 0 \qquad (2)$$

As such, rejecting H_0 suggests a long-run relationship among series, requiring a disequilibrium

in the ARDL model. Adjustment through Error Correction Model (ECM) and Error Correction Term (ECT) can resolve this disequilibrium as specified in Eq. 3,

$$\Delta EG_t = \beta_0 + \beta_1 \sum_{i=1}^{p} \Delta EG_{t-1} + \beta_2 \sum_{i=1}^{q} \Delta EXR_{t-1} + \beta_3 \sum_{i=1}^{q} \Delta TB_{t-1} + \beta_4 \sum_{i=1}^{q} \Delta INFL_{t-1} +$$

$$\beta_5 \sum_{i=1}^{q} \Delta INT_{t-1} + \beta_6 \sum_{i=1}^{q} \Delta MS_{t-1} + \delta_1 EG_{t-1} + \delta_2 EXR_{t-1} + \delta_3 TB_{t-1} +$$

$$\delta_4 INFL_{t-1} + \delta_5 INT_{t-1} + \delta_6 MS_{t-1} + e_t$$

(3)

Where ΔEG_t is the change in economic growth at time t, ΔEG_{t-1}, ΔEXR_{t-1}, ΔTB_{t-1}, $\Delta INFL_{t-1}$, ΔINT_{t-1}, ΔMS_{t-1} are changes in economic growth, exchange rate, trade balance, inflation rate, interest rate, and money supply with a reflect on the past impact of the explanatory variables changes on economic growth respectively. Also, e_t is the error term at time t, β_0 is the constant coefficient, $\beta_1 - \beta_6$ explains the associational relationships between the economic growth and the independent variables. At the same time, $\delta_1 - \delta_6$ represents the coefficient of the reflection of the past lagged values on the current economic growth, considering the contemporaneous effects.

Findings and Discussion

Table 1 shows the correlation matrix data, which shows that exchange rate depreciation and money supply have a positive but negligible link with economic growth.

Table 1: Correlation Matrix

Variables	EGt	EXRt	TBt	INFt	INTt	MSt
EGt	1.00					
EXRt	0.15	1.00				
	[0.95]					
TBt	0.29*	-0.43**	1.00			
	[1.96]	[-3.04]				
INFt	-0.29	-0.29*	0.15	1.00		
	[-1.35]	[-1.94]	[0.97]			
INTt	0.56**	0.33**	-0.03	-0.51**	1.00	
	[4.33]	[2.23]	[-0.18]	[-3.73]		
MSt	0.12	0.72**	-0.35**	-0.28*	0.36**	1.00
	[0.74]	[6.74]	[-2.39]	[-1.87]	[2.44]	

*[] is the t-statistic value, while * and ** are 1% and 5% significance levels.*

It was also discovered from Table 1 that trade balance and interest rates had a positive and significant correlation at 5% with economic growth, respectively. Otherwise, the inflation rate accounts for a negative and negligible association at 1% and 5%. However, money supply has a positive but statistically negligible connection with GDP. Thus, Table 1 indicates that the currency rate, money supply, trade balance, and interest rate are all positively associated with Nigeria's economic development, while inflation has a negative link. Table 2 displays descriptive economic growth, trade balance, and exchange rate statistics. It was discovered that all the series had mean values between the lowest and maximum values.

Table 2: Descriptive Statistics

Variables	EG_t	EXR_t	TB_t	INF_t	INT_t	MS_t
Mean	3.069167	106.3322	1.499644	18.73531	0.358316	16.86090
Maximum	15.32916	435.0000	2.827051	72.83550	18.18000	28.62522
Minimum	-13.12788	0.546781	0.718122	5.388008	-65.85715	9.063329
Std. Dev.	5.322386	112.2016	0.519371	16.51313	14.09773	6.166357
Skewness	-0.843228	1.095341	0.733580	1.892215	-2.722556	0.487951
Kurtosis	4.740206	3.596136	3.069299	5.460058	13.10067	1.599430

The skewness analysis revealed that economic growth and interest rates were negatively skewed, while exchange rate, trade balance, inflation rate, and money supply exhibited a long-right-tailed positive skewness. Therefore, based on the kurtosis value, only the money supply was platykurtic, while other series were leptokurtic.

The study used the Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) unit root tests to analyze time series features of variables to verify the exact econometric model to use, avoiding erroneous regression and autocorrelation as shown in Tables 4 and 5. Understanding the lag length, particularly in the ADF unit root, was crucial for establishing the integration sequence. Table 3 shows the ideal lag length structure using the Vector Autoregressive (VAR).

