

## TESTING THE INDEPENDENCE OF MONETARY POLICY OF INDIA FROM FOREIGN SHOCKS

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### ABSTRACT

*Major economies prefer an independent Central Bank due to the underlying assumption that it helps in maintaining price stability and containing inflation. In this light, the present paper aims to examine the monetary policy independence in India of past four decades (i.e., 1980 to 2020) by creating a Monetary Independence Index (MI). The inverse of the annual correlation of the monthly interest rates between India (Call Money Rate) and the base nation (Federal Rate) has been used to calculate monetary independence, where the United States (US) has been chosen as the base nation. The International Financial Statistics of the International Monetary Fund has been the major data source. The analysis of index reveals how independent the monetary policy of India is from the monetary policy of the US. The trend of the index discloses that Indian policymakers have always preferred a middle path for MI where the value of the index lies more or less at an average of 50 per cent.*

**KEYWORDS:** Central Bank, Monetary Policy, Rate of Interest.

**JEL Codes:** E58, E52, E43.

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### Introduction

Any economy's policymakers want stable, non-inflationary output growth at any moment. A set of macroeconomic policies is created and implemented to achieve this. The growth of output and subsequent economic growth depends upon how well the policies on paper are implemented on ground. This is a difficult endeavour in and of itself, as globalisation has rendered economies more vulnerable to financial shocks from other countries. As a result, the Central Banks of all nations thoroughly examine their policies before executing them. One of the strategies to achieve stable economic growth is to maintain an independent monetary policy. Monetary policy independence is understood as the ability of the central bank to set interest rates independently of international rates (Aizenman & Ito, 2012). It has also been proved historically that maintaining such stable prices have not been easy to accomplish. Over time, both the developed and developing nations have struggled to restore confidence in their currencies. Because delegating monetary policy to an independent central bank has been a key institutional mechanism believed to help achieve low inflation, bank independence has increased worldwide since the 1990s (Bodea & Hicks, 2014).

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One of the advantages of flexible exchange rates, according to traditional open economy macroeconomics models (Mundell–Fleming) is that the country in issue can set its own monetary policy. Another way to phrase it is that countries with flexible exchange rates are not subject to the 'trilemma,' which asserts that it is impossible to have fixed exchange rates, capital mobility, and an independent monetary policy all at the same time. However, the extent of monetary policy independence under flexible rates is an empirical question at the end of the day. If a central bank feels compelled to imitate the policies of other countries for any reason, there occurs policy 'contagion', and the actual—as opposed to theoretical—degree of monetary policy autonomy will be considerably decreased (Edwards, 2015).

In a country with a fixed exchange rate, domestic interest rate ( $r$ ) will not deviate from foreign interest rate ( $r^*$ ), i.e.,  $r=r^*$ . Under these circumstances, changes in world interest rates will be transmitted into the local economy. As the domestic economy raises its rate of interest ( $r>r^*$ ), the higher returns attract investors towards the domestic economy. This results in massive capital inflows into the domestic economy. The indigenous currency (say rupee) will appreciate due to an excess supply of foreign currency (say, dollars). As a result, economies with a pegged exchange rate are unable to pursue an independent monetary policy, and the local central bank is unable to set its own interest rate. However, under flexible rates, local rates may differ from global interest rates. If central banks seek to avoid "excessive" exchange rate volatility, they will most likely take other central banks' actions into consideration when calculating their own policy rates, limiting their ability to make independent policy decisions.

Recent years have witnessed rising threats to central bank independence, from advanced economies, such as the United States, to developing ones, like India (Lim, 2021). The present study analyses whether monetary policy in the focus economy (India) was 'determined' abroad—that is, if it was largely influenced by the policies of the larger monetary area (United States). The United States (US) was chosen as the base nation because the Indian economy has been most closely tied with the United States (Aizenman, 2010). In this sense, the adoption of foreign interest rates can be seen as a result of increased economic integration through trade and financial markets. As a result of the increased trade and capital ties between these areas, monetary policy convergence will increase. Another likely cause is a common component of global inflation; in such instances, the central banks of both areas react similarly to exogenous disruptions. The high degree of policy similarities between the domestic and foreign central banks reflects a degree of interdependence between the two. However, all of these causes of monetary policy independence have the same result: the smaller country's monetary policy will not be independent.

