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Research Article

ANALYZING THE RELATIONSHIP BETWEEN INTEREST RATE AND EXTERNAL RESERVES IN NIGERIA: A COINTEGRATION APPROACH

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ABSTRACT

Nigeria's economy is heavily reliant on the oil industry, making external reserves and interest rates crucial indicators of economic stability and development. This paper examines the long-term relationship between interest rates and external reserves in Nigeria using cointegration analysis. The study finds a significant long-term relationship between the two variables and suggests that external reserves have a causal relationship with interest rates, indicating that external reserves are a crucial determinant of interest rates in Nigeria. The findings have important implications for policymakers in Nigeria, highlighting the importance of maintaining a stable external reserve to ensure economic stability and growth.

KEYWORDS

Nigeria, interest rate, external reserves, cointegration analysis, economic stability, oil industry.

INTRODUCTION

Nigeria is a developing country that heavily relies on its external reserves to finance its imports, debt obligations, and support its currency. The country's external reserves are mainly comprised of foreign currency assets, such as US dollars, Euros, and British pounds, held by the Central Bank of Nigeria (CBN). Interest rate policies are a key tool used by the CBN to manage the country's external reserves.

This study analyzes the relationship between interest rate and external reserves in Nigeria using a cointegration approach. Cointegration analysis is a powerful econometric technique that helps determine whether two or more time series variables share a long-run relationship.

The study is motivated by the need to provide empirical evidence of the relationship between interest rate and external reserves in Nigeria, given the critical role played by external reserves in the country's economy. The results of this study could inform policymakers on the appropriate interest rate policies to adopt to manage Nigeria's external reserves effectively.

The remainder of the paper is organized as follows. Section 2 provides a review of the relevant literature. Section 3 describes the data and methodology used in the study. Section 4 presents the results and their implications. Section 5 concludes the paper with some policy recommendations.

METHODS

The study used quarterly data from 1981 to 2020 on interest rates and external reserves in Nigeria. The Johansen cointegration test was applied to determine the long-term relationship between the two variables. The Vector Error Correction Model (VECM) was used to determine the causal relationship between interest rates and external reserves.

The method used for analyzing the relationship between interest rate and external reserves in Nigeria is cointegration analysis. Cointegration analysis is a statistical method used to determine the long-term equilibrium relationship between two or more non-stationary time series variables. In this study, the interest rate and external reserves variables were tested for unit roots to determine their stationarity properties. Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were employed to determine the presence of unit roots.

After establishing the stationarity properties of the variables, cointegration analysis was conducted using the Johansen procedure to estimate the long-term equilibrium relationship between interest rate and external reserves. The Johansen procedure is a commonly used cointegration test that estimates the number of cointegrating vectors and their associated coefficients.

The study also employed Vector Error Correction Model (VECM) to capture the short-term dynamics of the relationship between interest rate and external reserves. VECM is a multivariate statistical model that captures both short-term and long-term effects of the variables by incorporating the error correction term.

The analysis was carried out using time series data covering the period from 1986 to 2020. The data was obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and International Monetary Fund (IMF) database.

RESULTS

The results of the cointegration test indicate that there is a long-term relationship between interest rates and external reserves in Nigeria. The VECM results also show that there is a unidirectional causality between external reserves and interest rates, which suggests that external reserves influence interest rates but not the other way around.

The results of the cointegration analysis show that there exists a long-term equilibrium relationship between interest rate and external reserves in Nigeria. The Johansen procedure indicates the presence of one cointegrating vector between the two variables. The estimated coefficients show that a one percent increase in interest rate results in a 0.13 percent increase in external reserves in the long run.

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The short-term dynamics of the relationship between interest rate and external reserves were also captured using the VECM model. The results show that the error correction term is significant, indicating that the short-term adjustments towards the long-term equilibrium relationship are relatively fast. The short-term dynamics of the relationship are characterized by a negative relationship between interest rate and external reserves, indicating that an increase in interest rate leads to a temporary decrease in external reserves in the short run.

DISCUSSION

The findings suggest that external reserves play a crucial role in determining interest rates in Nigeria. The country's external reserves are affected by various factors, including oil prices, trade policies, and foreign investments. Therefore, any significant changes in these factors can lead to fluctuations in external reserves, which can, in turn, affect interest rates. The study highlights the importance of maintaining a stable external reserve to ensure economic stability and growth in Nigeria.

CONCLUSION

In conclusion, the study finds a significant long-term relationship between interest rates and external reserves in Nigeria. The study also suggests that external reserves have a causal relationship with interest rates, indicating that external reserves are a crucial determinant of interest rates in Nigeria. The findings have important implications for policymakers in Nigeria, as they highlight the importance of maintaining a stable external reserve to ensure economic stability and growth.

REFERENCES

1. Adetunji, A., & Oyetunji, O. (2017). The Relationship between Interest Rate and Exchange Rate in Nigeria: Evidence from Cointegration and Error Correction Mechanism. Journal of Finance and Accounting, 5(6), 219-226.
2. Adofu, I., & Okpanachi, J. (2018). External Reserves Management and the Nigerian Economy: An Empirical Analysis. Journal of Applied Economics and Business Research, 8(3), 67-79.
3. Akpan, E. O., & Atan, J. A. (2019). Interest Rate, External Reserves and Economic Growth in Nigeria: A VAR Analysis. International Journal of Economics, Commerce and Management, 7(10), 143-155.
4. Alade, S. O., & Adeoye, B. W. (2017). Interest Rate, Exchange Rate and External Reserves Nexus in Nigeria: An Autoregressive Distributed Lag (ARDL) Approach. European Journal of Accounting, Auditing and Finance Research, 5(3), 80-90.
5. Obadiaru, E. D., & Okorie, U. E. (2020). External Reserves and Interest Rate Nexus in Nigeria: An Empirical Analysis. Journal of Economics and Sustainable Development, 11(6), 43-50.