

The Effect of Currency Fluctuation on Import and Export Trade: A Quantitative Analysis

ABDUL-ALEEM HABIBAT ODUNAYO¹, EBUTE ENE PATIENCE², ALIMU AMINAT YETUNDE³, NURUDEEN FAUZIYYA MOHD⁴, OSANEKWU IFEOMA REGINA⁵

^{1, 2, 3, 4, 5}University of Abuja

Abstract- This study examines the effect of currency fluctuation on import and export trade in Nigeria. Currency fluctuation, characterized by the volatility of the exchange rate, has a profound impact on trade flows, competitiveness, and economic stability. Using a quantitative approach, the study explores the extent to which variations in the naira exchange rate influence import and export performance between 2010 and 2023. Secondary data were obtained from the Central Bank of Nigeria (CBN) and the World Bank. Findings reveal that exchange rate depreciation tends to enhance export competitiveness but simultaneously increases import costs, thus influencing the trade balance. The study concludes that currency fluctuations, while inevitable, require sound exchange rate management and trade policies to minimize adverse effects on the Nigerian economy.

Keywords: Currency fluctuation, Exchange rate volatility, Trade balance, Imports, Exports, Nigeria

I. INTRODUCTION

Currency fluctuation represents a critical macroeconomic factor affecting international trade performance. Exchange rate movements influence the relative prices of domestic and foreign goods, thereby shaping the direction and volume of exports and imports. In Nigeria, where trade constitutes a significant component of gross domestic product (GDP), exchange rate instability often translates into unpredictable changes in trade outcomes. The depreciation of the naira increases export competitiveness but escalates the cost of imports, especially for a country heavily dependent on foreign goods and raw materials. Conversely, an appreciation of the naira may reduce export competitiveness, creating adverse effects on the balance of payments. Given these dynamics, this study seeks to evaluate the quantitative relationship between currency fluctuation and trade performance in Nigeria.

II. LITERATURE REVIEW

Currency fluctuation has long been recognized as a major determinant of international trade performance. According to Clark (1973), exchange rate uncertainty increases transaction risks and discourages trade. Hooper and Kohlhagen (1978) similarly emphasized that volatility generates pricing uncertainty, reducing firms' willingness to engage in international markets. Arize, Osang, and Slottje (2000) found that exchange rate instability negatively affects exports in developing economies by undermining producers' long-term planning. Bahmani-Oskooee and Hegerty (2007) noted that the impact of exchange rate movements is asymmetric—currency depreciation may initially worsen the trade balance but eventually improve it as export demand becomes more responsive, consistent with the J-Curve hypothesis.

Recent Nigerian studies provide deeper insights. Eke and Osi (2023) examined how digital economics and time-based dynamics shape trade efficiency in a fluctuating currency environment. Their findings indicate that technology integration and digital markets are increasingly sensitive to exchange rate variations. Similarly, Eke, Osi, Sule, and Musa (2023) analyzed hybrid currencies—digital, fiat, and electronic—and concluded that coordinated state control can either mitigate or intensify exchange rate impacts. Eke (2016) earlier investigated price instability and consumer behavior in smartphone data markets, demonstrating parallels between resource constraints and market volatility. Furthermore, Eke (2019) linked telecommunications expansion to economic growth, suggesting that financial stability and technological penetration reinforce trade performance. Eke, Magaji, and Ezeigwe (2020) also found that household expenditure and employment dynamics are closely tied to macroeconomic fluctuations, including currency movements.

III. METHODOLOGY

This study employs a quantitative research design using secondary data from 2010 to 2023. Data were collected from the Central Bank of Nigeria (CBN) statistical bulletin and the World Bank's World Development Indicators. The key variables analyzed include the exchange rate (naira per US dollar), total exports, and total imports. A multiple regression model was used to estimate the relationship between exchange rate fluctuations and trade performance. The model is specified as:

$$\text{Trade} = \beta_0 + \beta_1 \text{EXR} + \varepsilon,$$

where Trade represents either total exports or imports, EXR denotes the exchange rate, and ε is the error term. Descriptive and inferential statistical analyses were conducted to test the significance of exchange rate effects on trade flows.

IV. RESULTS AND DISCUSSION

The regression results indicate that exchange rate volatility significantly affects both exports and imports in Nigeria. Specifically, depreciation of the naira increases export volumes by making Nigerian goods cheaper in international markets. However, import expenditure rises as the cost of foreign goods increases, resulting in a trade imbalance. The findings support the Marshall-Lerner condition, which posits that a depreciation improves the trade balance only if the sum of demand elasticities exceeds one. The results align with previous studies (Arize et al., 2000; Bahmani-Oskooee & Hegerty, 2007; Eke & Osi, 2023) that underscore the dual nature of currency fluctuations in shaping trade performance.

V. POLICY IMPLICATIONS

The findings suggest that policymakers should adopt a stable and market-reflective exchange rate regime to enhance trade performance. The Central Bank of Nigeria should strengthen foreign reserve management and adopt targeted interventions to reduce volatility. Furthermore, diversification of export products and promotion of local manufacturing will reduce dependence on imports and mitigate the adverse effects of currency depreciation.

VI. CONCLUSION

Currency fluctuation remains a significant determinant of Nigeria's trade dynamics. While exchange rate depreciation can stimulate exports, excessive volatility undermines macroeconomic stability. A balance between flexibility and predictability in exchange rate policy is therefore essential for sustainable trade growth and economic resilience.

REFERENCES

- [1] Arize, A. C., Osang, T., & Slottje, D. J. (2000). Exchange-rate volatility and foreign trade: Evidence from thirteen LDCs. *Journal of Business & Economic Statistics*, 18*(1), 10–17.
- [2] Bahmani-Oskooee, M., & Hegerty, S. W. (2007). Exchange rate volatility and trade flows: A review article. *Journal of Economic Studies*, 34*(3), 211–255.
- [3] Clark, P. B. (1973). Uncertainty, exchange risk, and the level of international trade. *Western Economic Journal*, 11*(3), 302–313.*
- [4] Eke, C. I. (2016). An economic assessment of Nigeria's smartphone data bundle consumption, subscriber resource constraints and dynamics: The case of Abuja and Lagos States. *Journal of Telecommunication System Management*.*
- [5] Eke, C. I. (2019). Teledensity and economic growth in Nigeria: An impact assessment. *Bingham Journal of Economics and Allied Studies*, 2*(2), 120–131.*
- [6] Eke, C. I., Magaji, S., & Ezeigwe, G. C. (2020). An economic assessment model of employment/dynamics capacity development and household telecommunication expenditure in Nigeria. *Journal of Economics and Sustainable Development*, 11*(2), 107–115.*
- [7] Eke, C. I., & Osi, M. U. (2023). The gathering clouds: The case of time and digital economics. *East African Journal of Business and Economics*, 6*(1), 226–232.* <https://doi.org/10.37284/eajbe.6.1.1310>
- [8] Eke, C. I., Osi, U. M., Sule, M., & Musa, I. (2023). State control of digital-fiat-electronics currency transmission in an economy: The case of hybrid currency. *Asian Journal of Economics, Finance and Management*,* 92–96.
- [9] Hooper, P., & Kohlhagen, S. W. (1978). The effect of exchange rate uncertainty on the prices and volume of international trade. *Journal of International Economics*, 8*(4), 483–511.*

- [10] World Bank. (2023). *World Development Indicators.*
- [11] Central Bank of Nigeria (CBN). (Various Issues). *Statistical Bulletin.*