Moving to Inflation Targeting

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Abstract

India adopted a flexible inflation targeting framework as a formal legal mandate of the RBI in March 2016. The preamble to the RBI Act, as well as relevant sections in the Act were amended to enable this change. The frame- work entailed many details such as on the rate of inflation to be targeted, the band, the measure, the composition of the Monetary Policy Committee and the objective. One of these sections require that the rate of inflation to be targeted needs to be reviewed every five years. In March 2021, the central government along with the RBI is required to review the target. This paper presents the logic and rationale of the various elements of India's inflation targeting framework.

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1 Introduction

In the past two decades, many emerging market economies have adopted inflation targeting as their monetary policy framework, catching up with the trend set by their advanced economies counterparts. Adopting inflation targeting framework requires amendments to central banks' legal framework, to assign price stability as the explicit objective of monetary policy. On the design front, considerable details go into defining price stability and a target of inflation either in point or range to be achieved over a specific horizon. In most of the inflation targeting regimes, policy rate decisions are taken by Monetary Policy Committees having internal and external representatives. Decisions are implemented through a set of policy instruments and procedures.

A key feature of inflation targeting regime is the enhanced transparency and accountability of central banks. Transparency enables the government and the public to assess information about whether the central bank has achieved its objectives. This may also lead to improved decision-making on the part of the central bank by exposing to public scrutiny the process through which monetary policy decisions are taken. Transparency is enhanced through regular publication of monetary policy statements and monetary policy reports.

On 20th February, 2015, the Indian policy regime took the first step towards an inflation targeting central bank. The Ministry of Finance and the Reserve Bank of India signed the *Monetary Policy Framework Agreement* which, for the first time gave an inflation target to RBI. The Agreement mandated RBI to bring down inflation to 6% by January 2016 and to 4% with a band of +/- 2 percent for all subsequent years. The next step towards modernising the institutional framework of RBI came about when the Finance Minister announced in his Budget Speech, that the *Reserve Bank of India Act, 1934* would be amended to provide for a monetary policy committee. Subsequently *Reserve Bank Of India Amendment Act, 2016* brought in through the Finance Act of 2016 provided for a statutory and institutionalised framework of monetary policy, for maintaining price stability while keeping in mind the objective of growth. A host of transparency and accountability instruments were also introduced to bolster the credibility of the inflation targeting framework. One of the legal changes require the rate of inflation target to be reviewed every five years. In March 2021, the central government along with the RBI is required to review the target. The law requires a review of the *inflation target* and not the framework as a whole as some media reports have indicated[1]. A review of the framework every five years would cause policy uncertainty. It would be unwise of lawmakers to envisage a review of the framework every five years as it takes decades of low inflation to dampen inflationary expectations[2]. With a review of the target due in the next few months, it is important to assess the rationale of the key changes introduced to usher in a new monetary policy frame-

[1] Das, 2019.

[2] Patnaik, 2020.

work. Drawing on international best practises and expert committee recommendations, and this paper traces the details of the inflation targeting framework through amendments introduced in the *Reserve Bank of India Act, 1934* in March 2016 along with the Finance Bill.

The changes are discussed in three sections. Section 2 discusses the changes introduced in relation to the objective of monetary policy. Section 3 presents the discussion in relation to the institutional framework of monetary policy. Section 4 presents the legislative changes to discuss the functioning of MPC. Drawing on international best practises, Section 6 discusses some additional features of the modern monetary policy regime which could be adopted in the Indian setting.

2 Objective of monetary policy

The *Reserve Bank Of India Amendment Act, 2016* was introduced as a money bill as it was not a separate bill but part of the Union Budget 2016. This using the provisions in the Constitution in Article 110, the amendment was required to be passed only in the Lok Sabha, the lower house of the parliament and not in the upper house. The amendment gave a formal objective to monetary policy. Drawing on international best practises and expert committees' recommendations, the amendment tasked monetary policy with the goal of achieving price stability while keeping in mind the objective of growth. This required determination of a *measure of inflation* to be adopted as the target. The amendment adopted year-on-year changes in the headline Consumer price Index (CPI) as the measure of inflation target. The target was fixed at 4% with an upper and lower tolerance band of 2%.

2.1 Nominal anchor

A credible monetary policy framework adopts a nominal anchor as its objective. A nominal anchor is a variable, that ties down the goal of monetary policy and its path in the medium to long run. The expectations of economic agents adjust accordingly. One nominal anchor that central banks used in the past was the currency peg: which linked the value of the domestic currency either to a single currency or to a basket of currencies. This approach implies that the country's monetary policy is dependent on that of the country's to which it was pegged and its inflation rate will eventually gravitate to that of the anchor economy. Exchange rate as the nominal anchor has several advantages. It anchors inflation expectations in the domestic economy to that of the inflation rate in the anchor economy. It provides an automatic rule for the conduct of monetary policy: monetary policy tightening when there is a tendency for the domestic currency to depreciate and monetary policy loosening when there is a tendency for the domestic currency to appreciate. It has the added advantage of simplicity and clarity and is easily understood by the public. For example, France in 1987 and United Kingdom in 1990 successfully used exchange rate as their nominal anchor to lower inflation by tying the value of their currencies to the German Mark. Among emerging economies, Argentina pegged its currency to the US dollar to bring down the high levels of inflation prevailing in the economy.

Despite its inherent advantages, exchange rate targeting has serious limitations. It results in the loss of independence of monetary policy. Since domestic interest rates are closely linked to exchange rate changes, the domestic economy loses its ability to use monetary policy to respond to domestic shocks that are independent of those affecting the anchor country (Mishkin, 1999). It also exposes the domestic economy to shocks emanating from the anchor economy. As an example, when Germany reunited in 1990, concerns about inflationary pressures and fiscal expansion required to rebuild East Germany led to rise in German interest rates. This shock was transmitted to other countries like France and the United Kingdom was currencies were pegged to the German Mark. Their interest rates rose in tandem. Monetary policy was seen to be far tighter than that warranted by domestic considerations. This led to economic slowdown and rising unemployment in these countries (Clarida, Gali, and Gertler, 1997). As a result, many countries began to adopt flexible exchange rates which led to search for a new anchor (Jahan, n.d.).

