Financial Development, Exchange Rate Stability and Trade in Nigeria

Ahmad Ahmad

Central Bank of Nigeria

ABSTRACT

This study examines the impact of financial development, exchange rate stability, economic progress, FDI, and population on trade in Nigeria using the ARDL approach of estimation from the period 1980 to 2022. The outcome of the unit root test indicates that all the variables are stationary at one percent level of significance. Similarly, the bound test also confirms the long-run association among the model variables. The result of the short-run estimates reveals that financial development; exchange rate stability, economic progress and FDI increased the level of trade in Nigeria. However, population is not a determinant factor of trade in the nation. The long-run result shows that financial development, exchange rate stability, economic progress, FDI, and population significantly increase the level of trade performance in the country. Hence, the study suggests financial development policy reform through monetary policy instruments that will enhance the level of credit allocation and maintain the stability of exchange for effective trade and economic growth in the country. Nonetheless, the limitation of the study may consist of the incorporation of other important variables like energy use, industrial growth, and pollution. Accordingly, future studies should consider these factors to improve the policy analysis and recommendations.

Keywords: Financial development, exchange rate stability, FDI, trade, Nigeria, ARDL

INTRODUCTION

In recent times, global institutions such as the World Trade Organization have focused more on accelerating the level of trade among nations of the world (WTO, 2021). It is estimated that the volume of trade has increased by almost 25% from 2020 to 2023 (UNCTAD, 2023). Similarly, the world trade value has reached $32 trillion in 2023, despite the effects of the COVID-19 pandemic. The trade volume also grows by 1.7% in 2023 and is projected to rise to 3.2% in 2024. Moreover, the level of service trade has increased by $50 billion and rose to %1.6 trillion after the global pandemic. According to the World Bank, (2023), the facilitation of global trade has made tremendous progress in the level of investment, employment generation, and revenues among nations. Several studies have illustrated that financial development and exchange rate stability are among the essential factors influencing trade performance. Khaskheli, Jiang, Raza, Khan, and Qureshi, (2021) stressed that financial development is an essential factor in promoting trade among the world's nations. Hence, strategies on financial development would encourage trade and generate more revenue for the governments. However, Kang and Dagli (2018) emphasized that stability in the exchange rate of any nation increases the volume and value of trade.

Trade performance in developing economies, more specifically African countries has encountered a slow growth rate tune of 14% in 2022 (UNCTAD, 2023). It is stressed that over 34% of African households are poor and living under the poverty line of $1.9 a day (CBN, 2022). Additionally, the untapped estimated level of export potentials of the continent reached $21.9 billion which is the same as 43% of the total African nation's exports (UNCTAD, 2023). In Nigeria, the level of trade performance is not encouraging economic progress (WTO, 2021). The worth value of trade for the country concerning the United States and

China which are the largest trade partners continues to decrease compared to previous years. For instance, the trade value amounted to \$1,316.4, \$445.9, \$-1,423.6, and \$-2.565.7 from 2020 to 2022 indicating a declining trend (UNCTAD, 2023). Similarly, the status of the nation's trade balance was negative in 2022. This implies an estimated trade deficit of \$9.06 billion from 2022 to 2023 (UNCTAD, 2023). it is acknowledged that financial development in the country has been on a positive track for the last decade (WDI, 2022). Nonetheless, exchange rate instability has occurred in the country for the past several decades. For instance, the naira against the US dollar was 1 Naira in 1980 and above N1000 in 2023 which indicated high instability (CBN, 2022). This instability in the exchange rate and issues with financial resources might be cause agents for low trade volume in the country. Therefore, the study examines the influence of financial development exchange rate stability, and trade in Nigeria. This study is different from other studies in the past with respect the measurement used on financial development and exchange rate stability which have not been investigate particularly in Nigeria.

