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Impact of Monetary Policies on Export Sector Performance in Nigeria

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Abstract: *This study revalidates the nexus between monetary policies and export sector performance in Nigeria from 2014 to 2023. The series is sourced from Central Bank of Nigeria (CBN) Statistical Bulletin. The stationary series of the generated residual prompts the adoption of the Error Correction Model (ECM). The variables considered in the model includes export value, real effective exchange rate, maximum lending rate, money supply, credit to core private sector, gross domestic product and consumer price index. The stationarity of the residual using Augmented Dickey Full unit root test established the existence of the relationship among the series considered in the model. The findings reveal that historical export levels are the primary predictor of current export behavior, while exchange rates positively influence export sector performance. The analysis also uncovers that monetary conditions, particularly reduced private sector credit access and negative money supply effects, create significant constraints on export growth, suggesting the need for targeted financial sector reforms to enhance export sector.*

Keywords*:* monetary policies, export sector performance, exchange rate, maximum lending rate, money supply

INTRODUCTION

It is well established in literature that monetary policies have the capacity to positive influence export performance with important implication for economic growth (Afolabi et al. 2018; Ifeakachukwu & Alao, 2018; Odungweru & Ewubare, 2020). Economic theorists widely agree that a country's export performance significantly shape its economic development trajectory because it provides both foreign exchanges and market stimulus (Odungweru & Ewubare, 2020; Chimobi & Uche, 2010; Obadan, 2004; Frankel & Romer, 1999). In an attempt to restore export

sector position, Nigeria government have instituted several policies and programs notably Export Expansion Grant Funds Scheme (EEGF), Duty Draw Back/Suspension and Manufacture in Bond Scheme, Export Adjustment Fund Scheme and Nigeria Export- Import Bank (NEXIM), Nigeria Export Promotion Council (NEPC), Nigeria Export Processing Free Zone Scheme (NEPFZS) and Nigeria Export Processing Zone Authority (NEPZA) amongst other. However, much have not been achieved in terms of the sub-sector impact on export sector.

The Central Bank of Nigeria (CBN) has demonstrated a dynamic approach to monetary policy implementation, alternating between contractionary and expansionary measures to maintain price stability and economic balance. Through these policy shifts, the CBN strategically adjusts its monetary instruments, including interest rates, reserve requirements, and open market operations, to influence credit conditions and economic activity. However, despite these deliberate interventions, the export sector's performance has remained below its potential, failing to achieve the desired diversification and growth objectives (Okosodo & Imoughele, 2019; Arikpo & Adebisi, 2017).

This persistent underperformance of the export sector is particularly concerning given its implications for Nigeria's economic structure. For over six decades, the nation's economic framework has shown remarkable resistance to change, characterized by a continued overdependence on natural resource exports. This structural rigidity has profound implications, as the country's foreign exchange earnings, trade balance, and overall economic wellbeing remain weak linked to the performance of its natural resource sector, primarily oil exports. The inability of monetary policy measures to effectively channel credit to export-oriented businesses across diverse sectors has perpetuated this mono-product export structure, limiting the potential for economic diversification and sustainable growth. This study therefore seeks to revisits the impact of monetary policies on export sector in Nigeria from 2014 to 2023.

Despite the government and monetary authority efforts to diversify the economy and boost export sector through various monetary measures, export activities have remained suboptimal. The CBN monetary tightening measures, including raising the Monetary Policy Rate (MPR) to 27.25% in September 2024, were intended to curb inflation but may have inadvertently constrained credit to the private sector, potentially hindering export-oriented businesses, which is contrary to earlier submission in literature (Okosodo & Imoughele, 2019; Arikpo & Adebisi, 2017; Nwanyanwu, 2012; Adam, 2005). There are also issues of exchange rate, inflation and interest rates instability that is threatening the strength of the domestic currency and credit availability (Odungweru & Ewubare, 2020; Ifeakachukwu & Alao, 2018).

It's quite worrisome that much have not been achieve in terms of the contribution of export across different sectors and its overall impact on export sector. This is evidence as statistics shows that structural reforms and monetary policies implementations geared toward boosting export performance remains on an unimpressive threshold given the negative growth rate of export sector

(Okosodo & Imoughele, 2019). This is even more appalling as oil activity crowds out other economic activities that was suppose complement and boost overall export growth (Ifeakachukwu & Alao, 2018). Also, high inflationary pressures have driven up interest rates, consequently deterring producers and exporters from accessing critical investment and export financing in Nigeria, thereby creating significant economic challenges (Usman & Yusuf, 2023).

