



Inflation targeting in India: A comparison with the multiple indicator approach

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ABSTRACT

The empirical literature on identification and measurement of the impact of monetary policy shocks on the real side of the economy is fairly comprehensive for developed economies, but very limited for emerging and transition economies. In this study, we propose an identification scheme for a developing economy (taking India as a case study), which is able to capture the monetary transmission mechanism for that economy without giving rise to empirical anomalies. Using a VAR approach with recursive contemporaneous restrictions, we identify monetary policy shocks by modelling the reaction function of the central bank and structure of that economy. The effect of monetary policy shocks on the exchange rate and other macroeconomic variables is consistent with the predictions of a broad set of theoretical models. This set-up is used to build a hypothetical case of inflation targeting where the monetary policy instrument is set after assessing the current values of inflation only. This is in contrast with the 'multiple indicator approach' currently followed by the Reserve Bank of India (RBI). The results in this study suggest that the demand effects of interest rate are stronger than the exchange rate effects. There is also evidence of the mitigation of potential conflict between exchange rate and interest rate, one of main monetary policy dilemmas of the RBI in inflation targeting.

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1. Introduction

The monetary policy framework in India has undergone various transformations since the beginning of economic planning in 1951. At the beginning of the planning period the monetary policy framework could be best described as 'controlled expansion' of the money supply, and was determined mainly by a fiscal stance that was formulated against the backdrop of large budget deficits. The main task of the Reserve Bank of India (RBI) at that time was to contain the adverse effects of monetization.¹ In the mid 1980s, India switched to a monetary targeting framework. Monetary targeting was pursued in a very flexible manner with feedback obtained from the real sector of the economy. This was necessary because of the high level of government borrowings and administered interest rates. During this period, the two core objectives of monetary policy were to maintain price stability and to provide adequate credit to the productive sectors of the economy.

After a balance of payment crisis in 1991, India adopted economic reforms which led to a distinct change in the early 1990s in policy environment, framework and strategies. Monetary policy then had to deal with traditional issues alongside those new issues brought about by the changed economic policy environment. Indeed, deregulation and liberalization of

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¹ Monetization of the deficit is the increase in net RBI credit to the government which, in turn, is the increase in the RBI's holding of government dated securities, 91-day treasury bills and rupee coins for changes in cash balances with the Reserve Bank.

financial markets started casting doubt on the appropriateness of exclusive reliance on money as the only intermediate target in the late 1990s. The expansion of money supply emanating from monetization of the government deficit and rising capital inflows rendered the control of monetary aggregates more difficult. The gradual opening up of the Indian economy from the 1990s also increased upward risks to domestic inflation. This emanated from large capital inflows in the economy and a host of other global factors to which domestic inflation was increasingly becoming more responsive. The transition of economic policies from a controlled to liberalized but regulated regime has been reflected in the changes in monetary management in India. In 1998–1999, the monetary policy framework in India changed from ‘pure monetary targeting strategy’ to a multiple indicator approach (MPA).² Although the basic objectives of monetary policy of ensuring price stability and availability of credit to productive sectors remained intact, the underlying operating procedures underwent significant changes. Nevertheless, broad money remained an information variable, with a host of macroeconomic indicators (including rates of return in different markets) used to draw policy perspectives. Emphasis shifted from direct instruments of monetary policy (interest rate regulations, selective credit controls and cash reserve ratio (CRR)) to indirect instruments (repo operations under liquidity adjustment facility (LAF) and open market operations (OMO)).

This new approach bestowed on the RBI the required flexibility to formulate monetary policy in the face of ongoing financial liberalization and increasing openness. The LAF was introduced in 2000 and enabled the RBI to manage liquidity on a daily basis by absorbing and injecting liquidity through repo and reverse repo operations on a variable rate basis. The LAF also helped to keep the movements of the overnight call rate within a specified band and provided monetary authorities with greater flexibility in determining both the quantum of adjustment and rates by responding to the needs of the system on a daily basis. However, the increasing openness of the Indian economy, market determined exchange rate and large capital inflows necessitated sterilizing capital inflows and foreign exchange market intervention. It was initially done through OMO but limited stock of government securities with the RBI under OMO curbed its ability to sterilize. The burden of sterilization consequently shifted to the LAF, which was essentially a tool of marginal liquidity adjustment. In order to absorb liquidity of an enduring nature using an instrument other than LAF, market stabilization scheme (MSS) was launched in 2004. The instruments of short-term (treasury bills) and medium-term (dated securities) maturities were issued by the government to the RBI under MSS to absorb liquidity from the system. The MSS empowered RBI to absorb liquidity on a more enduring but temporary basis, leaving LAF to manage daily liquidity and the OMO on a more enduring basis (Mohan, 2008).

While monetary management in India has been credible so far, the increasing integration of the Indian economy with the world economy since 2000 has led to the transmission of uncertainties related to world financial and oil markets into India’s domestic economy, making the macroeconomic environment more unpredictable. Hence, the monetary framework in India has to adjust to rapid capital inflows and outflows. In this changed scenario, the MPA of monetary policy which is currently followed by the RBI does not seem to work effectively. The multiplicity of objectives leads to inherent conflict among such objectives in this environment, in particular between exchange rate stabilization and inflation stabilization. As a consequence, the market is left confused as which variable the RBI will choose to defend,³ with the monetary impact of capital flows becoming a subject of serious discussion in the recent period. While the MSS is the policy instrument for checking monetary expansion out of capital flows, it is not working well as incomplete sterilization under MSS is leading to rapid growth in money supply and credit and thus fuelling inflation. The interest costs of MSS are also growing and resulting in large public expenditure.⁴ This changed scenario calls for a change to the monetary policy framework to ensure it is transparent and forward-looking, with accountability on the part of the central bank. By its very nature, inflation targeting encompasses all these properties.

Mishra and Mishra (2009) analyzed the preconditions for inflation targeting in India and assessed its suitability as that country’s monetary policy framework. They built sector-specific vector auto-regression (VAR) models and suggested that the Indian economy satisfies the preconditions for inflation targeting. Extending the analysis of Mishra and Mishra (2009), this paper builds a short-run comprehensive VAR model of monetary policy for the Indian economy to examine a hypothetical inflation targeting monetary policy regime.

The VAR model presented is subjected to monetary policy shocks as different models respond differently to monetary policy shocks. The theoretical consistency of responses of the major macroeconomic variables to these shocks will enable us to conduct the hypothetical experiment of inflation targeting in the above specified VAR model.⁵

Given that the variables are simultaneously determined over time, an identification assumption on contemporaneous causality⁶ is required to be able to isolate monetary policy shocks. We assume that the policy shock is orthogonal to the variables that the RBI considers while setting its policy instrument. This is referred to as the recursiveness assumption. The economic implication of the recursiveness assumption is that time t variables in the RBI’s information set do not respond to time t realizations of monetary policy shocks.

² Although the ‘multiple indicator approach’ was formally adopted in April 1998, the change in the operating procedure of monetary policy was visible after 1995 only, as our analysis in the next section suggests.

³ To see how refer, for example, to D’Souza (2003) and Shah (2007).

⁴ Refer to D’Souza (2003) and Shah (2007).

⁵ This approach is based on Lucas’ methodology (see Christiano et al., 1999).

⁶ We placed only short-run restrictions (i.e., restrictions on contemporaneous causality) to identify monetary policy shocks. We did not go into the long-run restrictions structure. As we are limiting ourselves to short run (that is the period up to one year); we do not consider issues related to cointegration, which basically studies the existence of long-run equilibrium.

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