REVIEW OF LITERATURE

Relationships among financial development, exchange rate stability, and trade have been discussed in the literature. For example, Zhang et al., (2015) investigate the effect of financial development on trade performance in China, using dynamic panel estimation. The result of the study reveals a positive link among financial development and trade performance in the country. Ahmad, Nazir, and Nafees (2018) examine the influence of the financial system on trade level in Pakistan. The study outcome shows that the financial system accelerates the level of trade. Haider and Adil, (2019) studied the impact of financial development, and energy resources on trade in India, using the ARDL approach from 1971 to 2016. The study finds that financial development promotes energy use and consequently accelerates the level of trade in the nation. Similarly, Jiang, Khan, Zaman, and Iqbal (2021) investigate the influence of financial development performance on trade in Central and South America. The result shows that financial development increases the level of trade. Ho et al., (2021) studied the influence of financial development on trade in ASEAN economies from 1995 to 2019. The outcome of the study shows that financial development increases the level of trade. Khaskheli et al. (2021) utilize the GMM technique of estimation to examine the influence of financial development on trade in 136 nations of the world from 1995 to 2017. The study's outcome reveals that financial development strongly influences trade performance in these nations. Avom, Kamguia, Ngameni, and Njangang (2021) analyzed the impact of financial progress on trade volatility in 45 African economies from 1997 to 2017. The finding of the study reveals that financial progress promotes the level of trade. However, Pacheco and Fernandes, (2017) examine the influence of exchange rate stability on trade in Brazil. The result shows a positive influence of exchange rate stability on trade in the country. Bahmani-Oskooee and Gelan, (2018) emphasized that exchange rate instability reduces the level of trade volume and value. Davide et al., (2018) analyze the effect of exchange rate stability on trade level in emerging countries from 1970 to 2011. The findings of the study reveals that exchange rate stability increase the level of trade performance in the nations. Dogru, Isik, and Sirakaya-Turk, (2019) examine the influence of exchange rate changes on trade in developing nations from 1970 to 2011. The study finds that currency depreciation decreases the level of trade in these countries. Alola, Cop, and Adewale Alola (2019) investigate the effect of exchange rate variation on trade in Turkey. The outcome shows that exchange rate instability reduces trade performance in Turkey. Dogru et al. (2019) used the ARDL method to analyze the effect of exchange rate variation on trade in Turkey. The result reveals that exchange rate variation decreases the level of trade volume.

From the literature reviewed, it is observed that relationships occur among financial development, exchange rate stability, and trade. However, the measurement of financial development and exchange rate instability were not investigated especially in Nigeria. Therefore, the study examines the influence of financial development, and exchange rate stability on trade in Nigeria.

METHODOLOGY

This part illustrates the data, the approach of the model estimation, and the specification of the empirical model of the study. The study employed annual time series data for trade (sum of exports and imports), financial development (domestic credit % of GDP), exchange rate stability (variation in value of the local currency compared to previous time against the US dollar), economic progress (annual GDP growth), population (annual growth rate of the population) and foreign direct investment (FDI inflow). A World Bank database 2022 server as the source of data used and Autoregressive distributed lag model (ARDL) is utilized as the technique of model estimation.

Theoretical framework

Rebelo (1991) illustrated his AK model on endogenous growth theory. He further explain that human capital and other components of social infrastructure including financial resources, energy and factors influencing the level of growth. In this view, financial resources, reform policies (measures of financial and exchange rate stability) will promote the level of technology and consequently increases trade as well as the level of economic growth in a given economy. Hence, AK growth model proposed by (Adu et al., 2013; Inoue & Hamori, 2016) serves as the theoretical framework of this study and the empirical model relies on this theoretical background.