However, there are mixed findings on the effectiveness of these monetary policy tools, where monetary policy rate and exchange rate had an insignificant/ negative influence on export diversification (Ifeakachukwu & Alao, 2018; Odungweru & Ewubare, 2020; Owuru & Farayibi, 2016). However, literature emphasized that exchange rate exerts significant positive effect on foreign trade and/or export performance (Odungweru & Ewubare, 2020; Usman & Yusuf, 2023). In a related study, bank credit, interest rate exhibits inverse effect on export sector while inflation exhibit direct significant effect (Okosodo & Imoughele, 2019). Also, studies found negative influence of interest rate on foreign trade (Ashamu, 2020; Usman & Yusuf, 2023). Emphasizing further, Owuru & Farayibi, (2016) allude that the unpredictable changes in exchange rate have pervasive effects on the performances of the export sector of the country. Given the inconsistent outcomes in empirical studies, it becomes imperative to revisit the role of monetary policy components—exchange rate, interest rate, money supply, credit to the private sector—have on export sector in Nigeria from 2014M1 to 2023M3 using monthly time series data.

The broad objective of this study is to examine the impact of monetary policies on export sector in Nigeria from 2014 to 2023. The specific objectives include;

i) To examine the impact of exchange grate on export sector in Nigeria.
ii) To examine the impact of maximum lending rate on export sector in Nigeria.
iii) To examine the impact of bank credit to private on export sector in Nigeria.

The hypotheses for this study are expressed in the null form:

Ho_i: Exchange rate have no significant impact on export sector in Nigeria.
Ho_2: Maximum lending rate have no significant impact on export sector in Nigeria.
Ho_3: Bank credit to private sector have no significant impact on export sector in Nigeria.

LITERATURE REVIEW

Conceptual Review

Monetary Policies

This first section focuses on the conceptual clarification. This begins with monetary policy is described as deliberate effort by the monetary authority to control the supply and the credit conditions for the purpose of achieving certain broad economic objectives which might be mutually exclusive (Falade & Folorunso, 2015). Monetary policy is one of the economic strategies of the government undertaken though the apex bank in the country to foster macroeconomic stability in order to promote economic growth (Hillary, Imo & Uche, 2018). Afolabi et al. (2018)

posited that monetary policy serves as a key tool for economic stabilization for regulating the cost and availability of money or credit in the economy. Amadeo (2020) opined that monetary policy is a central bank's actions and communication used in the management of money supply in the economy through credits, interest rates, cash reserve requirement and money market operations. Sule (2020) further viewed monetary policy tools as monetary parameters that influence the supply of money in an economy with the sole aim of achieving price stabilization and economic expansion. Monetary policy rate is the baseline interest rate that every other interest rate adds on to (Obi, 2020). The ability to use monetary policy tools to influence the economy depends on how far the monetary authority is able to control the cost and volume of money (Obi, 2020).

Monetary policy tools are categorized into direct and indirect. The direct monetary policy includes direct credit control, interest rate, exchange rate, moral suasion, prudential guidelines, selective credit control and loans to deposit ratio. But the focus of this study is on monetary policy rate, cash reserve requirements; liquidity ratio. Essentially, changes in monetary policy rate are the benchmark interest rate that determines all commercial bank's lending rate (Onaolapo & Shomade, 2017). The choice of these variables is because they are susceptive to changes and their respective rates are determined by the monetary authority and this depends on the prevailing macroeconomic variable's behaviour (Sule, 2020), so any changes to monetary policy affects their rates with implication on banking lending interest rate.

Exchange Rate

The exchange rate has been described from different perspectives by researchers. It is adjudged that exchange rate refers to the price of a country's currency in relation to another currency (Adesoye, 2012). Mordi, (2006) maintains that exchange rate is the price of one country's currency in terms of another country's currency. Exchange rate is the ratio between a unit of one currency and the amount of another currency for which that unit can be exchanged at a particular time (Ngerebo & Ibe, 2014). Obadan and Okojie (2016) conceptualize exchange rate as an important price variable that connects domestic and world markets for goods and assets, serving as a measure of international competitiveness. From a more technical perspective, Asher (2018) defines exchange rate as the rate at which one currency can be converted into another in the foreign exchange market, emphasizing its role in international trade and financial transactions. According to MacDonald (2015), exchange rate represents not just a conversion factor between currencies but a critical macroeconomic variable that influences a country's external sector performance and overall economic stability. Further elaborating, Isard (2017) describes exchange rate as a crucial relative price that helps achieve external and internal balance in an economy, while simultaneously serving as a key instrument of international trade. Ahmed and Ali (2019) view exchange rate as a vital economic metric that reflects the relative strength of two currencies and serves as a barometer for comparing international prices and costs.

Lending Interest Rate

Yusuf, Abidin, Owuru, Akanbi, and Musibau, (2017) viewed interest rates as the rental payments for the use of credit by borrowers or the returns to lenders of loanable funds for parting with liquidity. CBN (2016) interest rate is the amount charged on borrowed money, expressed as a percentage of the principal, by a lender to a borrower for the use of money. CBN further emphasized that interest rate is expressed as a percentage of the amount borrowed (principal) for one year or any other time period – month, week, day etc. – as agreed by the lender and borrower at the time of contracting the loan. Also, Inimino, Abuo and Bosco, (2018) they posited that interest rate is the percentage of the principal that is paid as a fee over a specified period of time. According to Oladipo, Samuel, Olumuyiwa, Abidemi, (2020) interest rate is the percentage of the principal which is paid as a fee over a given period. It may as well be described as lease payments for the use of credit by borrowers and the return to get rid of liquidity by lenders over time.