The present study aims to measure the monetary policy independence of India from the policy changes in the United States. This has been done by constructing a monetary policy index spanning the years 1980 to 2020 which has been discussed in part three of the article. The study has been divided into six sections. The first section introduces the topic. The second section briefs the history of monetary policy of India. Section three presents available literature on the topic. The fourth section discloses the data and methodology. The next section (fifth) analysis the results followed by the sixth section which concludes the study.

### **The Monetary Policy of India**

The Reserve Bank of India (RBI) is India's sole authority for monetary policy formulation and implementation. According to the RBI, the major goal of Indian monetary policy is to ensure price stability, which is a vital precondition for long-term growth. An independent monetary policy is desired by every economy as it has a number of benefits. The instruments used by the RBI in exercising its monetary policy includes- Repo Rate, Reverse Repo Rate, Liquidity Adjustment Facility (LAF), Marginal Standing Facility (MSF), Bank Rate (BR), Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), Open Market Operations (OMO) and the Market Stabilisation Scheme (MSS). With the evolving structure of the Indian economy, India's monetary policy framework has experienced numerous adjustments since 1935.

Starting in 1935, the primary goal of monetary policy was to maintain a stable exchange rate by controlling liquidity in the economy through open market operations. Another big issue was growing inflation as a result of supply-side shocks, given the agrarian nature of the Indian economy. Apart from the many measures adopted by the Indian government to reduce inflation, the RBI used moral suasion and selective credit control to deter commercial banks from lending money for speculative purposes. After the independence of India in 1947, the monetary policy was mostly aligned with the objectives of the five-year plans. The government placed a high priority on plan expenditure because it would speed up the development process, so finance allocation to productive sectors was a top priority. Until 1969, the Indian economy's supply and demand of finances were mostly regulated by monetary policy.

The year 1969 was a watershed moment in the history of monetary policy. The major banks were nationalised with the goal of making finance more accessible to a broader segment of the population. Inflationary repercussions resulted from this credit growth. Other global events, such as the India-Pakistan conflict in 1970, the collapse of Bretton Woods system in 1973, and worldwide oil shocks in 1973 and 1979, all exerted inflationary pressure on India. The Reserve Bank of India had to strike a balance between price stability and credit provision for economic growth.

The Chakravarty Committee suggested monetary targeting in 1985, which involved managing the money supply to attain a manageable level of inflation. During the liberalisation of the economy in the 1990s, the necessity for monetary policy revision became apparent. As a result, in 1998, the RBI implemented a multiple-indicator strategy. A range of measures, such as output, inflation, exchange rate, credit, trade, and so on, were used to formulate monetary policy under this method. The RBI was able to execute its monetary policy with more flexibility owing to this vast range of variables. This multiple-indicator approach has not remained stable but has evolved over time. In conclusion, the current monetary policy framework of the RBI can be described as an upgraded multiple-indicator approach.

The Central Bank of India has set an example for other emerging economies by revising the structure, procedures, and transmission of monetary policy on a regular basis in order to meet the goals of a bearable level of inflation, financial stability, and economic growth. As a result of this procedure, the monetary policy of the RBI has become even more transparent.

### **Review of Literature**

Goczek & Mycielska (2019) examined the monetary independence in Poland for the time period 2001 to 2014 using Vector Error Correction Model. The aim was to identify the actual degree of monetary independence in small open economy with floating exchange rate. The results indicated towards the lack of monetary independence in Poland during the study period. Rey (2016) argues that when the economies are financially intertwined, fixed exchange rates export the monetary policy of the U.S. to other economies. Whereas, if the exchange rates are kept floating, the economies are found gaining some monetary independence. Agrippino & Rey (2015) analyse the interaction between U.S. monetary policy and leverage and credit growth in the rest of the world. The study provides evidence of spillover effects of monetary policy of the U.S. to rest of the world.

Edwards (2015) conducted a study spanning the years 2000 to 2008 to identify if the U.S. monetary policy actions affect the policy interest rates in Chile, Colombia and Mexico. The study concluded that interest rates of the Federal Reserve are imported by Colombia (74 per cent), Chile (50 per cent), and Mexico (33 per cent). Buscher & Gabrisch (2011) analysed if there is some correlation between short term interest rates among Sweden, Denmark and the U.K. The results confirmed the dependence among the three economies.