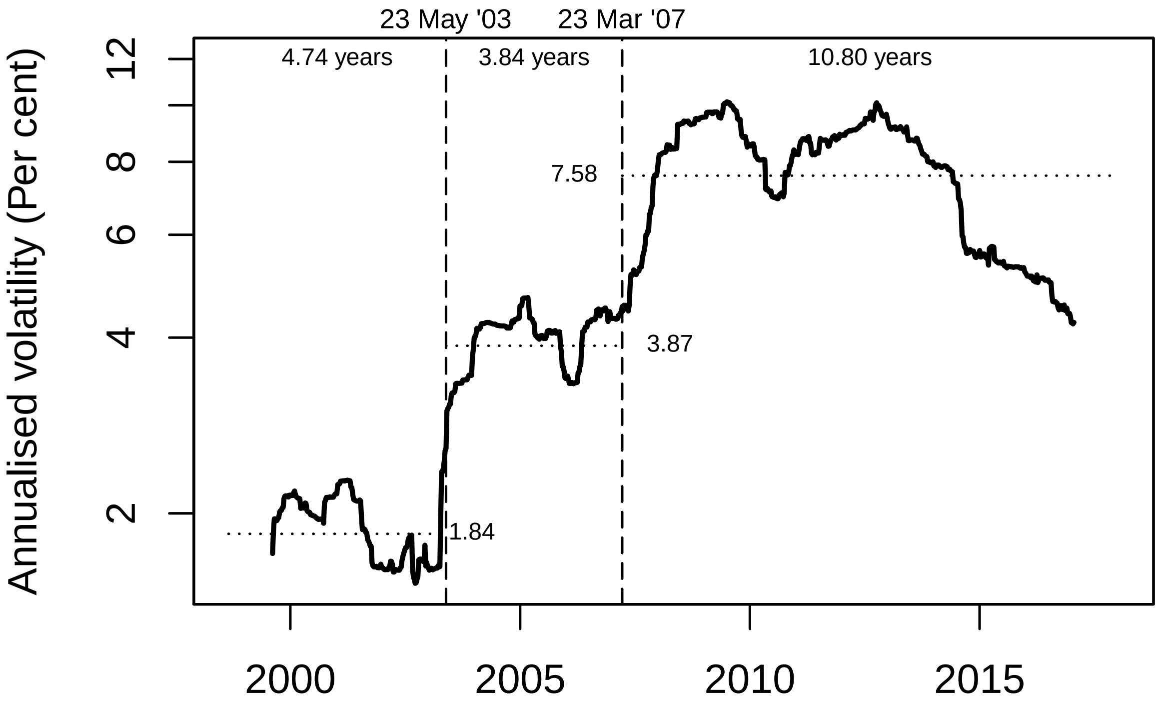
Many central banks then began targeting the growth of money supply to control inflation. A major advantage of monetary targeting is that it enables the central bank to adjust its monetary policy to focus on domestic considerations. Secondly, like an exchange rate target, it is simple and transparent as data on monetary aggregates are typically reported within short time-lags. Thus, monetary targeting can send immediate signals to the public and the market about the stance of monetary policy. However, the success of monetary targeting is conditional upon the presence of a stable relation between the outcome variable (inflation or nominal income) and the targeted variable (monetary aggregates). If the relation between the monetary aggregates and the goal variable is weak and unstable, hitting the monetary target will not produce the desired outcome on the goal variable (Mishkin, 1999).

Before the amendment, the Preamble to the *Reserve Bank of India Act, 1934* stated:

> "AND WHEREAS in the present disorganization of the monetary systems of the world it is not possible to determine what will be suitable as a permanent basis for the Indian monetary system; BUT WHEREAS it is expedient to make temporary provision on the basis of the existing monetary system, and to leave the question of the monetary standard best suited to India to be considered when the international monetary position has become sufficiently clear and stable to make it possible to frame permanent measures"

Since 1934, this temporary provision governed the conduct of India's central bank. As an outcome, the Reserve Bank of India did not have clearly defined objectives and accountability mechanisms.

Figure 1 Volatility of exchange rate

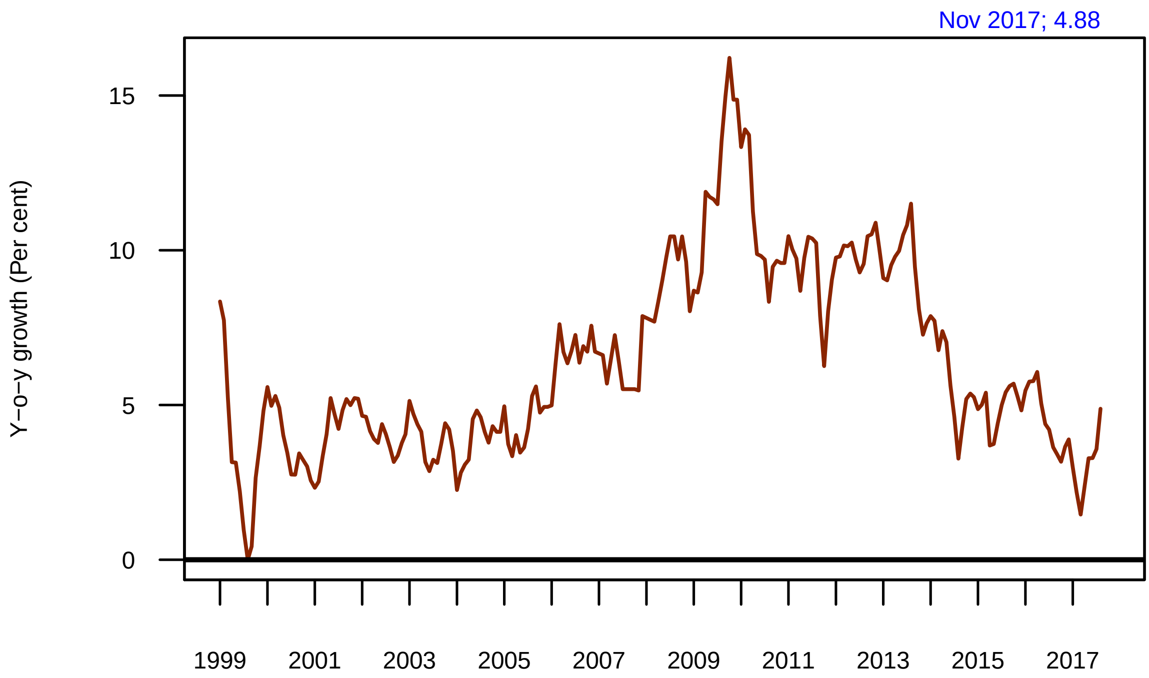


The need for having a defined nominal anchor for monetary policy emerged from higher inflation that resulted from not having a clear nominal anchor. Until 1991, prices of many goods were administered, there were limited financial markets and administered interest rates and there was no need felt for "a monetary policy framework". After the 1991 liberalisation reforms, prices became market determined, the exchange rate regime moved from an administered rate to a market determined rate. The Indian economy opened up both on the trade account and on the capital account resulting in a sharp increase in inflows and outflows of foreign exchange.