Banks Credit to Private Sector

Bank credit to the private sector represents a crucial financial intermediation function where banks channel surplus funds from savers to deficit units in the private sector for productive investments. (Diamond & Dybvig, 2018; Levine & Zervos, 2014). This concept emphasizes how credit availability enables businesses to expand operations, invest in new technologies, and increase productive capacity (Beck, Levine & Loayza, 2016; King & Levine, 2013). Bank credit to the private sector serves as a critical channel through which monetary policy decisions affect the real economy. This concept focuses on how changes in monetary policy instruments influence banks' lending behavior and, consequently, private sector access to credit (Bernanke & Gertler, 2015; Kashyap & Stein, 2017). This is the quantum of credit extended to the private sector by financial institutions. These loans are made by these institutions to the receiving agent at varying rates of interest.

Export Sector Performance

Export sector performance can be understood as the effectiveness and efficiency with which an economy exports goods and services, contributing to its revenue generation, economic growth, and overall development (Owuru & Farayibi, 2016). Export sector performance represents a comprehensive assessment of a nation's international trade capabilities, focusing on the volume, value, and diversity of goods and services sold to foreign markets (Magaji, Abubakar& Yusuf, 2022; Osigwe, 2015). Export sector performance is predicated on the ability of a country to sell goods and services produced domestically to international markets (Mohan, 2005). In Nigeria, export encompasses two critical dimensions: the oil sector, dominated by crude oil exports, and the non-oil sector, which includes agricultural products, manufactured goods, and service-based exports. The effectiveness of export performance is measured by the country's ability to generate foreign exchange, diversify economic outputs, and contribute to overall economic growth and development (Usman & Yusuf, 2023)

Theoretical Review

The second strand of literature builds on monetary analysis put forward by Keynes (1936), rooted in the principles of effective demand. Keynes argued that changes in output and employment are driven by fluctuations in aggregate demand, highlighting the real effects monetary policy can have on output growth. Departing from classical theorists, Keynes emphasized the government's role in stimulating output and aggregate demand, primarily through the central bank's indirect influence. According to Keynes, monetary policy affects output and employment by altering interest rates, which in turn stimulate investment. The ultimate aim of monetary expansion, as Keynes viewed it, is to address unmet demand for money (Jahan et al., 2014). This approach emphasizes the reduction of interest rates, thereby enhancing investors' access to funds and encouraging investment.

On the other hand, Prebisch (1950) and Singer (1950) hypothesis, which emphasizes the importance of export performance for developing countries. The hypothesis argues that expanding the variety of export products is essential because the income elasticity of demand for primary products is low. By pursuing economic diversification, developing nations can mitigate the risks associated with commodity shocks, terms of trade volatility, and price instability. This perspective has been supported by scholars such as Cooper and Brainard (1968), Cadot, Carrère, & Strauss-Kahn, (2010), and Hesse (2008), who highlight the desirability of moving away from reliance on primary products. Furthermore, Shabana and Zafar (2014) underline that diversification has become a critical focus of contemporary economic policy for developing economies. Aligning with the above arguments, the export-led growth hypothesis posits that exports serve as a key driver of economic growth. An increase in the exportation of goods and services boosts export earnings, promotes employment generation, generates profits, stimulates higher productivity, and leads to the accumulation of reserves, these reserves, in turn, enable a country to maintain a stable balance of payments.

Empirical Review

The third strand of literature examines the empirical review. The study on monetary policy has influenced export diversification in Nigeria for the period 1962 to 2014 employed ordinary least squares techniques and the finding demonstrate that monetary policy rate and exchange rate exhibit insignificant influence on export diversification in Nigeria (Ifeakachukwu & Alao, 2018). Odungweru and Ewubare (2020) adopt error correction model to examine the effect of monetary policies on foreign trade in Nigeria between 1980 to 2017, finding reveal that exchange rate exerts a significant positive effect on foreign trade in the long run while Minimum rediscount rate exerts a significant negative effect on foreign trade in the long run. Ashamu, (2020) adopt an Error Correction Model (ECM) to investigated the impact of monetary policy on foreign trade in Nigeria during the period 1981 to 2017, finding show that exchange rate and money supply exhibit positive effect on foreign trade except for interest rate that has a negative. In the study conducted in Nigeria on the impact of deposit money bank credit on the growth of export from 1986 to 2016 using ARDL bounds testing approach, reveal that deposit money bank significant negative effect on

export sector in the long-run while in the short run, deposit money bank credit exhibit positive significant impact on export sector (Okosodo & Imoughele, 2019).

