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FINANCIAL DEEPENING AND EXPORTS ACCOMPLISHMENT IN NIGERIA: AN ARDL AND ECM APPROACH

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ABSTRACT
The financial system by generating crucial stabilizing benefits through improved access to financial services and transaction volumes in Nigeria, is adjudged to be mildly free from financial repression resulting in reduction of export accomplishments as a result of weak liquidity management and reactive technological innovations. This necessitated the study to examine financial deepening's impact on export accomplishment in Nigeria from 1981 to 2020. Domestic credit to private sector, money supply, foreign direct investment, rate of inflation and trade openness were the explanatory variables while export was the dependent variable. The Auto-Regressive Distributed Lag (ARDL) model and Error Correction Model(ECM) was employed using time series data. The results of the analysis showed a negative and significant effect of financial deepening on the country's export. Money supply, foreign direct investment and trade openness has positive influence, whereas inflation rate was negative on export accomplishment. The conclusion derived from the results is a negative and significant relationship between financial deepening and export accomplishment in Nigeria while the reverse is the case for money supply, foreign direct investment and trade openness; implying problems of credit allocation, financial regulation and supervision. The recommendation is that the Nigerian government through its policy originators should improve their efforts on institutional and policy reforms in order to expand export accomplishment by encouraging stable, sustainable and innovative financial deepening in a conducive economic and political environment for optimal growth performance.

Keywords: *Financial deepening, export accomplishment, trade openness, Inflation, Auto-Regressive Distributed Lag Model.*

INTRODUCTION

The level of financial deepening of various nations of the world is globally acknowledged as a potentially important mechanism for export accomplishment and long run output growth. While intermediating between the surplus and deficit units of a nation, the efficiency and effectiveness of financial deepening depends largely on the development of the financial system. Good business opportunities, investments, savings mobilization, trade facilitation, risk hedging and diversification are enhanced by a well-developed financial system resulting in efficient resource allocation, faster accumulation of human and physical capital and rapid technological advancement. Financial deepening occurs when there is development in size, efficiency and stability of financial markets along with increased access to financial markets (Guru &Yadav, 2019). It refers to a condition of sufficient liquidity and smooth financial liquidation (Okafor, Onwumerey & Chijindu, 2016). Some factors affecting financial deepening are; the legal tradition, institutions, government intervention, openness policy and political factors. Financial deepening is poised to have a positive effect on export accomplishment of a country thereby leading to improvement in; balance of payment, labour employment, production output, managerial and marketing expertise, technological advancement and overall economic growth (Bank-Ola, 2021).

Economic development experts indicate interest in the impact of financial deepening on export accomplishment of her nation, thereby bringing to bear the need for adequate planning and policy formulation to thrive the financial system. Expected increase in export accomplishment is desired as a result of a sound financial system. In view of the numerous policy measures on financial deepening in Nigeria, the country's financial sector has witnessed tremendous development with visible evidences through increased money and capital market activities, rapid expansion of banking operations and development of various financial networks of Automated Teller Machines (ATMs), Point of Sales (POS) devices, digitized/electronic fund transfer among others (Samuel-Hope, Ehimare&Osuma,2020). Growth in financial system in Nigeria has led to a steady but slow growth in export accomplishment in the Nigerian economy. In addition, the Nigerian financial system has gone through several reforms aimed at developing the system and improving the savings habit, investment decisions, innovation, increased production and export accomplishment but unfortunately price instability, high unemployment, decline in manufacturing and industrial output, poor infrastructural facilities, mounting public debt, high exchange rate, adverse balance of payments, among others has resulted in low export accomplishment. This inspired the assessment of financial deepening on export accomplishment in Nigeria and, in particular, whether improvement in financial deepening have positive impact on export accomplishment in the long run. To actualize this objective, the null hypothesis (H_o): Financial deepening has no significant effect on export accomplishment; was tested.