Table 3: Optimal Lag Order Selection Result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-759.7843	NA	4.57e+09	39.27099	39.52692	39.36281
1	-635.5833	203.8171*	50839468*	34.74786*	36.53939*	35.39064*
2	-609.9883	34.12657	99242127	35.28145	38.60858	36.47520
3	-575.6502	35.21864	1.59e+08	35.36667	40.22939	37.11138

The study uses Akaike information criteria (AIC) to select the optimal lag order for the Autoregressive (AR) process, with the lowest value of 34.74786 at a one-period lag length, indicating the investigation's dependence on AIC. The ADF unit root test results show that economic growth and exchange rate are stationary at levels, while other variables are stationary at first difference.

Table 4: ADF Unit Root Test Results at Trend and Intercept

Variables	ADF Test Stat. at Levels	ADF Test Stat. at First Difference	Stationary Decision
EG_t	-2.46(-3.53)	-11.95(-3.53)**	I(1)
EXR_t	0.20(-3.53)	-4.14(-3.53)**	I(1)
TB_t	-4.41(-3.52)**	-	I(0)
INF_t	-3.81(-3.53)**	-	I(0)
INT_t	-5.63(-3.53)**	-	I(0)
MS_t	-5.95(-3.52)**	-	I(0)

*() captures the test critical values at 5%, while ** is a 5% significance level, respectively.*

Table 5 shows that exchange and inflation rates are stationary, while economic growth, trade balance, interest rate, and money supply are stationary at the first difference.

Table 5: PP Unit Root Test Results at Trend and Intercept

Variables	PP Test Stat. at Levels	PP Test Stat. at First Difference	Stationary Decision
EG_t	-4.14(-3.52)**	-	I(0)
EXR_t	0.97(-3.52)	-3.63(-3.53)**	I(1)
TB_t	-4.21(-3.52)	-	I(0)
INF_t	-3.08(-3.52)	-12.03(-3.53)**	I(1)
INT_t	-5.65(-3.52)**	-	I(0)
MS_t	-5.64(-3.52)**	-	I(0)

*() captures the test critical values at 5%, while ** is a 5% significance level, respectively.*

It informs an acceptable usage of the ARDL model, which must be tested using the ARDL bound test to ensure cointegration. However, Pesaran et al. (2001) revealed that to identify the connection between the series due to joint movement, as illustrated in Table 6. However, the bound test is required to establish since it is a method that provides enough delay in the model. Therefore, the direction of the joint movement is determined from the F-statistic value that, when the F-statistic is smaller than the lower bound, I(0), then there is a short-run joint movement among the variables in the model, and vice versa if it exceeds the upper bound, I(1).

Table 6: ARDL Bound Test Results

F-Statistic	ARDL specification	Significance level	I(0)	I(1)	K
4.96	2, 1, 1, 0, 0, 2	10%	2.08	3	5
		5%	2.39	3.38	
		1%	3.06	4.15	

Table 6 reveals the long-term cointegration between Nigeria's economic growth, exchange rate depreciation, and trade balance from 1980-2021, rejecting the null hypothesis and selecting the ARDL model among the top 20 models with the lowest AIC.
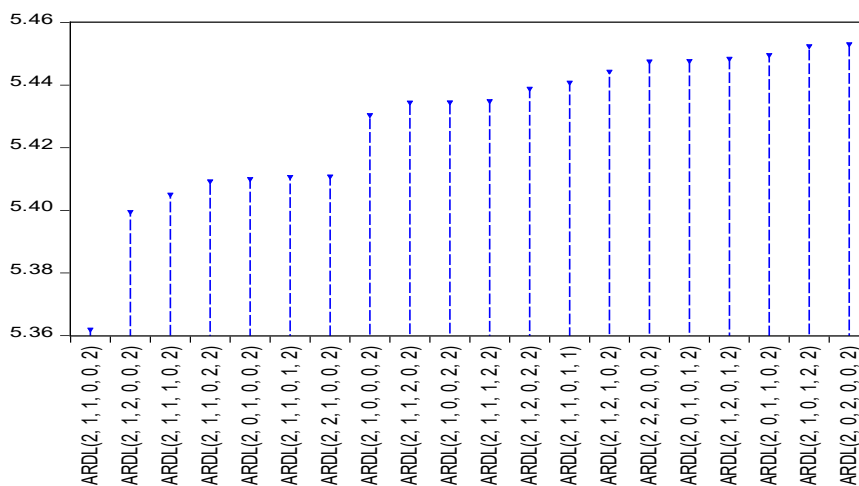

Figure 1: Akaike Information Criteria (Top 20 Models)

The ARDL bound test shows an imbalance in the predicted model, requiring short-term correction. The long-run estimation shows that the exchange rate and trade balance positively influence economic growth at the 10% level. For every 1% increase in exchange rate, economic growth rises by 5.6%, while trade balance increases by 2.49%. The naira depreciation impacts the trade balance.