Martinez-Zarzoso and Johannsen (2017), using firm-level data, examined the impact of monetary uncertainty and political instability on the extensive and intensive margins of trade (exports and imports) in Eastern Europe and Central Asia. Their study revealed that exchange rate volatility negatively affects both the likelihood of firms exporting and the intensity of their exports. However, in a study carried out in Turkey on the impact of exchange-rate volatility on exports from 1992 to 2010, the results show that export is not sensitive to changes in currency rates (Demez & Ustaoglu, 2012). In an empirical study conducted in Nigeria using Johansen cointegration and Error correction model reveals that real interest rate exert significant negative effect on export performance while exchange rate exhibits significant positive effect (Usman & Yusuf, 2023). Rahman (2017) study reveal that most variability in export performance is predicated on macroeconomic variable such as interest rates, inflation, money supply, exchange rates, and industrial production.

Employing ARDL bounds cointegration test and its associated ARDL short-run and long-run coefficients test and Pairwise Granger Causality test, Eze and Atuma (2017) examined the effect of monetary policy variables on net export of Nigeria for the period 1981-2016. The results also indicated that money supply has positive insignificant effect on net export of Nigeria. Similarly, the results showed that interest rate, exchange rate, have negative insignificant effect on net export of Nigeria. Also, the results of the Pairwise Granger causality test significant causality run from money supply to net export. Using VECM, Arikpo and Adebisi (2017) examined the effects of deposit money banks financing on real sector output in Nigeria. Findings revealed that deposit money banks financing have a significant effect on the trade sector while interest rate spread has an inverse effect on the trade sector output. Douglas, Eche and Adi (2018) used analysis of variance and result demonstrate that interest rates do not have a significant impact on the performance of the manufacturing sector

Elechi, Kasie and Chijindu (2016) examine the contribution of the Nigerian banks to the promotion of non-oil exports 1990-2013, results of co-integration and granger causality test, demonstrate that even though there is existence of long-run relationship, banks credit failed to promote non-oil export. Using ARDL approach, Iyoboyi and Abdelrasaq (2015) examined the impact of policy and institutions on non-oil exports in Nigeria for the period 1961-2012, findings shows that both in the long and short run, broad money supply and exchange rate have significant positive impact on non-oil exports. Owuru and Farayibi (2016) analyzed exchange rate trends and export performance in Nigeria from 1970 to 2015 using descriptive statistics. Their findings revealed that exchange rate volatility significantly impacted Nigeria's export performance, particularly influencing the volume of export demand. Ajudua, (2020) used error correction model and found that exchange rate exhibits significant negative effect on export performance in Nigeria corresponding with earlier findings in literature (Owuru & Farayibi, 2016; Fountas & Aristotelous, 1999).

Danmola and Olateju (2013) adopt error correction model and OLS to examined the influence of monetary policy on the components of current account from 1970 to 2010 in Nigeria, findings revealed that money supply has positive influences on import, export and industrial output while the exchange rate influences import, export and industrial output negatively. Using OLS to investigate the effect of exchange rate fluctuation and export performance in Nigeria (1961-2011), result shows that fluctuations in the naira exchange rate affect manufacturing and agricultural exports more than it affects oil export (Slowe, 2013). On the effect of deposit money bank credit on export, Gupta and Keshari (2013) used Ordinary Least Square technique and finding shows that increasing in the flow of bank credit to export sector, restructuring the interest rates enhances export performance.

Literature Gap

The above extant literature reveals inconsistent findings on the impact of monetary policies on export sector (Odungweru & Ewubare, 2020; Iyoboyi & Alec, 2015; Ifeakachukwu & Alao, 2018; Eze & Atuma, 2017). There are varied effects across exchange rates, money supply, and deposit money bank credit, with research showing both positive (Okosodo & Imoughele, 2019) and negative influences (Elechi et al., 2016). Exchange rate volatility studies yield conflicting results, ranging from significant negative export performance impacts (Martinez-Zarzoso & Johannsen, 2017) to export insensitivity (Demez & Ustaoglu, 2012). This study revisits the nexus between monetary policies and export performance in Nigeria taking cognizance of direct monetary policy tools of exchange rate, maximum lending rate, money supply alongside other germane series of banks credit, consumer price index and gross domestic product for the period of 2014 to 2024 using quarterly data series.