Empirical evidence in the literature on Financial Development in developed and developing nations existed. (Keindrebeogo, 2012;Kim, Lin &Suen, 2010; Do &Levchenko, 2007among others). The major development from these studies are; the inconclusive findings, divergence of opinions, variants of methodology and lumping of countries which neglects the individual characteristic of countries thereby having an in-depth effect on the empirical findings and policy implications. Similarly, there are evidences from Nigeria (Ilemona&Ome, 2021; Samuel-Hope *et.al*, 2020;Yousuo&Ekiou, 2020;Babatunde&Fowowe, 2010 among others). Of these researches, a high percentage used economic growth as the proxy. Thus, it is imperative for a situation analysis that seeks to enhance our grasp of the effects of financial development on export.Others focusing on merchandise trade emphasised on the financial constraint, labour demand, trade regime and export structure changes which increases the cost and reduces the returns to exporting firms. This paper attempts to fill up the gap in the literature on the values on export as a result of financial deepening in Nigeria in terms of; its diversification of business opportunity, high external investment demand, larger financial markets, expanding business opportunity, productivity enhancement in the long run, thereby leading to poverty reduction and welfare improvement using a broader range of 1981 – 2020. This is key to the study because the financial sector manages market risk and credit risk; provides information to market participants and settles international transactions which the industrial sector is yearning for. This gave the drive to find out if the financial deepening policy implemented by the government have been capable of enhancing export accomplishment and enable industries to make informed investment decisions, reaping from the benefit of export and invariably leading to growth of the Nigerian economy. The core question is: Does financial deepening improve export accomplishment in Nigeria? Our main results showed a negatively significant outcome of financial deepening on the country's export accomplishment.

The configuration of the paper is; Section 2 reviews literatures on foreign direct investment and export accomplishment with empirical perspective. Methodology and data used were explained in Section 3. The results of the analysis were presented in Section 4. Section 5 concludes.

LITERATURE REVIEW

The improvement of access to financial services or the increase in relative size and role of the financial system in an economy by being largely free from financial repression is known as financial deepening. It is the act of producing information on investment possibility and capital allocaion; firms monitoring and corporate governance exertion; savings mobilization and easy goods and services exchange. Financial system deepening is the development of financial markets in terms of the size, efficiency and stability with increased access for multiple benefits for the economy (Guru &Yadav, 2019 and Odhiambo&Akinboade, 2009).When goods and services produced in a country are taken to another country for global sales, it is referred to as export and when this increases and grows, it lead to economies of scale and specialisation as a result of the enlarged market, efficient resource allocation, firms' competitiveness, technical and technological advancement, and improvement in human resources. To achieve this feet, huge capital is required which is achievable as a result of financial deepening of the economy.

Madichie, Maduka, Oguanobi and Ekesiobi(2014) found the presence of a negative long run relationship between financial development and economic growth in Nigeria implying that the finance-led growth hypothesis is valid in Nigeria only in the short run while there's stability of both long run and short run relationship. The turning process to reestablish equilibrium after interruption is really slow and there is no bi-directional causality between growth and finance. Suggesting that the government should stratagem to strengthen the micro finance sector for credits availability and accessibility to micro entrepreneurs who are often left without credits by the conventional credit markets. Guru and Yadav 2019 examined the foremost pointers of financial development and macroeconomic variables with panel evidence from BRICS and found substantial variances concerning the selected economies. Using dynamic one-step SYS-GMM estimates, the study confirmed the presence of turnover ratio in indicators such as credit to deposit ratio, size of financial intermediaries, value of shares traded and credit to private sector which are positively significantly in determining economic growth, suggesting a complementary association between the banking sector development and stock market development indicators. Policymakers should therefore induce growth by engaging in actions to concurrent development of both the banking sector as well as stock market.

Okafor, Onwumere and Chijindu(2016) revealed that credit to private sector has a negative and non significant impact on growth and does not granger cause for economic growth thereby recommending the implementation of private sector friendly policies at affordable cost; and harmonization of fiscal policies for sustained growth and stability. Samuel-Hope *et.al* (2020), found out that a long run connection occurred though insignificant, hence, recommends favorable credit lending policies to the private sector by stakeholders in the economy. Savings made should be passed into productive investments that can yield financial deepness. Sayar, (2020) while examining the reasons for the decline in world exports during the global financial crisis and assessing whether the financing constraints have contributed to this collapse by knowing the effect of financing on international trade noted the inclusion in the classical models of international trade, the dependence of international trading companies to both internal and external financing.