In the initial years of surge in capital flows, a low volatility of the rupee was obtained through foreign market intervention.[3]. Until 2004, the RBI was able to fully sterilise its intervention, but then it ran out of its holding of government bonds. It then set up a new arrangement with the government to sell sterilisation bonds, the Market Stabilisation Scheme (MSS), where the government paid interest on these bonds but could not spend the money borrowed[4]. This greater transparency reduced the extent to which RBI's foreign exchange intervention could be sterilised[5]. Until 2008, monetary policy had an occasional nominal anchor: a de facto peg to the USD[6]. However, after that, the rupee became flexible, but there was no other nominal anchor. Figure 1 shows the volatility of exchange rate.

[3]Bhattacharya and Patnaik, 2014.
[4]See, RBI, 2004.
[5]Patnaik, 2005.
[6]Patnaik, 2007.

Figure 2 CPI inflation



As an outcome we have seen bouts of inflation in the range of 8-10%. Figure 2 shows that barring early years of 2000s, inflation has been consistently above the 5% mark till 2014. Several expert committees have emphasised the need for a clear objective of monetary policy. The *Report of the Committee on Capital Account Convertibility, 1997* noted:

> "There should be an early empowering of the RBI on the inflation mandate approved by Parliament and only Parliament should alter that mandate. Once the mandate is given, RBI should be given freedom to attain the target. There should be clear and transparent guidelines on the circumstances under which the mandate could be changed."

The *Report of The Advisory Group on Transparency in Monetary and Financial Policies, 2000* noted:

> "There is great comfort in a multiple objective approach in that precision is not required in defining the objectives and the RBI in turn does not have much accountability as it juggles with the almost impossible task of fulfilling contradictory objectives and as such accountability is blurred."

> "..with a view to moving towards a more transparent system it would be best to veer towards prescribing to the RBI a single objective"

The *Report of the High Powered Expert Committee on Making Mumbai an International Financial Centre* and *Report of the Committee on Financial Sector Reforms* also emphasised that the single objective of monetary policy of the RBI should be inflation control.[7] *Report of the*

[7] Ministry of Finance, Government of India (2007). *Report of the High Powered Expert Committee on Making Mumbai an International Financial Centre*. URL: `http://finmin.nic.in/mifc/mifcreport.pdf`; *Report of the Committee on Financial Sector Reforms* (2008). Tech. rep. Planning Commission of India. URL:

Expert Committee to Revise and Strengthen the Monetary Policy Framework, 2014 while presenting a discussion on potential nominal anchors also noted that inflation as a nominal anchor has advantages over other candidates. It tasks monetary policy with an unambiguous goal of achieving price stability upon which the private sector can anchor its expectations about future inflation. Inflation as a nominal anchor is simple and easily communicated by the public at large. Citing international evidence the report showed that adoption of inflation as a nominal anchor has contributed to reducing inflation volatility and has gained wide acceptance amongst developed and emerging economies.[8]

2.2 Measure of inflation target

Once we recognise that RBI's monetary policy should have inflation as a nominal anchor, the next question is what *measure* of inflation should be adopted as the target. There are several measures of inflation in India. These include the Wholesale Price Index, three measures of CPI inflation: CPI (Industrial Workers), CPI (Agricultural Labour) and CPI (Rural Labour); and the new CPI: CPI(Urban), CPI(Rural) and CPI-combined.

In the past, the Reserve Bank of India (RBI) has not systematically used either Consumer Price Index (CPI) or Wholesale Price Index (WPI) as the inflation measure. RBI often preferred to look at WPI over CPI because of its availability at high frequency, national coverage and availability of disaggregated data which facilitated better analysis of inflation[9]. However, at the same time there were statements made by Governors and publications in official documents stating that RBI followed a multiple indicator approach. For example, the Annual Policy Statement for the year 2010-11, (RBI) stated that the RBI monitors an array of measures of inflation, "*both overall and disaggregated components, in the context of the evolving macroeconomic situation to assess the underlying inflationary pressures.*[10]

Patnaik, Shah, and Veronese (2011) find that CPI represents consumer baskets better than the other measures. Further, CPI provides information on price movements in services. WPI should be de-emphasised in the discussion of inflation outcomes as WPI primarily represents tradable basket of goods, whose prices are determined in the international market outside the remit of monetary policy. Kirti Gupta and Fahad Siddiqui (2014) review the calculation of CPI and WPI indices and concludes that price data collection has been more systematic for CPI than for WPI. Prices for WPI are collected on voluntary basis while price data for CPI are collected by

http://planningcommission.nic.in/reports/genrep/rep_fr/cfsr_all.pdf.

[8]*Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework, 2014* (Jan. 2014). Tech. rep. Reserve Bank of India. URL: http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/ECOMRF210114_F.pdf.

[9]Mohanty, 2010.

[10]Similar views were also echoed in the Third Quarter Review of Monetary Policy 2008-09. RBI) Transcript of Governor's teleconference with Researchers and Analysts, RBI 2010)

investigators by visiting markets.

Internationally too, CPI is considered the most appropriate index for inflation targeting and is virtually in use in all the inflation targeting countries as their nominal target. According to Roger (2010), there were 26 inflation-targeting countries in 2010. U.S.A and Japan adopted inflation-targeting regime in 2012 and 2013 respectively. Table 1 shows the measure used as inflation target. It shows that though multiple inflation measures at monthly frequency are available across countries, CPI is the formal indicator of inflation on which monetary policy decisions are based. A number of studies looked at the current practice of inflation targeting countries and found that CPI or its derivative is most popular as an anchor because these indexes have the advantages of timeliness, availability, transparency to the public, rare revisions and credibility (Knight, Fay, and O'Reilly, 2002; Bloem, Armknecht, and Zieschang, 2002).

Not only is CPI popular with inflation targeting countries, it also acts as an anchor for monetary policy in non-inflation targeting economies which regard price stability as main objective of monetary policy. For example, in case of European Union, price stability is one of the main elements of the European Central Bank's monetary policy strategy. The measure of inflation is expressed in terms of a comparable consumer price index.[11]

CPI as a measure of inflation target also finds acceptance in expert committee reports. *Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework, 2014* recommended that "the RBI should adopt the new CPI (combined) as the measure of the nominal anchor for policy communication. The nominal anchor should be defined in terms of headline CPI inflation, which closely reflects the cost of living relative to other available metrics." The report highlighted a number of shortcomings of WPI as a metric of inflation in India. The report noted that WPI does not capture price movements in non-commodity producing sectors like services, which constitute close to two-thirds of economic activity in India. WPI often reflects large external shocks and is also subject to revisions.