METHODOLOGY

Most notably, this study employed a quantitative research design. The statistical validity of the association between monetary policies and export sector in Nigeria was examined by the researcher using this method.The study is secondary analysis and the timeframe covered is from 2014 to 2023 using monthly time series obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. Export sector (EXP) proxied by nominal value of export of goods and services is measured in US$ million. The real effective exchange rate (REER), maximum interest rate (MLR), inflation rate (INFL) is expressed in rates. Money supply (MS) and credit to core private sector (CCPS) are expressed in Naira Million while Gross Domestic Product (GDP) is expressed at 2010 Constant Basic Prices (₦' Million). The data used ranges from 2014Q1 to 2023Q4 and were chosen based on literature (Odungweru & Ewubare, 2020; Ashamu, 2020; Okosodo & Imoughele, 2019; Owuru & Farayibi, 2016; Demez & Ustaoglu, 2012). To minimize the sharpness in time series data and produce effective outcomes, the low frequency data (EXP, MS, CCPS & GDP) in nominal form were transformed into log-linear form (LN) or growth rate (%) prior to estimation, following the approach of Shahbaz et al. (2013).

Model Specification

In other to investigate the above objective, this study adapts the empirical model by Ifeakachukwu and Alao (2018) who examine the nexus between monetary policy and export diversification in Nigeria using ordinary least square technique. The functional form of the model is expressed in equation 1:

$$EXP = f(REER, MLR, MS, CCPS, \ GDP, CPI) \quad [1]$$

Where: EXP = Export sector proxied by nominal value of export (US$ Million), REER = Real Effective Exchange Rate (N/US$), MLR = Maximum Interest Rate (rate), MS = Money Supply (N'Million), CCPS = Credit to Core Private Sector (N'Million), GDP = Gross Domestic Product (N'Million) and CPI = Consumer Price Index (Rate).

Error Correction Model Specification is expressed in equation [2];

$$\Delta Y_t = \alpha_0 + \beta 1 \Delta EXP_t + \beta_2 \Delta REER_t + \beta_3 \Delta MLR_t + \beta_4 \Delta MS_t + \beta_5 \Delta CCPS_t + \beta_6 \Delta GDPt + \beta 7 \Delta CPI_t + \gamma ECT_{t-1} + \varepsilon_t \quad [2]$$

ΔY_t: First difference of the dependent variable; ECT_{t-1}: Error Correction Term (lagged one period); α_0: Constant term; $\beta_1 - \beta_8$: Short-run coefficients; γ: Speed of adjustment coefficient
ε_t: Error term

Method of Data Analysis

The main estimation method used in the study was the Error Correction Model (ECM). Other econometric diagnostic techniques include the Heteroskedasticity Test and the Breusch-Godfrey Serial Correlation LM Test: Breusch-Pagan-Godfrey, and Ramsey. RESET Tests. The analysis began with the summary of descriptive statistics and the preliminary Augmented Dickey Fuller unit root test.

RESULTS AND DISCUSSION OF FINDINGS

The visual illustration in Figure 1 reveals that REER demonstrates significant fluctuations, indicating exchange rate instability with periods of appreciation and depreciation. The MLR shows a relatively stable upward trend, reflecting consistent tightening of lending conditions. Inflation (INFL) on the other hand exhibits a persistent rise over time, indicating increasing price levels and potential economic pressures. Figure 2 is characterized by significant transformations across export values, credit to private sector, money supply and capital. For instance, export sector value (EXP) demonstrated high volatility, plummeting from a peak of $8,755.87 million in April 2014 to its base of $1,920.61 million in April 2020 coinciding within the period of COVID-19 pandemic, with subsequent partial recovery but persistent instability. Credit to Core Private Sector (CCPS) exhibited remarkable resilience, growing steadily from 8.86 million Naira to 30.35 million Naira, representing a 244% increase and suggesting continued financial sector confidence despite

economic challenges. Money Supply (MS) expanded substantially from 15.49 million Naira to 37.28 million Naira, indicating an expansionary monetary policy with accelerated growth, potentially signaling efforts to maintain economic liquidity and combat economic downturn. The GDP values range from a low of approximately 15.36 million Naira in January 2014 to a peak of about 21.24 million Naira in November 2022. The data exhibits regular cyclical fluctuations, with noticeable dips in January of each year, followed by gradual increases throughout the subsequent months. Despite volatile export earnings, domestic financial systems demonstrated resilience through steady credit expansion, monetary supply growth, and sustained capital investment, signaling structural adaptability and a shift in economic strategy amid global economic challenges.

