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# *Abstract of Doctoral Dissertation*
# An Evaluation of Monetary Policy in India: Interest Rate Responsiveness[#]

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## 1. Introduction

Monetary Policy consists of issues related to deciding the right quantity of money to be supplied to the economy for achieving its policy goals and also deciding on the right framework for pursuing the same. The process involves choosing monetary policy targets, understanding the various channels of monetary policy transmission and making use of the best set of tools which has the maximum potential to affect the target variables. The study helps us to build a deep insight into the contemporary monetary policy issues for the Indian economy.

Over time the tools of monetary policy have expanded, its scope has widened and the role of monetary policy has become crucial especially in view of the limits to fiscal policy imposed by concerns about sustainability of public debt. All the time monetary policy has relied less on the money supply and more and more on the interest rate policy. Given the changing dimensions of the world economy, the growing share and performance of the emerging market economies, the greater role of open and free markets and free mobility of capital and associated financial market volatility, the role of monetary policy in emerging economies like India presents ample scope for further research.

In the contemporary times, we can identify at least three primal issues with regard to the role of monetary policy in India. These are: (a) the relevance of inflation targeting (the Taylor principle) and its scope and applicability in emerging economies like India; (b) the relation between output and interest rate; and (c) the relation between interest rate policy and inflation, an issue that still remains unresolved, especially in emerging markets where structural bottlenecks also affect prices, often in a significant manner.

## 2. Objectives, Data Sets and Methodology

The study has been divided into three empirical sections, covering the above mentioned broad areas concerning monetary policy.

First, the responsiveness of interest rate to the monetary policy objectives of inflation vis a vis output growth. Here we analyse the behaviour of interest rates, using a modified Taylor equation, to identify whether interest rate responds more to the policy objective of growth or inflation control. The study contributes in terms of introducing a broad open economy Taylor rule incorporating besides the main objectives of output gap and inflation gap, fiscal deficit to GDP ratio and foreign exchange rate premium for a more comprehensive analysis of policy responsiveness. For this part of the study, we use secondary data for the Indian economy for the period April 1996 to December 2014. Quarterly data on relevant macroeconomic variables are used for this study.

The second objective of the study is to assess the impact of monetary policy, especially the interest rate policy of the RBI on growth. As we assess the effectiveness of interest rate as a monetary policy tool we also examine whether there is evidence to support the existence of an 'interest rate puzzle' (absence of inverse relation between interest rate and output) for the Indian economy.

Our third objective is to assess the impact of monetary policy on inflation, where once again we focus on the

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interest rate tool. In particular, we attempt to assess the effectiveness of interest rate as a policy tool under recessionary conditions. For this we carry out an empirical analysis and try to compare the effectiveness of interest rate policy before and after the global crisis of 2007-09.

For the second and third empirical parts of the study, monthly data for the period May 2001 to March 2015 is used.

All the data on the relevant macroeconomic variables for the study have been collected from Handbook of Statistics on the Indian Economy and Data Base on Indian Economy from RBI; National Accounts Statistics of the Central Statistical Organization (CSO); the various issues of Monthly Bulletin of RBI and data base of Indian Oil Corporation.

For each objective, the empirical strategy is based on a common methodology, viz., Autoregressive Distributed Lag (ARDL) model for cointegration. This technique is advanced as compared to other cointegration techniques which work on differenced data and lead to loss of information. It can be applied when the variables are of different order of integration. Another advantage of this technique is that it helps to handle inherent endogeneity among the macro variables by taking sufficient number of lags both of the dependent and the independent variables being studied. Moreover, a dynamic error correction model (ECM) can be derived from ARDL through a simple linear transformation. The ECM integrates the short-run dynamics with the long-run equilibrium without losing long-run information. The literature using ARDL technique is thin, as it is relatively a newer technique, thereby providing an edge to the present study.

The study also includes a theoretical section relevant to the study of monetary policy. It includes the various theories of monetary policy, which help us to understand the basis of the monetary policy and its relationship with important economic variables considered in the study. It also gives a brief overview of the monetary policy framework in India. Additionally, it also presents an exclusive section on the relationship between monetary policy and interest rate which is essential in light of not just the present study, but also due to the shift in monetary policy stance in India with focus on the use of interest rate as a monetary policy tool. The study makes use of Call rate as the measure of interest rate in the first empirical section, while for the second and third sections, repurchase (repo) rate serves as the interest rate metric.

## 3. Main Results

The findings are presented separately for the three empirical sections.

In the first part of the study which considered interest rate responsiveness of policy using modified Taylor rule, the policy responsiveness is found to be highest for output gap, implying any deviation of output from its target level leads to large variations in policy interest rate. It is also found, that the responsiveness of policy interest rate to output gap is in accordance with Taylor principle, wherein, the increase in interest rate is greater than the deviation of actual output from its potential level. This in turn implies, the focus of the monetary policy has been mainly to increase and stabilize the growth rate of the economy and not meeting the objective of inflation control for the period of study. Further, the results show, monetary policy responsiveness to output and other significant variables is larger in the post-global financial crisis period.

The results of the second section, considering policy impact on output, suggest the presence of an interest rate puzzle for the Indian economy for the period of study, wherein a positive relationship between interest rate and output gap has been found. The study also attempts to resolve the puzzle by incorporating some suggestions as provided by literature, but the puzzle still persists. This in turn implies that the monetary policy has not been responsible for slow growth of the economy in the recent past, rather explanation for slow growth lies in some other real or financial factors such as business environment, larger size of informal sector, interest rate pass through and demand from government sector.

The third section, which focuses on the policy impact on inflation, finds interest rate policy to be effective in controlling inflation in general, with the effectiveness reducing in the post-global financial crisis. The reason for the latter lies in the huge spurts of fiscal expansions to overcome recessionary phases, which in turn, poses problem for fiscal-monetary coordination. The problem aggravates further when the trend continues even during the recovery period, and is a threat to stable inflation. This is referred to as "fiscal dominance of monetary policy".

In general, the results seem to suggest that monetary policy has a key role to play in the Indian economy in terms of macroeconomic stabilization. The study supports the recent shift of the Reserve Bank of India to inflation targeting, which will help anchor inflationary expectations, thereby, capturing any deviations in inflation gap and thus, the possible macroeconomic repercussions in the shortest possible span of time.

The study recommends monetary policy framework must continue with interest rate as a key tool. Further, repo rate which is the policy interest rate should continue to serve as the monetary policy variable, as it is well concomitant with the present focus of monetary authority on inflation targeting.