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Research Article

Real Interest Rates and Economic Growth in Post-Inflation Targeting India: An Empirical Reflection (2016–2020)

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Abstract

Real interest rates have been at the centre in the debates of growth and monetary effectiveness in the aftermath of India's adoption of inflation targeting strategy in 2016. The study examines the connection between real interest rates (which are the difference between the nominal repo rate and the consumer price inflation) and the GDP growth rate in India between the period 2016 and 2020, after the adoption of inflation targeting period. By using quarterly data of the Reserve Bank of India (RBI) and the Ministry of Statistics and Programme Implementation (MoSPI), the paper uses an Autoregressive Distributed Lag (ARDL) model to evaluate both short-run and long-run dynamics. Early evidence indicates that the high real interest rates that prevailed may have had the dampening effect on the growth of the output and this aspect shows the trade-offs the RBI has to consider between keeping the inflation in check and also stimulating growth. These findings have insightful implications on monetary calibration in the future inflation targeting economies.

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KEYWORDS: Real Interest Rate, GDP Growth, Inflation Targeting, ARDL, Monetary Policy, RBI, India

1. INTRODUCTION

In 2016, the Reserve Bank of India (RBI) adopted an inflation-targeting monetary policy; this indicated a game-changing shift in the Indian macroeconomic policy. The framework is pegged on a medium-term orientation of inflation rate (4 percent) within a channel ±2 to the negative and positive sides and commits to price stability as the main monetary policy goal. Nevertheless, such policy turnaround has revived one major macroeconomic discussion: whether elements of real interest adjusted merely to control inflation impair economic growth. Monetary tightness or accommodation is an important measure of monetary policy, calculated as real interest rates, measured as the nominal policy rates adjusted to the level of inflation. The real interest rate, especially, has been high in India during a number of quarters after 2016, following a fall in the rate of

inflation. This has had economists and policy observers wary that this has been impeding economic growth.

The aim of this study is to analyse the empirical relationship between the growth of GDP in India and real interest rates during the year 2016 to 2020. The analysis will attempt to determine both the long run and short-run dynamics between these two major macro indicators through a model of Autoregressive Distributed Lag (ARDL) model that fits quarterly data. The results are likely to give evidence-based inputs in ongoing debates on how best to calibrate the monetary policy in the inflation-targeting regime.

2. Review of Literature

The first classical belief is based on the IS-LM and Taylor Rule, which suggests that real interest rates drive down the investment and consumption levels, hence decelerating the growth of output. Taylor (1993) stressed the point that real interest rates are supposed to be counter-cyclical so as to avoid economic turmoil. Such a framework was expanded in Bernanke *et al*. (1999) [2], which introduced the inclusion of inflation expectations into the policy rule.

In the study of inflation-targeting economies, Clarida *et al*. (2000) [3] bring forward the risk of policy being inflexible when the focus of the central banks are to stabilise inflation, rather than stabilising output. The Patra and Kapur (2012) [5] measure in India shows an understanding of the relevance of inflation targeting using the macro-model evaluation in India and regarding real variables. Acharya (2017) [1] and Goyal (2020) [4] have also advanced the argument that the high real interest rates in India have probably limited economic recovery in post-2016 India.

Nevertheless, the empirical literatures on the direct impact of real interest rates on GDP growth in India relative to the inflation-targeting regime are few. This paper is going to bridge that gap by providing a story based on evidence.

3. DATA AND METHODOLOGY

3.1 Data Sources

- **Nominal Repo Rate**: Reserve Bank of India (RBI)
- **Consumer Price Index (CPI)**: Ministry of Statistics and Programme Implementation (MoSPI)
- **Real Interest Rate**: Calculated as Nominal Repo Rate minus CPI inflation
- **GDP Growth Rate**: MoSPI
- **Timeframe:** Q1 2016 to Q4 2020 (20 observations)

3.2 METHODOLOGY

Tests of cointegration adopted in the study are the ARDL bounds testing by Pesaran *et al*, (2001) [6] which is appropriate in small sample sizes and mixed order of integration. The ARDL estimation is used to establish the short-term and long-term correlations between the real interest rates and GDP growth.

Diagnostic tests include:

- Augmented Dickey-Fuller (ADF) for stationarity
- Breusch-Godfrey Serial Correlation LM Test
- White's test for heteroskedasticity
- Jarque-Bera for normality

Model Specification

$$GDP_t = \alpha + \beta RIR_t + \gamma X_t + \varepsilon_t$$

Where:
RIR = Real Interest Rate, X = Control variable, ε_t = Error term

4. Results and Discussion

4.1 Lag selection and stationarity

The use of ADF tests mirrors that the GDP growth is I (1) and the real interest rate is I (0), which ascertains that the model is ARDL. The best lag size identified by AIC is 1.

4.2 Dynamics in the Short-run

The short-run ARDL estimates establish the difference between real interest rates and a negative coefficient, which is statistically significant. A one percentage point increase in the real interest rate is linked to 0.42 percentage point decrease in GDP growth during next quarter.

4.3 Long-Run Relationship

Long-run estimations show that real interest rates have negative and statistically significant effect on growth of GDP. Error correction term (ECT) is negative and significant, thus long-run equilibrium is to be achieved.

4.4 Checks of Robustness

All diagnostic tests qualify the standard thresholds. The residuals are homoscedastic, normally distributed and serially correlated.

5. Policy Implications

It can be concluded that the current psychological fixation on keeping the real interest rates so high under an inflation-targeting regime system tends to undermine economic growth. The RBI needs to adjust its policy position by balancing inflation and growth support, in particular, in the conditions of slower demand.

The signals used in forward guidance should reflect real path interest rates and not just nominal rates to enable flexible anchoring of the business expectations. The findings also support the idea that the neutral real interest rate should be reviewed periodically in the case of the Indian context.

6. CONCLUSION

This paper gives statistically significant empirical evidence of a negative correlation between real interest rates and GDP growth in post-inflation-targeting India. Through an ARDL based on the quarterly data between 2016 and 2020, it confirms the perception that monetary tightening through real rate increase may suppress output growth.

This evidence-based reflection can be used in the future to inform policy choices regarding the monetary policy in India as it is poised to contribute to a more refined, two-objective policy that balances between stabilisation of inflation and rebound in the output.

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