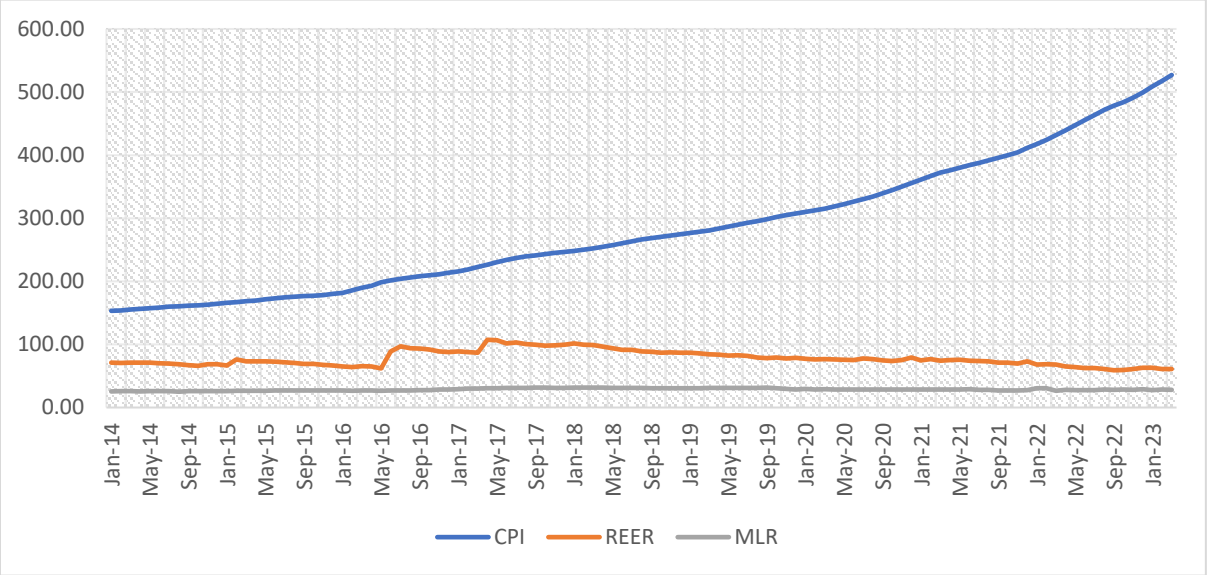

Figure 1: Real Effective Exchange Rate, Maximum Lending Rate and Inflation Rate (Rates)

Source: Figure plot by author using data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2023)

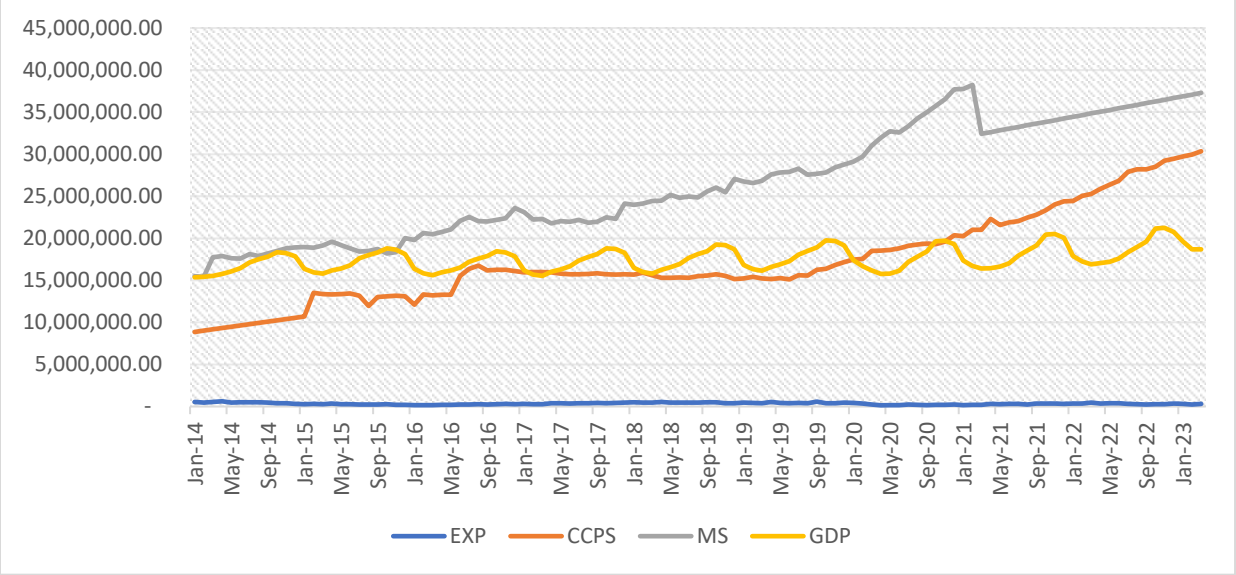

Figure 2: Export value (US$ Million), Core Credit to Private Sector (N'Million), Money Supply (N'Million), and Gross Domestic Product (N'Million)
Source: Figure plot by author using data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2023)

Table 1: Descriptive Statistics

	EXP	REER	MLR	MS	CCPS	GDP	INFL
Mean	4474.11	78.0694	28.5613	26546149	17336505	17563326	283.5184
Median	4429.89	75.228	28.3911	25169014	15787691	17382739	266.1845
Maximum	8755.87	107.348	31.559	38230860	30346135	21243453	526.9827
Minimum	1920.61	59.0672	25.0722	15424175	8864586	15361988	153.2645
Std. Dev.	1423.3	12.1802	1.86987	6673609	5352842	1395769	102.4815
Skewness	0.46481	0.58992	0.11655	0.219664	0.765308	0.502387	0.627431
Kurtosis	2.8837	2.39805	1.75592	1.663345	2.954103	2.552814	2.40097
Jarque-Bera	4.05946	8.11398	7.40954	9.155909	10.84512	5.594146	8.9425
Probability	0.13137	0.0173	0.02461	0.010276	0.004416	0.060988	0.011433