Model specification

The study used a modified model by Salahuddin and Gow, (2015) in estimating the influence of financial development, exchange rate stability, economic progress, and population on trade in Nigeria. Hence, equation 1 shows the econometric model, and equations 2 and 3 reveal the ARDL estimation model.

$$TRD = f (FD, ES, EP, FDI, POP) \qquad (1)$$

In equation 1, FD, ES, EP, TD, FDI, and POP represent trade, financial development, exchange rate stability, economic progress, population, and FDI, respectively. The (ARDL) model is expressed in equations 2 and 3:

$$\Delta LTRD = \beta_0 + \sum_{j=1}^{n} \beta_1 LTRD_{2t-j} + \sum_{j=0}^{n} \beta_2 LFD_{t-j} + \sum_{j=0}^{n} \beta_3 LES_{t-j} + \sum_{j=0}^{n} \beta_4 LEP_{t-j} +$$
$$\sum_{j=0}^{n} \beta_5 LFDI_{t-j} + \sum_{j=0}^{n} \beta_6 LPOP_{t-j} + \alpha_1 LFD_t + \alpha_2 LES_t + \alpha_3 LEP_t + \alpha_4 LFDI_t + \alpha_5 LPOP_t + \varepsilon_t \ (2)$$

$$LTRD = \alpha_0 + \alpha_1 LTRD_t + \alpha_2 LFD_t + \alpha_3 LES_t + \alpha_4 LEP_t + \alpha_5 LFDI_t + \alpha_6 LPOP_t + \varepsilon_t \quad (3)$$

In the above equations, illustrates the error term, t shows the time trend and indicates the first difference operator.

RESULT

This part explains the outcome of the estimated model of the study. Firstly, the result of the stationarity test indicates that the variables are stationary in which some of the variables are found stationary in the level while others in the first difference as indicated in table 1. Therefore, the variables are valid to use the ARDL technique of estimation. The result of the bound-test also validates the long-run relationship among the variables as shown by the value of F-statistics 7.67201 and the critical values of I(0) 3.74 and I(1) 5.06 at one percent level of significance.

Table 1 Unit root test outcome

Variables	ADF(level)		first difference	
LTRD	-4.969111*	0	–	
LFD	-5.726869*	0	–	
LES	-3.19472	-0.2701	-2.801721*	0
LGP	-6.80197	-0.9371	-5.209163*	-0.0002
LFDI	-3.5028 51	-0.2061	-3.150371*	-0.0006
LPOP	-2.80915	-0.7018	-2.709261*	0

Notes: * shows statistical significance at a one percent level

Table 2 illustrates the short and long-run estimated outcomes. The short-run analysis reveals that financial development, exchange rate stability, economic progress, and FDI are positively significant in influencing trade in Nigeria. However, population level is not a determinant factor of trade in the nation. The result further indicates that a one percent change in financial development, economic progress, and FDI resulted in to increase in trade by 1.2, 2.7, 1.2, and 0.9 percent. The speed of adjustment concerning long-run equilibrium is 91.13 percent, and it is significant at one percent.

Moreover, the long-run estimates show that financial development, stability in the exchange rate, economic progress, FDI, and population accelerate the level of trade in Nigeria. This means that a percent rise in financial development, exchange rate stability, economic progress, FDI, and population increases the level of trade by 2.5, 2.9, and 1.7. 0.2, and 2.9 respectively. The result shows that financial development and exchange rate stability are relative and associated with the rise in trade level by 2.5 and 2.9 percent respectively. This outcome is similar to the result (Majeed, 2016). In this regard, the result indicated that financial development and exchange rate stability are significant and positive in influencing the level of trade in Nigeria. It is clearly shows that level of trade annually increased by 1.2 and 2.7 percent due the influence of financial development and exchange rate stability in the country. Therefore, these percentage increases is highly significant and will promote the capacity of trade level in the nation. Hence, based on this analysis it is recommended on the continuity of the financial and exchange policies to further strength the level of trade in Nigeria. It is also recommended that inbuilt stabilizers should be initiated in the event of any speculation and shocks that may result to negative consequences. These will help in the promotion of trade facilitation and more revenue generation in the country.