The literatures appraised are in disparity and this tend to irregularity of the results. With focus on export, the variables of concern for financial deepening were reflected independently. This paper will enhance the literature using these independent variables (domestic credit to private sector, broad money supply, foreign direct investment, inflation and trade openness) to examine the effects, on export accomplishment in Nigeria.

METHODOLOGY

Theoretical Framework and Model Specification

This research is anchored on the export-led growth hypothesis. According to export-led, growth in export and financial deepening complements each other. As a result, growth in financial deepening stimulates export and vice vassal. This is so because export growth increases the demand for finance (Folarin, 2019; Gui-Diby&Renard, 2015). This study becomes relevant for policy direction. This research adapted the estimated model of Sajo and Li (2017). Economic growth was exchanged for export on the dependent variables while financial structure, structure of international trade, transportation and energy, were exchanged for domestic credit to private sector, broad money supply, foreign direct investment, inflation and trade openness as factors that influences export. The functional relationship is specified as follows:

$$EXP = f(DCP, BMS, FDI, INF, TOP) \quad (1)$$

The econometric model as follows:

$$\mathrm{EXP} = \gamma_0 + \gamma_1\mathrm{DCP} + \gamma_2\mathrm{BMS} + \gamma_3\mathrm{FDI} + \gamma_4\mathrm{INF} + \gamma_5\mathrm{TOP} + \mu \quad (2)$$

Where,

EXP = Export accomplishment
DCP = Domestic Credit to Private Sector
BMS = Broad Money (% of GDP)
FDI = Foreign Direct Investment Net Inflows (% of GDP)
INF = Inflation rate
TOP = Trade Openness
μ = stochastic variable
γ_0 is constant term;

Apriori expectation: (γ_1, $\gamma_{2\&}\gamma_3 > 0$), ($\gamma_{4\&}\gamma_5 < 0$)

RESULTS AND DISCUSSION

Preliminary Analysis

Figure 1 shows the basic graph. EXP has its highest point in 2000. DCP was relatively stable in the period recording the highest in 2009. INF had a sharp increase from 1988 to 1995, but trickled down to the bottom in 2007.

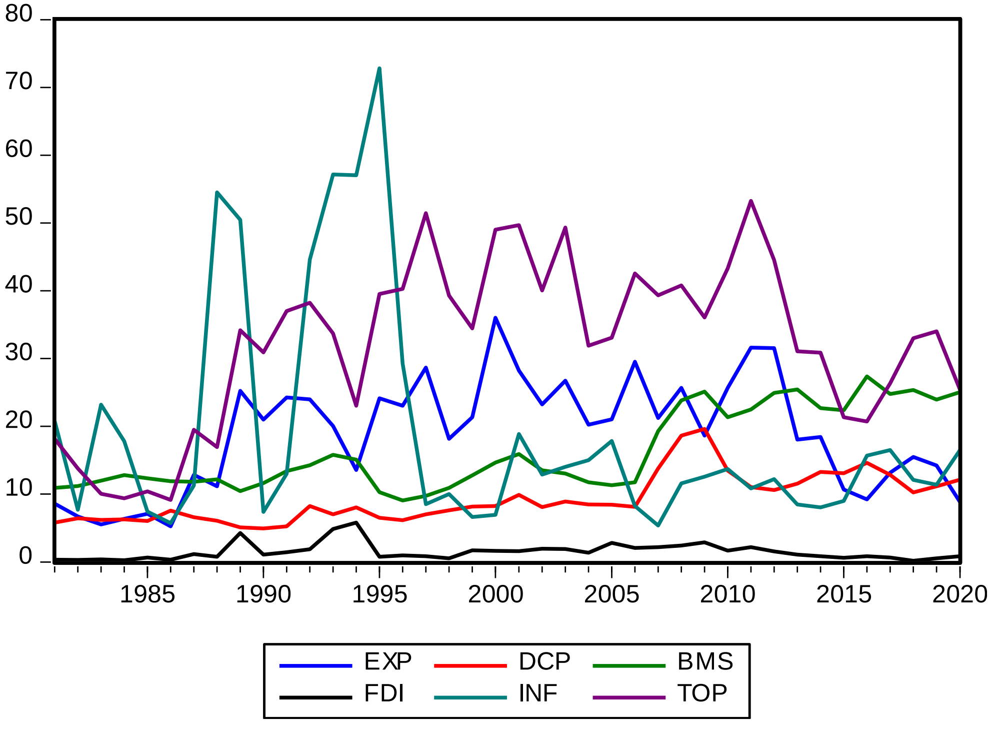

Figure 1: Line and symbol basic graph
Source: Author's compilation 2022

Descriptive Statistics

Table 1 below shows the standard deviation, skewness and JaqueBera statistics of the variables where the P-values revealed that EXP, DCP, BMS and TOPwas normally distributed meanwhile the null hypothesis for FDI and INF variables was rejected.