Source: *Extract from EViews 12 Output*

Table 1 holds the descriptive statistics and it reveals that export values (EXP) exhibit significant variability in the mean and standard deviation values, reflecting external trade fluctuations. The real effective exchange rate (REER) shows moderate variability in the average standard deviation values and a slightly positive skew, suggesting episodes of currency appreciation. Maximum lending rate (MLR) has minimal variation in the mean and standard deviation, indicating stable lending conditions. Money supply (MS) and credit to the core private sector (CCPS) are

substantial, with large standard deviations indicating uneven growth. The GDP demonstrates a steady upward trajectory, indicating consistent economic growth. Simultaneously, the CPI shows significant variability, implying suggesting notable price fluctuations. The positive skewness in both metrics (GDP & CPI) indicates occasional higher values, while the moderate kurtosis means a distribution close to normal, reflecting the underlying economic dynamics of price changes and economic output during this period. Jarque-Bera test results suggest that most variables deviate slightly from normality, particularly CCPS with significant probabilities.

One of the pre-conditions for modelling time series data is determining the stationarity status of the variables of interest. As a result, presented in Table 2 are unit root testing results as obtained from a number of alternative unit root tests we considered.

Table 2: Unit Root Test

Augmented Dickey-Fuller Unit Root Test								
Variables	*ADF @ Level*	*Prob.*	*ADF @ 1st Diff.*	*1% Critical Value*	*5% Critical Value*	*10% Critical Value*	*Prob.*	*Order of Integration*
EXP	-2.938	0.1548	-12.502***	-3.497	-2.887	-2.581	0.0000	I(1)
REER	-1.332	0.6125	-10.375***	-3.491	-2.887	-2.581	0.0000	I(1)
MLR	-2.264	0.1856	-12.748***	-3.491	-2.888	-2.581	0.0000	I(1)
MS	-1.388	0.5855	-11.145***	-3.491	-2.888	-2.581	0.0000	I(1)
CCPS	-0.723	0.8357	-11.215***	-3.491	-2.888	-2.581	0.0000	I(1)
GDP	1.637	0.9995	-3.763***	-3.497	-2.897	-2.582	0.0045	I(1)
CPI	-0.965	0.7633	-4.166***	-3.493	-2.888	-2.582	0.0012	I(1)

Source: *Extract from EViews 12 Output*

Table 3: Unit Root Test Using Residual Series

Null Hypothesis: RESID01 has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.171996	0.0011
Test critical values:	1% level	-3.491345	
	5% level	-2.888157	
	10% level	-2.581041	

*MacKinnon (1996) one-sided p-values.

Source: *Extract from EViews 12 Output*

The unit root test reveals strong evidence of stationarity in the residual series, with an ADF test statistic of -4.171996 significantly lower than critical values. The extremely low probability value of 0.0011 allows rejection of the unit root null hypothesis, indicating a stationary residual series

and suggesting a stable long-run equilibrium relationship among the variables in the economic model.

Table 4: Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3451.873	1935.287	1.783649	0.0776
EXP(-1)	0.704996	0.092412	7.628815	0.0000
REER(-3)	23.38329	11.72185	1.994846	0.0489
MS(-1)	-0.000145	5.43E-05	-2.672987	0.0088
MLR(-2)	-89.07303	73.23085	-1.216332	0.2268
CCPS(-3)	-0.000213	8.84E-05	-2.408081	0.0179
GDP(-4)	1.66E-06	5.20E-05	0.031962	0.9746
CPI(-1)	21.09259	7.575033	2.784489	0.0064
ECM(-1)	-0.333023	0.121761	-3.716911	0.0142
R-squared	0.769447	Mean dependent var		4331.086
Adjusted R-squared	0.750433	S.D. dependent var		1278.894
S.E. of regression	638.8933	Akaike info criterion		15.83844
Sum squared resid	39593917	Schwarz criterion		16.06458
Log likelihood	-830.4371	Hannan-Quinn criter.		15.93009
F-statistic	40.46603	Durbin-Watson stat		2.128208
Prob(F-statistic)	0.000000			