2.3 Should food inflation be included in the target?

A related question faced by inflation-targeting central banks is whether food inflation should be included in the inflation metric. Food constitutes about 46% of the CPI basket in India. The high share of food in CPI poses a challenge in implementing inflation targeting. A significant strand of academic literature and cross-country experience provides us insights on this question. J. P. Walsh (2011) points that in low income countries setting, food inflation is more persistent than non food inflation and shocks to food inflation are propagated to non-food inflation. Under these conditions an exclusive focus on core inflation can mis-specify inflation. Studies estimate

[11] Article 1 of the Protocol No. 13 annexed to the *Treaty on European Union and Treaty on the Functioning of the European Union* states that, for the purpose of evaluating the price stability criterion: " Inflation shall be measured by means of the CPI on a comparable basis, taking into account differences in national definitions."

large second round effects from headline to core inflation. Large second-round effects stem from several factors, such as the high share of food in household expenditure and the role of food inflation in informing inflation expectations and wage setting (Anand, Ding, and Tulin, 2014).

However the counter-argument is that food prices are volatile. The volatility in food prices could be on account of weather conditions, increased cost to farmers due to high oil prices or speculation in commodity markets. As such, for monetary authorities, all these shocks are unanticipated or outside their remit[12]. A recent study tests the presence of second round effects from headline to core in the Indian context and finds that such effects are insignificant, especially during the last five years. The authors show that it is the headline inflation that tends to *revert* to core inflation rather than the other way around (Dholakia, 2018).

As Table 2 shows most of the countries target headline inflation. There are instances of countries which started with core inflation but later shifted to headline inflation as the target. As an example, the Bank of Thailand targeted core inflation from May 2000 onwards. However the public looks at what constitutes the cost of living. Headline inflation has been widely used as reference for saving decisions by households and for investment and price setting decisions by businesses. In January 2015, the Bank of Thailand moved to targeting headline inflation.[13]

2.4 Determination of inflation target

A key feature of an inflation targeting regime is an announcement by the government or the Central Bank, or both, stating that the Central Bank will strive to maintain price stability. This is measured by an inflation index, around a predefined numeric level. In majority of the countries inflation target is jointly determined by the Government and the Central Bank. In some cases the central bank sets the target (such as in Czech Republic and Sweden), and in few cases, Norway, South Africa and the United Kingdom, the target is set by the government (Hammond, 2012). This leads us to the next question on the form of the inflation target: Do the inflation targeting countries target a *range* or do they target a *point* of inflation?

2.5 Range or point target

Central banks with inflation targeting regimes define their target in terms of a) Point target b) Point target with tolerance bands and c) a range. Point targets with tolerance bands have the advantage of being precise and giving a clear signal about the central bank's objective. They also have the advantage of being symmetric which conveys the central bank's intention of

[12] Pourroy, Carton, and Coulibaly, 2016.

[13] See the website of the Bank of Thailand at `https://www.bot.or.th/English/MonetaryPolicy/MonetPolicyKnowledge/Pages/Target.aspx`

avoiding deflation as effectively as it avoids inflation (Hammond, 2012). Range targets convey the sense that central banks may have an imprecise control over inflation target. Range provides some flexibility in the conduct of monetary policy and allows for deviations from the target in the face of temporary shocks without frequent changes in the interest rate. A study shows that higher targets and wider target ranges are associated with high output and inflation volatility (Horvath and Mateju, 2011).

Countries often start with a range, after achieving a reasonably steady state of inflation, shift to point target. For example, Chile embarked on an inflation targeting regime when the inflation rate was 25%. After reaching a reasonably steady-state inflation rate in 1999, the Central Bank of Chile announced its inflation target as 2 per cent with a tolerance band of 1 per cent point in either direction, to be achieved over the time horizon of 2 years. Similarly when Philippines embarked on an inflation-targeting regime in 2002, the inflation target was defined in terms of a range (the target range for 2006-07 was 4%-5%). In 2006, the inflation target was respecified from a range target to a point target with a tolerance band of $+-1$ percentage point. Table 3 shows that most of the inflation targeting countries target a point with a tolerance band.

2.6 Reset or review of target

The time horizon for review of target depends on whether inflation is within the price stability range (Hammond, 2012). In 19 out of the 27 countries reviewed by Hammond (2012), the review of target happens over a medium term–defined as 2 years or above. Medium term horizons for review of inflation target allow for short-term deviations from the stated target when shocks hit the economy. The time horizon for review of target also depends on the length of the monetary policy transmission mechanism. Substantial lags in transmission imply that central bank is not able to affect inflation in the short run thus necessitating for a medium term horizon for review of target. There are countries where inflation target is reviewed every year. For example, in Thailand, the MPC and the Minister of Finance have proposed headline inflation target within the range of 1-3% as the new monetary policy target for 2020. The new target replaces the use of an annual average of headline inflation at 2.5 percent with a tolerance band of plus/minus 1.5 percentage points, which was in place since 2015.

2.7 What was done through the RBI Amendment Act of 2016?

The Preamble in the RBI Amendment Act of 2016, amended by the Finance Act of 2016 provides that the prime objective of monetary policy is to maintain price stability while keeping in mind the objective of growth. The RBI Amendment Act of 2016 set the inflation target in terms of the year-on-year change in the headline Consumer Price Index (CPI). The Act requires that the target is to be determined by the Central Government in consultation with the Reserve

Bank of India, once in every five years. Once the target is determined, it is to be notified in the Official Gazette. Through a notification dated 05th August, 2016, inflation target was set at 4% with an upper tolerance level of 6% and a lower tolerance level of 2%.

The inflation target was set in terms of the Consumer Price Index (CPI): Section 45ZA of the RBI Amendment Act laid down an inflation target in terms of the Consumer Price Index. The provision provides for a review of the target after five years. The provision stated:

> (1) The Central Government shall, in consultation with the Bank, determine the inflation target in terms of the Consumer Price Index, once in every five years
>
> (2) The Central Government shall, upon such determination, notify the inflation target in the Official Gazette.

The target was fixed in terms of headline inflation : Section 2(ii)(ci) stated:

> "*inflation means the year wise change in monthly Consumer Price Index expressed in terms of percentage*"

The inflation target was fixed at 4% with an upper and lower tolerance band : The notification dated 05th August, 2016 stated:

> In exercise of the powers conferred by Section 45ZA of the Reserve Bank of India Act, 1934, the Central Government, in consultation with RBI, has fixed the inflation target for the period beginning from the date of publication of the Gazette Notification (August 5, 2016) and ending on the March 31, 2021, as under:
>
> Inflation Target: Four per cent.
> Upper tolerance level: Six per cent.
> Lower tolerance level: Two per cent.

3 Institutional framework of decision making

Inflation-targeting requires decision about the policy rate. Most Central Banks around the world vest the decision-making powers of policy measures with a committee consisting of several individuals. New Zealand is the only inflation targeting country where the Central Bank Governor is formally the sole-decision maker. However, New Zealand is also unique in ensuring stricter accountability with explicit penalties written into the law for the Governor for failure to meet the pre-defined inflation target.[14] All other inflation-targeting Central Banks make monetary policy decisions through committees.