Table 1: Descriptive Statistics

	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Observations
EXP	18.860	20.160	36.023	5.249	8.193	-0.037	2.072	1.443	40
DCP	9.283	8.201	19.625	4.957	3.540	1.131	3.879	9.816	40
BMS	16.361	13.463	27.378	9.063	5.868	0.574	1.679	5.104	40
FDI	1.507	1.126	5.791	0.195	1.240	1.732	6.070	35.727	40
INF	19.081	12.716	72.835	5.388	16.847	1.816	5.148	29.686	40
TOP	32.128	33.872	53.278	9.136	12.292	-0.331	2.254	1.655	40

Source: Author's compilation 2022

Unit Root Tests

Table 2 present mixture of I(0) and I(1) series.

Table 2: Unit Root Test

Variables	ADF Test Statistics (At Levels)	Critical Values @ 5%	ADF Test Statistics (At 1st Diff.)	Critical Values @ 5%	Integration Order
EXP	-2.4099	-3.5297	-5.6369	-3.5742	I(1)
DCP	-4.1103	-3.5331	-5.7362	-3.5403	I(0)
BMS	-2.8389	-3.5331	-5.0061	-3.5331	I(1)
FDI	-3.8293	-3.5297	-8.0496	-3.5331	I(0)
INF	-4.0509	-3.5331	-5.4748	-3.5331	I(0)
TOP	-2.2151	-3.5297	-4.7769	3.5684	I(1)

Source: Authors compilation 2022

VAR Lag Order Selection Criteria

A critical band of 5% significant level for optimization of the lag length, has variant selection as seen in table 3, hence the need for Lag exclusion test.

Table 3: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-631.929	NA	38089683	34.48264	34.74387	34.57473
1	-543.108	144.0337*	2253239.*	31.62746	33.45607*	32.27213*
2	-507.102	46.71089	2643075.	31.62712	35.02311	32.82436
3	-462.21	43.67833	2589420.	31.14649*	36.10986	32.89631

Indicate lag order at 5% selection criterion.
Source: Authors compilation 2022

Table 4: VAR Lag Exclusion Wald Test

The variations in the lag selection order in table 3 above led to the compilation of lag exclusion wald test to determine the joint probability of the variables.

	EXP	DCP	BMS	FDI	INF	TOP	Joint
Lag 1	5.823141	38.39128	35.56940	25.22974	25.95089	8.839334	147.1535
	[0.4433]	[0.0000]	[0.0000]	[0.0003]	[0.0002]	[0.1828]	[0.0000]
Lag 2	6.501022	6.318111	1.810953	20.97121	9.100580	6.343818	70.68168
	[0.3695]	[0.3885]	[0.9362]	[0.0019]	[0.1680]	[0.3858]	[0.0005]

df	6	6	6	6	6	6	36

The joint probability of 0.0005 (at 5% level) is significant at lag 2 and hence the selection of lag 2 for the variables.
Source: Authors compilation 2022

Stability Test

The regression coefficient shows no break as seen in the Recursive CUSUM test results in figure 2.