Source: *Extract from EViews 12 Output*

The lagged export variable (EXP(-1)) demonstrates a strong positive and statistically significant relationship suggesting previous export levels strongly influence current export performance. Real Effective Exchange Rate (REER) at lag 3 demonstrates a positive and statistically significant relationship, implying that exchange rate movements positively influence exports, which confirm to earlier empirical findings (Odungweru & Ewubare, 2020; Ashamu, 2020; Owuru & Farayibi, 2016) but contrary to others (Ajudua, 2020; Ifeakachukwu & Alao, 2018; Demez & Ustaoglu, 2012). Money Supply (MS) exhibits a negative and significant effect demonstrating contractionary monetary conditions reduce export sector, which is contrary to finding in literature based on sign (Ashamu, 2020; Eze & Atuma, 2017). Although findings in literature all demonstrate that money supply has an insignificant effect on export performance (Ashamu, 2020; Eze & Atuma, 2017). The analysis of export sector with maximum lending rate (MLR) reveals limited statistical significance, which agrees with the earlier finding. This is evidence as MLR at lag 2 shows a negative coefficient but is statistically insignificant partly in line with the earlier finding in literature (Usman & Yusuf, 2023; Arikpo & Adebisi, 2017), implying no conclusive impact on export sector. Credit to Core Private Sector (CCPS) also shows a negative and significant relationship indicating potential constraints in credit availability, which is in line with the finding in literature (Okosodo & Imoughele, 2019) but contrary to other study (Arikpo & Adebisi, 2017; Gupta & Keshari 2013). This prompt the call by Gupta and Keshari (2013) on the need to

restructure the interest rates to enhances export sector. Gross domestic product measuring (GDP) measuring output of goods and services at lag 4 demonstrates an extremely minimal positive coefficient with a near-zero probability, indicating no meaningful relationship with export performance in this model. Consumer Price Index (CPI) displays a positive and significant impact meaning inflationary pressures correlate with export growth.

The Error Correction Model reveals a robust export sector analysis with an impressive R-squared of 0.769, indicating that approximately 77% of export variations are explained by the selected independent variables. The Error Correction Mechanism (ECM) coefficient of -0.333 is statistically significant (p-value 0.0142), suggesting a moderate speed of adjustment towards long-run equilibrium. Diagnostic tests like Durbin-Watson statistic (2.128) indicate minimal autocorrelation, while the F-statistic (40.466) with a probability of 0.000000 confirms the overall model's statistical significance and explanatory power in understanding export sector determinants.

Table 5: Post-Estimation Results

Linearity Test	**Autocorrelation test**	**Heteroscedasticity test**
Ramsey RESET	**LM Test**	**ARCH**
1.065785 (0.3045)	0.387026 (0.6801)	2.423736 (0.1226)

Source: *Extract from EViews 12 Output*
Note that probability values for the post-estimation test are in parentices

Table 5 presents post-estimation results for model. The null hypothesis of linearity is maintained and the model is appropriately stated as the Linearity RESET test verifies that the model is stable. The presence of autocorrelation and the rejection of the serial correction null hypothesis, which appears to be consistent with the economic sustainability model, were further investigated in this work. Also, this study discovered that the export sector model's null hypothesis of heteroscedasticity was repeatedly rejected. This among others is an indication that the empirical estimates obtained from the estimated model are efficient and robust for policy inference.

CONCLUSION AND RECOMMENDATIONS

The study analyzed the impact of monetary policies on export sector in Nigeria from 2014M1 to 2023M3 using an error correction model (ECM). The findings reveal complex dynamics in export sector determinants, with past export levels serving as the strongest predictor of current performance. While exchange rate movements show a positive influence on exports, monetary conditions present mixed effects - money supply demonstrates a negative impact contrary to some literature, and lending rates show limited significance. The significant negative relationship between credit to the private sector and exports suggests potential financing constraints that may

be hampering export growth. The results point to the need for a balanced policy approach that considers both monetary and real sector variables. The positive relationship between inflation and exports, coupled with the minimal GDP impact, implies that price competitiveness may be more crucial for export sector than overall economic output. These findings indicate that policymakers should focus on maintaining exchange rate stability, improving credit accessibility to the core private sector, and carefully managing monetary conditions to optimize export sector in Nigeria. Specifically, to boost Nigeria's export sector activities, authorities should prioritize maintaining exchange rate stability while expanding credit access through specialized export financing windows, streamlined grants, and credit guarantees with single-digit interest rates. Also, establishing dedicated export infrastructure like processing terminals and industrial parks, coupled with strengthened institutional support through a one-stop facilitation center, will create an enabling environment for sustainable export growth in Nigeria. The following recommendations were preferred.

i) Since exchange rate exert a positive and statistically significant impact on export sector in Nigeria, the monetary authority should allow the market forces to determine exchange rate, so that an equilibrium exchange rate that will encourage export activities.
ii) Given that maximum lending rate exhibit negative impact on export sector in Nigeria, the monetary authority can consider using expansionary monetary policy which will reduce interest rate and encourage more investment.
iii) Credit to Private Sector has a negative and significant on export sector in Nigeria, the monetary authority and deposit money banks can be encouraged by lowering the lending interest rate because low lending rate will encourage more borrowing by private investors which will boost investment in Nigeria and since investment is one of the components of gross domestic product, there will be increase in gross domestic product.

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