[14] See Section 53 of *Reserve Bank of New Zealand Act, 1989*

3.1 Decision-making process for monetary policy

Decisions can be broadly classified into two categories:

1. **Scientific decisions:** These decisions are independent of *human judgement*. Instead, the individual involved in the decision making has to ensure that an appropriate *process* is followed. As a result, the same result is achieved irrespective of the individual carrying out the process.

2. **Judgement based decisions:** In such decisions, two trained experts having absorbed the same information and facts could make different decisions. There is no standardised process of reaching a conclusion, but there is a role for *interpretation* and *human judgement* when making the final decision (See Box 1 for an example).

Monetary policy operates with a time lag, and there is an element of *judgement* regarding future output and inflation. Economic models provide a framework for thinking about the dynamic working of an economy, and how economic developments might affect future inflation.

Though processing econometric data requires training and expertise, the exercise is not standardised. Two experts processing the same information set can differ in their personal outlook on growth. Therefore, monetary policy decisions can be better characterised as *judgement based decisions* and, consequently, are better suited to a committee-based approach.

Decision making by a committee has four important strengths:

1. A diversity of views and perspectives is brought into the thinking process (as opposed to the views of one person);

2. The judgement of a group of experts is generally superior to the judgement of one person;

3. If appointments are staggered then only a small proportion of the committee would retire each year, thereby generating institutional stability (as opposed to the monetary policy changing sharply based on change of leadership, when the decision is made by an individual); and

4. When a decision maker has limited time, inflation target accountability diffuses and other goals are sometimes pursued. A committee would avoid such problems due to the long lags between monetary policy actions, and their impact upon the economy.

Similarly, creating an MPC with executive authority on monetary policy decisions is emphasised worldwide, including decisions on setting the policy rate or engaging in unconventional monetary policy measures (e.g. quantitative easing). Voting by the MPC draws on the well established concept of voting by a multi-person bench of judges. Box 1 discusses the relevance of a bench of judges in the interpretation of the constitution.

When the role of policy rate determination shifts from the Governor to the MPC, the monetary policy process becomes less personal. The extent to which these benefits are achieved depends

Box 1: Deciding Constitutional Questions

Interpreting any constitution involves human judgement. Even when trained and experienced judges carry out the function, different judges may come to different conclusions about the *meaning* of the same piece of text in the Constitution.

The makers of the Indian Constitution recognised this problem of human judgements and mandated in Article 145(3) of the constitution:

> *The minimum number of Judges who are to sit for the purpose of deciding any case involving a substantial question of law as to the interpretation of this Constitution or for the purpose of hearing any reference under Article 143 shall be five*

It is also important to note that in such judicial decisions, the court publishes the reasoning of the minority judges (i.e. the dissenting opinion). The dissenting opinion plays an important role in development of jurisprudence and sometimes may become the majority opinion in later judgements.

on the design of the MPC. Countries such as England, Thailand, South Africa, Brazil and South Korea, constituted a MPC during the late 90's and early 2000's. Israel, where the Governor was the sole decision-maker, constituted a Monetary Policy Committee with six members by passing a new law in 2010.[15]

In most inflation-targeting countries today, a committee with executive powers makes monetary policy decisions. An examination of 25 inflation targeting countries shows that the Central Bank Board (or Governor in case of New Zealand) makes decisions in 15 countries. 10 countries have constituted an MPC, separate from Central Bank board for monetary policy decisions (Table 4 and 5). The rationale behind creating a separate MPC is to delegate decisions to monetary policy experts. This is done by appointing experts in the fields of finance, economics, banking etc.

3.2 Design of the Monetary Policy Committee

The benefits of a committee-based approach depend on the design of the MPC. In many central banks worldwide, the MPC is constructed with a certain number of external members. These members are not employees of the Central Bank but experts in the field of economics, monetary policy. UK law mandates MPC appointments to be based on individuals' experience and expertise in monetary policy. Israel requires three out of six MPC members to be chosen from the public, with minimum requirements of a Master's degree and at least 10 years of experience in the monetary, financial or macroeconomic field.[16] In Thailand, the MPC consists of 7 members out of which 4 are external members with professional knowledge in the field of economics or banking.[17]

[15] See Section 15 of *Bank of Israel Law, 5770-2010*
[16] See Section 16 of *Bank of Israel Law, 5770-2010*
[17] See Section 28/6 of *Bank of Thailand Act, B.E. 2485*, as amended in 2008

3.2.1 International experience on the design of the MPC

As discussed above the purpose of constituting a separate decision-making entity for monetary policy is to benefit from the expertise of qualified professionals in the domain of monetary policy. The number of members in the MPCs in inflation-targeting countries vary from 5 to 12 members. The optimal committee size weighs the benefit of diversity of views in a larger committee against the risk of free-riding due to the cost of obtaining relevant information in a larger committee (Fujiki, 2005).

Out of the 10 countries with an MPC, 7 have constructed their MPC with a number of 'external' members (see Table 4). These members are not employees of the Central Bank, but experts in relevant fields, such as economics. External members have access to all economic data and research at the Central Bank, and form their independent judgement about how monetary policy should achieve its objective.

Even in countries where Central Bank Boards conduct monetary policy, external experts are appointed. Though these experts are members of Central Bank Board, their role is limited to ensuring they bring diverse opinions to the table; they have considerable independence from the Central Bank. For example, the Reserve Bank Board of Australia consists of 9 members. However, 6 of these members are experts from the public sphere and perform limited roles at the Central Bank.[18] Similar arrangements exist in Japan and Romania.[19]

As per the Bank of England, the purpose of external appointments is to "ensure that the mpc benefits from thinking and expertise in addition to that gained inside the Bank of England". Hansen and McMahon (2008) find that external members of the Bank of England's MPC bring private information to the committee, thereby enhancing its decision-making process. They also note that internal members are affected by institutional conditioning, and are less contrary. Moreover, all internal members are exposed to the same system of analysis when looking at the same information set, and are, therefore, likely to arrive at similar viewpoints.

Gerlach-Kristen (2009) argue that inclusion of outsiders legitimises the economic power yielded by the Central Bank, whose officials are not elected in a democratic fashion. Brooks, Harris, and Spencer (2007) find that external and internal members of the Bank of England's MPC react differently to changes in forecasted inflation and output. Thus, inclusion of outsiders in the MPC leads to deliberation and debate on a diverse spectrum of opinions and preferences. This increases the likelihood of achieving an optimal monetary policy decision.

[18]The *Reserve Bank Act, 1959* states that three members of the Board: Governor, the Deputy Governor and a member who is a staff member of the Reserve Bank service are *officials* within the meaning of the Act. See Section 7A of *Reserve Bank Act, 1959*

[19]See Article 16 of the *Bank of Japan Act, 1997* and Article 33(2) of the *Law of the National Bank of Romania*. The Article states that five out of the nine members of the National Bank of Romania's board are not the employees of the Bank.