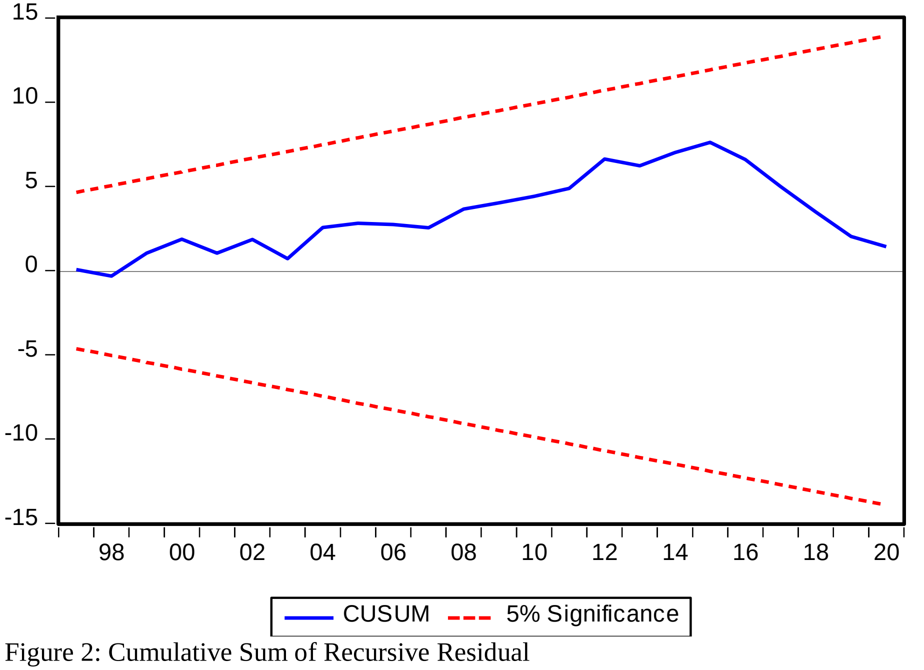

Figure 2: Cumulative Sum of Recursive Residual
Source: Author's compilation 2022

The regression coefficient shows no break as seen in the Recursive CUSUM of squares test results in figure 3

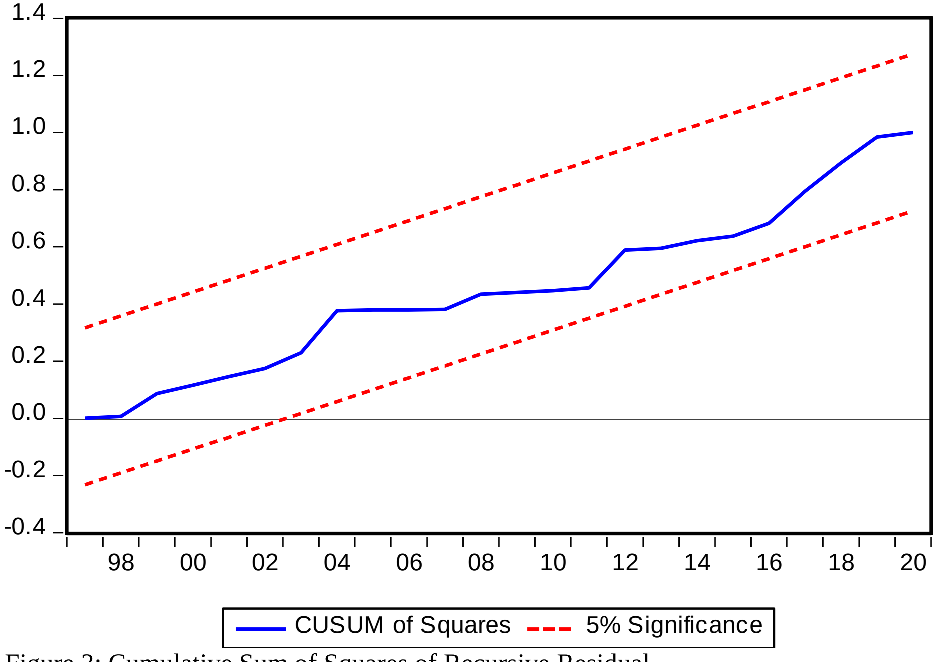

Figure 3: Cumulative Sum of Squares of Recursive Residual
Source: Author's compilation 2022

Bound Test
Table 5 reveals that the F-statistic of 5.178747 is above both the lower and upper critical bounds of 2.39 and 3.38 at 5% significant level, implying rejection of the null hypothesis and establishing a long-run relationship among the variables for the period (Pesaran, Shin, & Smith, 2001).