Table 2: Model estimated result

S.R Regressors	Coefficients	SD Errors	t-Statistics	Prob
ΔLFD	1.2096421*	0.480927	-4.65302	0.0002
ΔLES	2.701752*	0.729581	-3.69016	0
ΔLGP	1.208531*	1.801762	-0.70532	0
ΔLFDI	0.960478*	2.286974	-0.6953	0.003
ΔLPOP	0.301262	1.387192	-0.49725	0.2026
ECT(-1)	-0.913256*	0.609531	-4.81653	0.0001
L.R Regressors				
LFD	2.507251*	0.685321	0.074931	0
LES	2.907572*	0.470375	-0.59073	0
LGP	1.702691**	1.69431	1.517362	0.0033

LFDI	0.28105**	1.78472	1.49321	0.0021
LPOP	2.901832*	1.824013	1.384613	0
C	-36.04862**	12.50912	-1.69281	0.0041

*Notes: * and ** illustrate statistically significant at one and five percent levels*

Table 3 Post Estimation tests

Test Type	F-statistics	Probability	Result
Breusch-Pagan Test.	1.490262	0.2801	No Heteroskedasticity
Breusch-Godfrey Test	0.59017	0.3109	No Serial Correlation
Jarque-Bera	1.782	0.2014	Normally Distributed

Table 3 shows that the post-estimation tests indicate no Heteroskedasticity, or serial correlation, and the errors are normally distributed. This result illustrated that the model is reliable and will be good for nay policy recommendation and analysis.

CONCLUSION

This study examines the impact of financial development, exchange rate stability, economic progress, FDI, and population on trade in Nigeria using the ARDL approach of estimation from the period 1980 to 2022. The outcome of the unit root test indicates that all the variables are stationary at one percent level of significance. Similarly, the bound test also confirms the long-run association among the model variables. The result of the short-run estimates reveals that financial development, stability in the exchange rate, economic progress and FDI positively increase the level of trade in Nigeria. However, population is not a determinant factor of trade in the nation. The long-run result shows that financial development, exchange rate stability, economic progress, FDI, and population significantly increase the level of trade performance in the country. Hence, the study suggests financial development policy reform through monetary policy instruments that will enhance the level of credit allocation and maintain the stability of exchange for effective trade and economic growth in the country. The recommended the continuity of the financial and exchange policies to further strength the level of trade in Nigeria. It is also recommended that inbuilt stabilizers should be initiated in the event of any speculation and shocks that may result to negative consequences. These will help in the promotion of trade facilitation and more revenue generation in the country. Nonetheless, the limitation of the study may consist of the incorporation of other important variables like energy use, industrial growth, and pollution. Accordingly, future studies should consider these factors to improve the policy analysis and recommendations.

REFERENCE

1. Adu, G., Marbuah, G., & Mensah, J. T. (2013). Financial development and economic growth in Ghana: Does the measure of financial development matter? *Review of Development Finance*, *3*,192–203. https://doi.org/10.1016/j.rdf.2013.11.001
2. Ahmad, N., Nazir, M. S., & Nafees, B. (2018). Impact of financial development and credit information sharing on the use of trade credit: Empirical evidence from Pakistan. *Cogent Economics and Finance*, *6*(1), 1–17. https://doi.org/10.1080/23322039.2018.1483466
3. Alola, U. V., Cop, S., & Adewale Alola, A. (2019). The spillover effects of tourism receipts, political risk, real exchange rate, and trade indicators in Turkey. *International Journal of Tourism Research*, *21* (6), 813–823. https://doi.org/10.1002/jtr.2307
4. Avom, D., Kamguia, B., Ngameni, J. P., & Njangang, H. (2021). How does terms of trade volatility affect macroeconomic volatility? The roles of financial development and institutions. *International Economics*