The design of the MPC holds significance in view of the differential voting patterns of the internal and external members. What does the international experience tell us about the voting patterns of MPC members? There is a propensity for central bank employees to vote with the Governor. As an example, an analysis of the working of the UK MPC for the period June 1997 - April 2015 shows that internal members vote in agreement with the Governor's vote in 92.67% cases, while the external members vote in agreement in 81.9% cases. Over that period, in every MPC meeting, except two, the Governor's vote was the same as the majority vote.

In the US and in the European Central Bank, members are drawn from geographically organised, physically dispersed units. This physical dispersion of members, and their diverse institutional loyalties, helps increase diversity in the voting process when compared to the possibility of 'group-thinking'.[20] Effective monetary policymaking requires knowledge and input about regional differences. Each Reserve Bank Board President who serves as a member of the FOMC brings the regional perspective and the needs of businesses in the local regions. These information are then factored into monetary policy decisions by the FOMC.

3.2.2 Expert committees on MPC

Several committee reports in the past have advocated forming a separate MPC within the RBI. The Dr. Y.V Reddy Committee recommended setting up an MPC on the lines of the Board of Financial Supervision in RBI[21]. The Tarapore Committee recommended that a formal MPC should be set up for strengthening the institutional framework.[22] The *Report of the Committee on Financial Sector Reforms* noted that RBI's MPC should take a more active role in guiding monetary policy actions[23].

In March 2011, the Government of India set up the Financial Sector Legislative Reforms Commission (FSLRC), to review the entire Indian financial legal framework. The FSLRC submitted its report to the Government of India in March 2013[24], along with its draft legislation - the Indian Financial Code (IFC). The Commission recommended setting up an MPC where decisions will be made on a majority voting basis, with a veto power for the Governor in exceptional circumstances. The committee envisaged the following composition for the MPC:

[20]The Federal Open Market Committee of the US consists of twelve members: the seven members of the Board of Governors; the president of the Federal Reserve Bank of New York; and 4 of the remaining 11 Reserve Bank presidents, who serve one-year terms on a rotating basis.

All 12 of the Reserve Bank presidents attend FOMC meetings and participate in FOMC discussions, but only the presidents who are Committee members at the time may vote on policy decisions.

[21]Standing Committee on International Standards and Codes (2002). *Report of the Standing Committee on International Standards and Codes*. Tech. rep. Reserve Bank of India.

[22]Committee on Fuller Capital Account Convertibility (2006). *Report of the Committee on Fuller Capital Account Convertibility*. Tech. rep. Reserve Bank of India.

[23]*Report of the Committee on Financial Sector Reforms* (2008). Tech. rep. Planning Commission of India. URL: http://planningcommission.nic.in/reports/genrep/rep_fr/cfsr_all.pdf.

[24]See *Report of the Financial Sector Legislative Reforms Commission*

1. The RBI Governor;
2. One executive member of the Board of the Reserve Bank;
3. Two members appointed by the Central Government in consultation with the Governor; and
4. Three members appointed by the Central Government.

The Urjit Patel *Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework, 2014* recommended a significantly different composition for the MPC:

1. The RBI Governor;
2. One Deputy Governor in charge of monetary policy;
3. One Executive Director in charge of the monetary policy; and
4. Two external members decided by the Governor and the Deputy Governor.

This committee recommended a casting vote for the Governor in situations in situations where one of the members of the MPC is absent and in which voting is equally divided.[25]

3.3 What was done through the RBI Amendment Act of 2016?

The RBI Amendment Act of 2016 provided for a statutory framework for a Monetary Policy Committee. As per the provisions of the amended Act, the MPC consists of six members: three internal and three external. The internal members comprise of the Governor of the RBI as the Chairperson, the Deputy Governor incharge of monetary policy and one officer of the RBI to be nominated by the Central Board of the RBI. The three external members are to be appointed by the Central Government. The law requires that the external members should have knowledge and experience in the field of economics, or banking or finance or monetary policy. The RBI Amendment Act entrusted the MPC with the task of fixing the policy rate required to achieve the inflation target.

Constitution of monetary policy committee : Section 45ZB(1): stated

> The Central Government may, by notification in the Official Gazette, constitute a Committee to be called the Monetary Policy Committee of the Bank.

Design of the MPC : Section 45ZB(2) gave the composition of the MPC:

> The Monetary Policy Committee shall consist of the following Members, namely :
> (a) the Governor of the Bank: Chairperson, ex officio;

[25]See, *Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework, 2014* (Jan. 2014). Tech. rep. Reserve Bank of India. URL: http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/ECOMRF210114_F.pdf, page 64.

(b) Deputy Governor of the Bank, in charge of Monetary Policy: Member, ex officio;
(c) one officer of the Bank to be nominated by the Central Board: Member, ex officio; and
(d) three persons to be appointed by the Central Government.

Function of the MPC : Section 45ZB(3) stated:

> The Monetary Policy Committee shall determine the Policy Rate required to achieve the inflation target.

Eligibility of external members : Section 45ZC(1) states: 45ZC. (1) The Members of the Monetary Policy Committee referred to in clause (d) of sub-section (2) of section 45ZB shall be appointed by the Central Government from amongst persons of ability, integrity and standing, having knowledge and experience in the field of economics or banking or finance or monetary policy..

3.4 Appointment process of MPC members

The Central Bank is ultimately accountable to the Central Government. The Central Government, therefore, plays a key role in appointing the members of the MPC or the Central Bank Board. The Governor, Deputy Governors and Board members are usually appointed through a governmental process. MPC appointment for external members in most of the inflation-targeting countries is also done through a governmental process (the exception is Thailand, where 4 external members are appointed by the Central Bank Board, as shown in Tables 4 and 5). The appointment of external experts by the Government is done through a selection process that ensures members are completely independent of the Government.

3.5 Tenure and terms of MPC members

A critical aspect for strengthening the institutional autonomy of an MPC is the length and timing of members' terms in office. A wide literature[26] suggests that long terms for senior officials, and staggered appointments (such that a member's tenure does not coincide with the appointing Government's), help to strengthen the independence of the committee. Staggering members' terms fosters continuity in the monetary policy stance of Central Banks. It becomes an essential tool to guard against the short-term political influence of the government and also permits renewal of views and ideas if there is a prolonged, fundamental conflict between the Central Bank and the Central Government.

Another key issue for consideration is the reappointment provision for MPC members. Some countries explicitly put restrictions on the reappointment process of MPC members. The ra-

[26]See "Central-bank independence, economic behavior, and optimal term lengths", "Policy boards and policy smoothing", Bank for *Issues in the Governance of Central Banks*

tionale behind prohibiting reappointment of members is that it removes the incentive for reappointing authorities to exact favours from the outgoing member as part of a *quid pro quo*.