Reade & Volz (2009) employed VAR modelling in their study and concluded that rate of interest in Sweden is largely dependent upon the decisions made by European Central Bank. Mathew (2006) measures monetary independence in 25 countries by creating an index which offers optimal implementation of reforms in Central Banks in the developing countries including India. Hausmann *et al.* (2001) in his study concludes the interest rates in countries with both fixed and flexible exchange rates depend upon U.S. monetary policy shocks. Frankel *et al.* (2002) explores if international interest rates are transmitted to countries with floating exchange rate using data from 1970 to 1999. The study concluded that only large industrial nations could achieve their desires monetary independence, whereas the countries with flexible exchange rates adjusted more slowly to the changes in monetary policy abroad.

### **Data and Methodology**

The introductory elucidations and literature review have been attempted in the foregoing sections to get clearer insights for the present study. The methodology employed to achieve the above-mentioned objectives is detailed in the present section. The present study is based on secondary data of monthly frequency obtained from the *International Financial Statistics* (IFS) of the International Monetary Fund (IMF). The methodology for creating these indexes has been discussed later in this section. The variables used are Call Money Rate (CMR) and Federal Rate (FR). The monthly data for CMR and FR has been derived from IFS of the IMF for the time period 1980: April to 2020: March.

For the creation of index of Monetary Independence (MI), the methodology developed by Aizenman *et al.* (2008) has been used. For the creation of MI annual correlation of the monthly interest rates between India and the base nation has been used. The USA has been selected as the base

country following Aizenman (2010) who states that the Indian economy has been most closely tied with the United States during the study period. The methodology involves calculating the inverse of annual correlation between Call Money Rate (CMR) of India and Federal Rate (FR) of the US. The following is the formula for constructing the MI index:

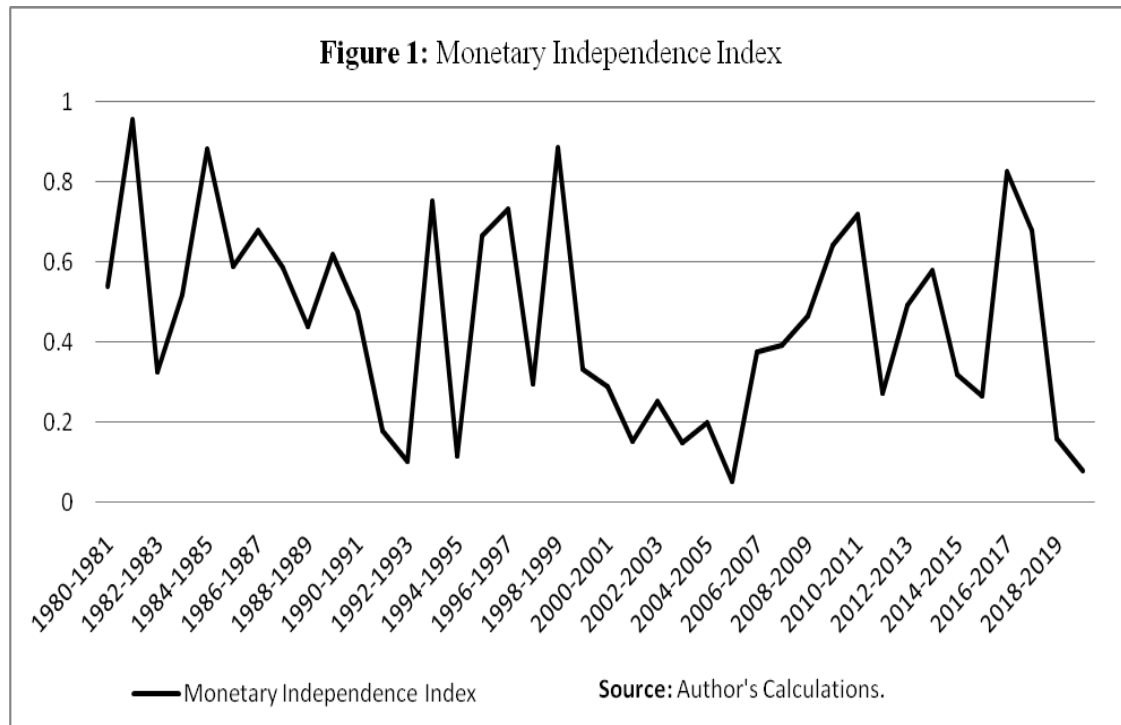
$$MI = 1 - \frac{corr(i_i, i_j) - (-1)}{1 - (-1)}$$

Here,  $i_i$  depicts the Indian money market rate (CMR), whereas  $i_j$  denotes the money market rate prevailing in the US (FR). This index ranges between zero and one, where an increase in the value of the index implies rising monetary independence and vice versa. If the MI index is zero, it would denote complete absence of the monetary independence, subsequently implying that the CMR is completely determined by the FR. Similarly, a value of one on the MI index would mean complete monetary autonomy.