Table 5: ARDL Bound Test(Co-integration Analysis)

Export Accomplishment

F-statistic: 5.178747; K = 5

Dependent variable

F-statistic **Bounds level**	**Lower bound I(0)**	**Upper bound I(1)**
10% critical bounds value	2.08	3.00
5% critical bounds value	2.39	3.38
2.5% critical bounds value	2.70	3.73
1% critical bounds value	3.06	4.15

Source: Author's compilation 2022

Table 6: ARDL Error Correction Model (ECM) (1, 0, 2, 2, 2, 1)
The result of ECM presented in Table 6 is statistically significant and negative. The coefficient of adjustment is 0.93 that is 93% recovery after disequilibrium within a year revealing that the rate of convergence towards the balance condition is very satisfying.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BMS)	0.198222	0.175323	1.130613	0.2694
D(BMS(-1))	0.409507	0.163218	2.508966	0.0193
D(FDI)	0.283132	0.309909	0.913596	0.3700
D(FDI(-1))	-0.5903	0.314219	-1.878624	0.0725
D(INF)	-0.072056	0.025525	-2.822935	0.0094
D(INF(-1))	0.095476	0.028816	3.313261	0.0029
D(TOP)	0.680792	0.040229	16.92275	0.0000
ECM(-1)*	-0.933311	0.138647	-6.73157	0.0000

Source: Author's compilation 2022

Long Run Analysis
Table 7 displays the long run impact of EXP. It showed that DCP reduces the impact of EXP in Nigeria. The coefficient of DCP is negative and statistically significant, which

implies one percentage increase in DCP decreases EXP by 0.71 percent and percentage decrease in DCP increases EXP in Nigeria. The coefficients of INF also showed a significantly negative relationship with EXP implying that one percent increase in inflation rate, decreases export by 0.15 percent. The eigenvalue of BMS, FDI and TOP is positive implying that one percent increase in money supply, foreign direct investment and trade openness, increases export by 0.00, 2.03 and 0.57 percent respectively, but while FDI and TOP were statistically significant, BMS was not.

Table 7: Long Run Coefficient of ARDL (1, 0, 2, 2, 2, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCP	-0.712574	0.256159	-2.781766	0.0104
BMS	0.001083	0.128984	0.008395	0.9934
FDI	2.02843	0.759156	2.671954	0.0133
INF	-0.152427	0.053278	-2.860974	0.0086
TOP	0.568576	0.045532	12.48754	0.0000
C	6.941195	2.31333	3.00052	0.0062

Source: Author's compilation 2022

Discussion of Findings

The results of each of the variables reviewed in this work are at variant. Whereas a negative interaction existed between domestic credit to private sector and inflation on export, a contrary nexus was obtained for money supply, foreign direct investment and trade openness. This does not conform with the export-led growth hypothesis predictions implying that there are other factors that influences export in Nigeria that are not finance related such as the internal processes of the banks, environmental factors, natural resource endowment, technological improvement, human resources, international outlook, investment classification and many more. Harmonization of the export policies with monetary and fiscal policies in Nigeria for the attraction of export-focused financing should be encouraged, thereby leading to expansion and diversification of exportable products for inclusive growth of the nation. This corroborate the findings of Odeniran&Udeaja (2010), Adekunle, Salami &Adedipe (2013) Samargandi, Fidmuc& Ghosh (2015), Wang, Li, Abdou&Ntim 2015 Iheanacho (2016) but contrary to that of Sinwaka, Munthali, Kabango&Chiumia (2012) and Puatwoe&Piabou 2017. A close alignment of finance is imperative for export enhancement, growth inclusiveness and sustainable economic growth.

CONCLUSION AND POLICY RECOMMENDATIONS

This study analyzed the impact of financial deepening on export accomplishment in Nigeria from 1981 to 2020. The results revealed, a long run negative influence of financial deepening on export accomplishment, there are other factors that influences export in Nigeria that are not finance related such as the internal processes of the banks, environmental factors, natural resource endowment, technological improvement, human resources, international outlook, investment classification and many more which should be taken into consideration by policy makers in order to boost exports. A positive relationship was established between broad money supply, foreign direct investment and trade openness on export accomplishment. While foreign direct investment and trade openness was significant to export, broad money supply was not. Inflation as a variable had a negative but significant relationship. It is recommended that the combination of monetary and fiscal policies in Nigeria should encourage stable and sustainable deepening of the financial system to thrive export accomplishment for productivity gain and export diversification that would lead to economic prosperity. Suitable financial reforms should be engaged in the financial sector in with measures that will strengthen the quality of the financial sector in a conductive economic and political environment.

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