3.6 What was done through the RBI Amendment Act of 2016?

The RBI Amendment Act of 2016 laid down the process for appointment of external members of MPC. The external members shall be appointed by the Central government based on the recommendations of the Search-cum Selection Committee. The Search-cum-Selection committee comprises of the Cabinet Secretary as the Chairman, Governor of the RBI or his representative, Secretary of the Department of Economic Affairs and three experts in the field of economics or banking or finance or monetary policy to be nominated by the Central Government. The external members of the MPC shall be appointed for a period of four years and shall not be eligible for reappointment.

Appointment process of external MPC members: Section 45ZC(2) stated:

> The Members of the Monetary Policy Committee referred to in clause (d) of subsection (2) of section 45ZB shall be appointed by the Central Government on the recommendations made by Search-cum-Selection Committee consisting of the following members, namely: (a) Cabinet Secretary: Chairperson; (b) Governor of the Reserve Bank of India or his representative (not below the rank of Deputy Governor): member; (c) Secretary, Department of Economic Affairs:member; (d) three experts in the field of economics or banking or finance or Monetary policy to be nominated by the Central Government:members.
>
> (3) While selecting the Members of the Monetary Policy Committee, the Search-cum-Selection Committee shall follow such procedure as may be prescribed by the Central Government.

Terms and conditions of appointment : Section 45ZD(1) stated:

> The Members of the Monetary Policy Committee appointed under clause (d) of subsection (2) of section 45ZB shall hold office for a period of four years and shall not be eligible for re-appointment.

4 Functioning of the MPC

This section discusses the key features of the functioning of the MPC.

4.1 Decision-making process

In most of inflation-targeting central banks, the policy rate is determined through voting on policy rate. In 18 of the 26 central banks analysed by Hammond (2012), the policy rate is determined by majority voting. In 8 central banks, policy rate is determined through consensus. In New Zealand, the Governor is the sole decision maker. In the event of a tie, the Governor usually has the casting vote in 12 of the 26 countries.

4.2 What was done through the RBI Amendment Act of 2016?

The RBI Amendment Act of 2016 requires that the policy rate is determined by voting by the members of the MPC. The Act requires that the policy rate be decided by a majority of votes by the members present in the meeting. Each member has one vote. In case of equality of votes, the Governor will have a casting vote.

Subsection (7) and (8) of section 45ZI stated:

> (7) Each Member of the Monetary Policy Committee shall have one vote.
>
> (8) All questions which come up before any meeting of the Monetary Policy Committee shall be decided by a majority of votes by the Members present and voting, and in the event of an equality of votes, the Governor shall have a second or casting vote.
>
> (10) The vote of each Member of the Monetary Policy Committee for a proposed resolution shall be recorded against such Member.
>
> (11) Each Member of the Monetary Policy Committee shall write a statement specifying the reasons for voting in favour of, or against the proposed resolution.

4.3 Frequency of meetings

The MPC meetings to decide on the policy rate are usually held between 8-12 times a year (Hammond, 2012). For example, the Bank of England MPC meets eight times a year (roughly once every six weeks). To impart greater predictability to monetary policy decisions, the meetings schedule is usually published at the start of the year. In the past few years, a number of central banks with higher frequency of MPC meetings have reduced the number of times, the MPC meets. The Bank of England reduced the number of meetings from 12 to 8, starting 2015. The Bank of Japan reduced the number of meeting from 14 to 8.

A review of the Bank of England's MPC functioning was commissioned by the Bank in April 2014 under Kevin Warsh, a former member of the Board of Governors of the Federal Reserve System in the U.S. One of the recommendations of the Review was to reduce the frequency of the MPC meetings. The rationale for reducing the frequency was meetings was that changes in economic outlook requires persistent changes in data, that may not be visible on a monthly basis. A four week period may not be sufficient to change economic assessments. In addition, frequent meetings heightens market expectations and prompts the MPC members to refine their economic assessments more frequently than what would prudently be driven by persistent changes in data (Warsh, 2014).

4.4 What was done through the Amendment Act of 2016?

The RBI Amendment Act of 2016 laid down the minimum number of times the MPC must meet in a year. It requires that MPC must meet atleast four times in a year. The Act requires the RBI to publish the schedule of the MPC meetings for a year. The schedule must be published at least one week before the first meeting in that year.

Section 45ZL states:

> (1) The Bank shall organise atleast four meetings of the Monetary Policy Committee in a year.
>
> (2) The meeting schedule of the Monetary Policy Committee for a year shall be published by the Bank at least one week before the first meeting in that year.

4.5 Transparency

Establishing an efficient communication strategy for monetary policy actions is a key prerequisite for successfully operating an inflation-targeting regime. Inflation-targeting countries have adopted specific measures to efficiently communicate their actions to the Central Government, as well as the general public. Open letters and parliamentary hearings are the main instruments of accountability to parliament. Open letters are usually written by the Governor on behalf of the MPC, in the event of missing the inflation target. Parliamentary hearings, wherein the Governor appears before parliament and provides testimony on monetary policy, is another accountability mechanism practised in some countries (Hammond, 2012).

Public accountability is usually achieved through regular publications and reports. Publications including forecasts and outlook for growth and inflation, analysis of prevailing and future economic conditions and key risk factors, are regularly published by Central Banks. Table 6 presents an overview of the transparency and accountability instruments.

1. *Inflation report*: The main tool for communicating inflation forecasts and analyses are inflation reports, which explain the main motivations behind monetary policy decisions, and is published by every inflation-targeting Central Bank (Table 6).

2. *Minutes of the meeting*: Another key document published by the MPC is the minutes of policy-making meetings. Most of the 25 inflation targeting countries publish the minutes

of the meeting, usually with a lag of a few weeks. Bank of England announced that from August 2015, the MPC minutes that were earlier published with a two-week lag, will be published when the monetary policy decisions are announced. The move was taken with a view of allowing the markets to make informed choices about the policy stance and enhance effectiveness of monetary policy communication.

3. *Resolution on policy rate*: The policy measures undertaken by MPCs are released immediately after the meeting, by means of a press release or a note. This practice is followed consistently across all Central Banks. Additionally, most MPCs hold press conferences to communicate the monetary policy decisions.

4.6 What was done through the RBI Amendment Act of 2016?

The RBI Amendment Act of 2016 introduced a number of instruments to strengthen transparency in the conduct of monetary policy.