### Analysis

Following the creation of Index of Monetary Independence (MI), the next step is to analyse the trend of MI index to determine the various episodes of independence of Reserve Bank of India from Federal Reserve. Figure 1 depicts the index as a graphical representation.

The analysis of the index suggests that India had considerable MI prior to the 1990s, when it did not face the Balance of Payments crisis. However, one event of decreasing MI can be seen during 1981 and 1982. The likely cause is inflationary pressures resulting from the oil crisis, which prompted India to boost its Bank Rate, CRR, and SLR. Following that, India gained MI. The decade of 1980 to 1990 marked a period of independent monetary policy of the RBI as India had closed capital account and therefore the risk of importing inflation from rest of the world was very low.



On the onset of 1990s, India's MI is seen suffering a dramatic decrease. This could be due to the Indian economy's poor macroeconomic health prior to the economic reforms. In the early 1990s, India went through a massive balance of payments crisis, placing pressure on its exchange rate and inflation. Therefore, the Indian economy had to get conditional assistance from the International Monetary Fund. As a result, India's MI was lost.

The RBI is seen gaining MI in 1994 when rupee was made fully convertible on current account. India could pursue an autonomous monetary policy by using its foreign exchange reserves because it was not bound to maintain a fixed exchange rate. This rise in India's MI was, however, short-lived. India lost its MI again at the end of the 1990s, implying that the RBI's policies were impacted by the Federal Reserve's decisions. This can be attributed to the fact that a series of measures were to be taken in response to the Asian currency crisis of 1997. When the Asian crisis ended, India regained its MI.

MI was at an all-time low throughout the decade of 2000 as following the end of the Asian crisis, emerging economies, including India, saw huge capital inflows, prompting the RBI to intervene in the foreign exchange market to avoid currency appreciation. Later in 2006, a series of capital controls were announced, easing outflows and imposing restrictions on inflows of capital into India, as well as a move in the exchange rate toward greater flexibility. From 2006 to 2010, India gained MI as a result of these actions. The MI of India again saw a dip at the beginning of 2010s. This was largely due to the high inflation in the post financial crisis period. In such situation, the US Fed's taper talk challenged the domestic monetary policy. The MI later, has remained more or less at 50 per cent.

Figure 1 indicates that the trend in the index of Monetary Independence (MI) has fluctuated but has remained more or less at an average of 50 per cent. This leads us to the conclusion that the Indian policymakers have always preferred a middle path for MI. However, the global decline in the interest rates during recent years has exerted pressure on the Reserve Bank of India (RBI), thereby hampering its MI.

### Conclusion

The aim of the present research was to examine the monetary policy independence in India for past four decades (i.e., 1980 to 2020). This has been done by developing a Monetary Independence (MI) index using the monthly interest rate data of India and the US (base nation). The variables used were Call Money Rate and Federal Rate which were extracted from the International Financial Statistics of the International Monetary Fund. The inverse of the annual correlation of the monthly interest rates between Call Money Rate and the base nation (Federal Rate) has been used to calculate monetary independence and thereafter, the index has been analysed.

The index's trajectory shows that India had a considerable of MI before the 1990s. However, when India's Balance of Payments problem developed, the country's MI dropped dramatically. When the rupee was made fully convertible on current account and partially convertible on capital account in 1994, the RBI gained MI since India no longer had to maintain a fixed exchange rate. However, following this brief surge in the MI, India lost its MI in the late 1990s. The Asian currency crisis of 1997 could be one of the reasons behind this. A probable reason for this could be the Asian currency crisis of 1997. India regained its MI when the Asian crisis ended.

The decade of 2000 marked a period of low MI as India received massive capital inflows and RBI began to intervene in the foreign exchange market to prevent currency appreciation. India regained its MI in 2006 after a series of capital restraints. The next drop in MI occurred in 2010, when inflation began to rise in the aftermath of the financial crisis. However, the Monetary Independence Index has remained roughly constant at 50%, leading us to believe that Indian policymakers have always selected a moderate route for MI.

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