Inflationary effect on buying power in Nigerian economy from 1980-2021, with 0.5% positive effect on economic growth, but no statistical significance at 5%. As the currency continues to weaken, the results reveal that interest rates rise, but the economic growth rate rises by 20.9% for every one percent increase in interest rates. It is then statistically significant at 5% in the long term. Nigeria's economic development is negatively impacted by depreciating currency rates, with a 36.3% reduction in growth rate for every 1% increase in money supply. The model's long-run results show stability for policymaking, with an adjusted r-squared of 57.2% and Durbin-Watson (D-W) statistics indicating no serial correlation.

A 10% short-term exchange rate depreciation negatively impacts economic growth by 3.6%. However, incorporating currency depreciation into the model increases the trade balance by 1.24, with an ECT of 59.8%.

Table 7: Estimates of Exchange Rate Depreciation and Trade Balance on Economic Growth

Long-run estimates: ARDL model				
Variable	**Coefficient**	**Std. Error**	**T-Statistic**	**P-value**
EG_{t-1}	0.011036	0.131951	0.083634	0.9339
EG_{t-2}	0.390540	0.115912	3.369272	0.0022
EXR_t	-0.036107	0.029446	-1.226214	0.2303
EXR_{t-1}	0.056361	0.033178	1.698769	0.1004
TB_t	1.246258	1.269089	0.982010	0.3345
TB_{t-1}	2.493745	1.328737	1.876779	0.0710
INF_t	0.005552	0.053382	0.104014	0.9179
INT_t	0.209149	0.105294	1.986344	0.0569
MS_t	-0.859835	0.269671	-3.188460	0.0035
MS_{t-1}	0.912752	0.321947	2.835103	0.0084
MS_{t-2}	-0.363140	0.175761	-2.066105	0.0482
Constant	-0.277064	3.687991	-0.075126	0.9406
Adjusted R-squared	*0.572(57.2%)*		***D-W Stat.***	*2.327*
Short-run estimates: *ECM*				
Dependent variable: *economic growth*				
Variable	**Coefficient**	**Std. Error**	**T-Statistic**	**P-value**
ΔEG_{t-1}	-0.390540	0.093926	-4.157966	0.0003
ΔEXR_t	-0.036107	0.019732	-1.829901	0.0779
ΔTB_t	1.246258	0.882930	1.411502	0.1691
ΔMS_t	-0.859835	0.220964	-3.891287	0.0006
ΔMS_{t-1}	0.363140	0.138616	2.619752	0.0141
ECT	-0.598425	0.092187	-6.491410	0.0000
Adjusted R-Squared	*0.646(64.6%)*		***D-W Stat.***	*2.3270*

*, **, and *** are 1%, 5%, 10% significance level respectively.

Despite these results, it is also expected that money being supplied in the economy between 1980 and 2021 should negatively determine the economic growth rate. The short-run results show that a 1% increase in the money supply boosts economic growth by 85.9%, and the model returns to equilibrium by 59.84% in a year. Table 8 shows diagnostic test results confirming short-run ECM's success in post-estimation tests. Four tests were used: Jarque-

Bera normality test, Breusch-Godfrey serial correlation LM test, Breusch-Pagan-Godfrey heteroskedasticity test, and Ramsey reset test. The normality test confirmed model normality, and the RESET test confirmed no misspecification.

Table 8: Diagnostic Test Results

Test	Statistic	P-value
Normality test (X^2_N)	JB = 7.2099	0.0872
Breusch-Godfrey Serial Correlation LM Test (X^2_{SC})	1.2982	0.2901
Breusch-Pagan-Godfrey Heteroskedasticity Test (X^2_H)	0.5692	0.8370
Ramsey REST Test	1.0851	0.3068