, *168*(September), 98–114. https:// doi.org/ 10.1016/ j. inteco. 2021 .08.004

5. Bahmani-Oskooee, M., & Gelan, A. (2018). Exchange-rate volatility and international trade performance: Evidence from 12 African countries. *Economic Analysis and Policy*, *58*, 14–21. https://doi.org/10.1016/j.eap.2017.12.005

6. CBN. (2022). *Annual Report*.

7. Davide, R., Cristina, T., & Enrico, V. (2018). *Current Account and Real Exchange Rate changes: the Impact of Trade Openness*. *2*(1). https://www.chemengonline.com/solids-drying-basics-and-applications/?printmode=1

8. Dogru, T., Isik, C., & Sirakaya-Turk, E. (2019). The balance of trade and exchange rates: Theory and contemporary evidence from tourism. *Tourism Management*, *74*(August 2018), 12–23. https://doi.org/10.1016/j.tourman.2019.01.014

9. Haider, S., & Adil, M. H. (2019). Does financial development and trade openness enhance industrial energy consumption? A sustainable developmental perspective. *Management of Environmental Quality: An International Journal*, *30*(6), 1297–1313. https:// doi.org/ 10. 1108/MEQ-03-2019-0060

10. Ho, C. H. P., Pham, N. N. T., & Nguyen, K. T. (2021). Economic Growth, Financial Development, and Trade Openness of Leading Countries in ASEAN. *Journal of Asian Finance, Economics and Business*, *8*(3), 191–199. https:// doi.org/ 10.13106/ jafeb .2021. vol8.no3.0191

11. Inoue, T., & Hamori, S. (2016). Financial access and economic growth: Evidence from sub-saharan Africa. *Emerging Markets Finance and Trade*, *52*(3), 743–753. https:// doi.org/ 10. 1080/1540496X.2016.1116282

12. Jiang, Y., Khan, M. I., Zaman, S. I., & Iqbal, A. (2021). Financial development and trade in services: Perspective from emerging markets of Asia, South and Central America and Africa. *International Journal of Finance and Economics*, *26*(3), 3306–3320. https:// doi.org/ 10. 1002/ijfe.1963

13. Kang, J. W., & Dagli, S. (2018). International trade and exchange rates. *Journal of Applied Economics* , *21*(1), 84–105. https://doi.org/10.1080/15140326.2018.1526878

14. Khaskheli, A., Jiang, Y., Raza, S. A., Khan, K. A., & Qureshi, M. A. (2021). Financial development , international trade , and environmental degradation : a nonlinear threshold model based on panel smooth transition regression. *Environmental Science and Pollution Research*, *28*(21), 26449–26460.

15. Majeed, M. T. (2016). Economic growth, inequality and trade in developing countries. *International Journal of Development Issues*, *15*(3), 240–253. https:// doi.org/ 10.1108/ 095 74090910954864

16. Pacheco, R. R., & Fernandes, E. (2017). International air passenger traffic, trade openness and exchange rate in Brazil: A Granger causality test. *Transportation Research Part A: Policy and Practice*, *101*, 22–29. https://doi.org/10.1016/j.tra.2017.04.026

17. Rebelo Sergio. (1991). Long-run policy analysis and long-run growth. *Journal of Political Economy*, *99*(3), 500–521.

18. Salahuddin & Gow. (2015). The effects of internet usage , financial development and trade openness on economic growth in south Africa : A time series analysis. *Telematics and Informatics*, *33*(4), 1141–1154. https://doi.org/10.1016/j.tele.2015.11.006

19. UNCTAD. (2023). *World Investment Report*.

20. WDI. (2022). *World development indicator, database*.

21. World Bank. (2023). *Annual Report*.

22. WTO. (2021). *Annual Report*.

23. Zhang, C., Zhu, Y., & Lu, Z. (2015). Trade openness, financial openness, and financial development in China. *Journal of International Money and Finance*, *59*, 287–309. https:// doi.org/10.1016/j.jimonfin.2015.07.010