

Time-Frequency Analysis of the Effectiveness of the Inflation Targeting Framework in South Africa Using Disaggregated Data

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Abstract

This study evaluates the effectiveness of South Africa's Inflation Targeting (IT) framework by examining the time-frequency relationship between inflation and interest rates using disaggregated data. Employing wavelet coherence analysis and the Glosten, Jagannathan, and Runkle Dynamic Conditional Correlation Generalised Autoregressive Conditional Heteroskedasticity (GJR-DCCGARCH) model, the study evaluates inflation expectations across various provinces and examines the distinct variations between urban and rural areas. The findings reveal significant regional disparities in monetary policy transmission, with urban areas and economically advanced provinces such as Gauteng and the Western Cape exhibiting stronger coherence between repo rate adjustments and inflation expectations. In contrast, rural provinces display weaker monetary policy transmission, suggesting structural barriers such as financial exclusion and limited economic activity. The study further identifies an asymmetric response to repo rate changes, with inflation reacting more strongly to interest rate hikes than to rate cuts. These findings highlight the need for a more nuanced, regionally tailored approach to monetary policy in South Africa. Enhancing financial inclusion and addressing structural constraints in rural and economically marginalised regions could improve the efficacy of inflation targeting, ensuring balanced economic stability nationwide.

Keywords: inflation targeting, monetary policy transmission, Fisher effect, wavelet coherence analysis, GJR-DCC-GARCH, inflation expectations, regional disparities, South African economy, urban-rural divide, financial inclusion