The Breusch-Pagan-Godfrey heteroskedasticity test confirmed the model's variance, and structural stability was confirmed through the CUSUM test and CUSUM Squares. The forecast for economic growth rate showed a 0.4% reduction in 2021, boosting to 3.2%, as revealed in Figure 3.
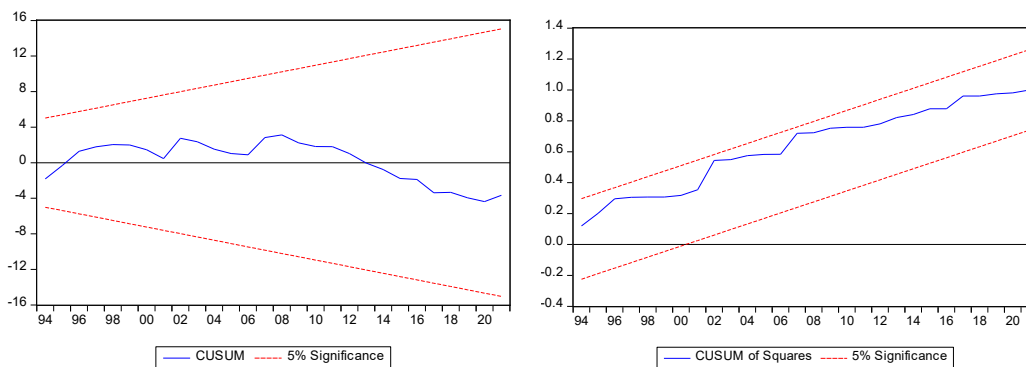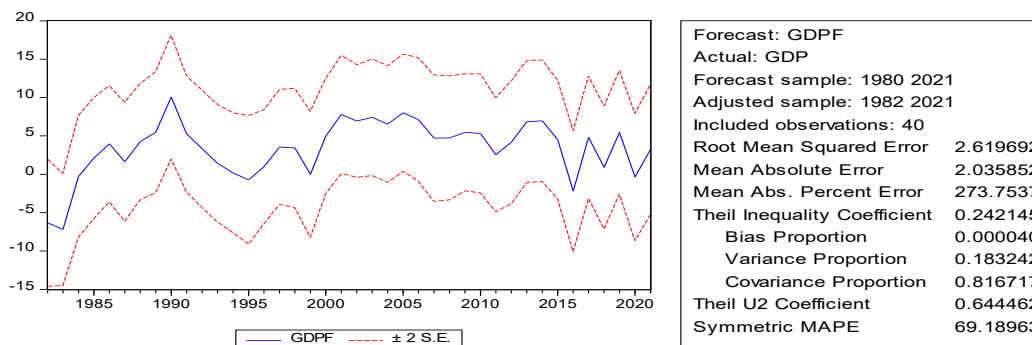

Figure 2: Model Stability Test

Figure 3: Dynamic Forecast of Economic Growth Rate in Nigeria

Discussion

Based on the findings of the results, the study revealed that from the long-run estimate, the depreciation of the exchange rate of naira to the dollar positively influences economic growth at the 5% level, which means that for every 1% increase in the exchange rate, economic growth rises by 5.6%. This finding violates the stance of Eroğlu & Olayiwola (2023), Ani & Udeh (2021), and Ehikioya (2019). The study also finds that as the trade balance increases by 2.49%, the depreciation of the exchange rate from naira to dollar impacts economic growth in Nigeria (Adebayo, 2020; Elijah & Musa, 2019).

Also, the inflation rate of the Nigerian economy positively affects economic growth. However, it has no statistical significance at 5%, and the findings are supported by the results

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of Adenomon & Ojo (2020), which means that the currency continues to weaken. As expected, the economic growth rate would decline as interest rates rise. However, the reverse is the case of the study, which shows that economic growth rises by 20.9% at every one percent increase in interest rates, which is consistent with that of Adaramola & Dada (2020). The short-term results revealed that for every 1% increase, exchange rate depreciation stabilized by 59.8%, correcting this disequilibrium from the long-run results.

Therefore, the practical implication of this result is that the Central Bank of Nigeria should consistently readjust the interest rates and give grants and non-interest rate loans to small and medium enterprises so that there will be leverage to produce, thereby leading to an increased mash-up with the import and export of consumable goods. This measure gives Nigeria's non-oil sector a boastful capability, especially in reducing and sustaining fiscal policies. Also, the practical implication of this result on Nigeria, to combat the threat of currency depreciation on economic growth, should be noted, as its constant deficit financing and non-economic and statutory expenditure must be reduced. With this, local and international investors would have fair business leverage.

Conclusion

In conclusion, numerous and complex linkages exist between exchange rate depreciation, trade balance, and economic development in Nigeria. However, as the investigation progressed, several studies shed light on various aspects of this link. According to the findings, currency rate depreciation has a favorable and significant influence on Nigeria's economic growth at 1% in both the short and long run. It demonstrates that exchange rate depreciation slows economic growth, possibly due to increased import costs and diminishing buying power caused by the beneficial effect of inflation on economic growth.

The study highlights the significance of trade balance in boosting economic growth, with exchange rate depreciation potentially increasing local exports. However, it is crucial to consider factors like fiscal constraints, governmental rules, and macroeconomic shocks that may influence this relationship.

Therefore, it is recommended that Nigerian authorities consider the possible negative effects of currency rate depreciation on economic growth in light of these findings. The currency rate should be stable, and trade imbalances should be effectively controlled. More measures to limit interest rates and debt building should be implemented to encourage long-term economic growth. Further research into the relationship between currency depreciation and economic development in Nigeria should look at more factors and extended periods.

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