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The Effects of Internal and External Factors on the Interbank Interest Rate in Iran

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Abstract

The main objective of this study is to examine the effects of internal and external factors on the interbank interest rate in Iran. The study employs the Fully Modified Ordinary Least Squares (FM-OLS) method using data from public and private banks, the Central Bank of Iran, and the Statistical Center of Iran over the period 1991–2022. Results indicate that internal variables such as *credit supply development* and *bank size* significantly enhance the interbank rate's impact on money market performance, with coefficients of 0.99 and 0.95, respectively. Similarly, external factors like *exchange rate* and *inflation rate* exhibit strong positive effects with coefficients of 0.99 and 0.94. Other variables, including *loan-to-deposit ratio*, *interest rate*, and *liquidity growth*, also show significant influences (around 0.91). The adjusted R^2 exceeding 0.85 confirms the model's reliability and robustness.

Keywords: Internal Banking Factors, External Banking Factors, Interest Rate, Interbank Rate, FM,OLS.

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Introduction

The interbank market plays a vital role in implementing monetary policy and stabilizing short-term liquidity in the banking system. Efficient interbank operations reduce reliance on the Central Bank and enhance monetary control. This research seeks to analyze both micro-banking (internal) and macroeconomic (external) factors affecting Iran's interbank interest rate. The study considers five internal variables—reserve requirement ratio, credit provision development, bank capital, loan-to-deposit ratio, and bank size—and six external variables—exchange rate, inflation rate, economic growth, liquidity growth, interest rate, and stock market index.

Methodology

This study is applied in nature and based on documentary and statistical data. Annual data covering 1991–2022 were obtained from the Central Bank, commercial banks, and the Statistical Center of Iran. The FM-OLS method was applied to estimate long-term relationships among variables. Diagnostic tests such as unit root, multicollinearity, and Kao cointegration tests were conducted to ensure model validity. Data analysis was performed using *EViews 10* software under a panel data framework.

Findings

The empirical results show significant long-run relationships between the interbank interest rate and both internal and external variables. Among internal factors, *credit provision development* (0.99) and *bank size* (0.95) have the strongest positive impact. Among external factors, *exchange rate* (0.99) and *inflation rate* (0.94) exert the most substantial effects. Other variables, including *loan-to-deposit ratio, interest rate*, and *liquidity growth* (each around 0.91), also exhibit notable associations. The model's adjusted R^2 values above 0.85 indicate a high degree of reliability and explanatory power.

Discussion and Conclusion

The findings highlight that both internal banking characteristics and external macroeconomic variables significantly influence the interbank interest rate in Iran. Strengthening credit provision mechanisms, enhancing banking efficiency, and ensuring stability in exchange and inflation rates can improve the performance of the money market and monetary policy outcomes. Future studies are recommended to employ **Fuzzy Multi-Criteria Decision-Making (MCDM)** techniques, **Fuzzy Ontology modeling**, **Artificial Intelligence algorithms**, and **System Dynamics approaches (Vensim)** to explore the interrelationships among these variables more comprehensively.

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