1. The RBI Amendment Act requires that the resolution adopted by the Monetary Policy Committee must be published after the meeting of the MPC.
2. As per the provisions of the RBI Amendment Act, RBI must publish minutes of the MPC meeting on the fourteenth day after every meeting. The minutes must contain the resolution adopted in the meeting, the vote of each member and a statement by each member specifying the reasons for voting in favour of, or against the proposed resolution.
3. The Act requires the RBI to publish a report on monetary policy twice a year. The report should outline the sources of inflation and short-medium term forecasts of inflation (forecasts for the period between six to eighteen months from the publication of the report.)
4. In the event of failure to achieve the inflation target, the Act lays down that the RBI will inform the Central Government, the reasons for failure to achieve the inflation target, the remedial actions it proposed to take and an estimate of the time within which the inflation target shall be achieved after the implementation of the remedial actions.

Publication of resolution after the conclusion of every meeting: Section 45ZK states:

> The Bank shall publish, after the conclusion of every meeting of the Monetary Policy Committee, the resolution adopted by the said Committee;

Publication of minutes of the meeting on the fourteenth day after every meeting: Section 45ZL states:

> The Bank shall publish, on the fourteenth day after every meeting of the Monetary Policy Committee, the minutes of the proceedings of the meeting which shall include the following, namely:

(a) the resolution adopted at the meeting of the Monetary Policy Committee;
(b) the vote of each member of the Monetary Policy Committee, ascribed to such member, on resolutions adopted in the said meeting; and
(c) the statement of each member of the Monetary Policy Committee under subsection (11) of section 45ZL on the resolutions adopted in the said meeting.

Monetary Policy Report: Section 45ZM states:

(1) The Bank shall, once in every six months, publish a document to be called the Monetary Policy Report, explaining
(a) the sources of inflation; and
(b) the forecasts of inflation for the period between six to eighteen months from the date of publication of the document

Failure to achieve inflation target: Section 45ZN states that:

Where the Bank fails to meet the inflation target, it shall set out in a report to the Central Government
(a) the reasons for failure to achieve the inflation target;
(b) remedial actions proposed to be taken by the Bank; and
(c) an estimate of the time-period within which the inflation target shall be achieved pursuant to timely implementation of proposed remedial actions

5 Assessment of inflation

An inflation-targeting regime requires an assessment of inflation in the medium-term to decide on the policy rate. An important input in the decision-making process is the large set of economic indicators as well as the short-term to medium-term forecasts of inflation and economic growth. Useful economic models should aid the MPC and the central bank in assessing the dynamics of the economy. No single model can provide accurate insights, so MPC and central banks stress on using a variety of models to bolster their policy analysis and forecasts in the formulation of monetary policy.[27]

6 Next steps

The preceding sections describe the key changes introduced to the *Reserve Bank of India Act, 1934* to operationalise an inflation-targeting framework. In this section we present a discussion of some additional tenets of the inflation-targeting framework seen in other countries.

[27] As an example, the Bank of Thailand uses the Bank of Thailand's Macroeconometric model, small semi-structural model and Dynamic Stochastic General Equilibrium Model (DSGE)

6.1 The role of the Ministry of Finance: Non-voting member

There are important issues of coordination between monetary and fiscal policy. Many central banks worldwide have the concept of a non-voting representative from the Treasury who attends meetings, expresses the views of the Ministry of Finance, and participates in the discussions. As an example at the Bank of England MPC, a representative from the Treasury also sits with the Committee at its meetings. The Treasury representative can discuss policy issues but is not allowed to vote. The purpose is to ensure that the MPC is fully briefed on fiscal policy developments and other aspects of the Government's economic policies, and that the Chancellor is kept fully informed about monetary policy. The *Bank of Japan Act, 1997* also provides for attendance of Government representatives at Board meetings for monetary control matters[28].

The role of a government representative in a non-voting capacity forms an important channel of communication between the Central Government and the MPC. A lack of coordination between the Central Government and the MPC could emerge due to insufficient knowledge about each other's actions; resulting in disorganisation between the monetary and fiscal policies (Buiter, 2000). This lack of coordination can be due to uncertainty about how each party views the exogenous economic environment, and strategic uncertainty about how one party will respond to the actions of the other party.[29]

Monetary policy in India has often been commented upon by Finance Ministers and ministry officials in the media. This creates a public perception about a discord or lack of coordination between the two (The Economic Times, 2017; Bandyopadhyay, 2017; Surabhi, 2017). At this early stage of the framework, this can create uncertainty about the framework. A government non-voting member is a way to coordinate and yet not interfere. However government needs to be cautious on not conveying the impression that this is to reduce the independence of the central bank.

To improve transparency in monetary policy decision-making and to sustain public confidence, India should consider releasing the transcripts of the monetary policy meetings with a sufficient time-lag.

6.2 Doing better on accountability: Publication of transcript of meetings?

Many countries are revisiting the transparency and accountability framework of inflation-targeting. In 2014, the Bank of England commissioned a review to analyse its transparency and account-

[28] See Article 19 of the *Bank of Japan Act, 1997*

[29] A few countries, such as in Philippines, have Government nominees in a voting capacity. See Section 6(b) of the *The New Central Bank Act*.

ability framework under Kevin Warsh, a former member of the Board of Governors of the US Federal Reserve (referred to as the Warsh review.)

Warsh recommended that "Day 2" transcripts of MPC meetings (when members explain and justify their policy decision) be made public after a lag of 5-10 years. This would improve the accountability of individual MPC members. Warsh also argued in favour of more transparency about briefing given to the MPC members by the Bank staff a day before the voting on policy rates. In response, the Bank announced that it would publish written transcripts of Day 2 of MPC meetings. These new arrangements have come into effect from March 2015 (Dominic Webb, 2015).

The *Bank of Japan Act, 1997* also provides for publication of the meeting transcripts.[30] Similar requirements are also seen in the U.S FOMC.

6.3 Staggered appointment for MPC members

Staggering appointments, such that a member's tenure does not coincide with the appointing Government's, helps to strengthen the independence of the committee.[31] Staggering members' terms fosters continuity in the monetary policy stance of Central Banks. It becomes an essential tool to guard against the short-term political influence of the government and also permits renewal of views and ideas if there is a prolonged, fundamental conflict between the Central Bank and the Central Government. The staggering of terms has been implemented by almost all inflation targeting countries. In most countries, special provisions in the Central Bank laws have been made to ensure staggered appointments. Staggered appointments can be provided for in several ways:

1. Shortened terms for the first appointments to the MPC: This implies that in a newly constituted MPC, some members will serve shorter terms than statutory tenures. This ensures that going forward, only *some* members will complete their tenure at a fixed frequency; and the Central Government in power at that point, can only replace those members and not the entire committee. First appointments to the Bank of England's MPC were made in a similar fashion (International Settlements, 2009).[32] In order to preserve this system of staggered appointments, vacancies arising from non-completion of terms should be filled only for the remaining term.

2. Special provisions in the law to implement staggered appointments by making it mandatory to appoint new members every 1-2 years.

3. The law can specify the timing of appointments relative to the electoral cycle.

[30] See Article 20(2) of the *Bank of Japan Act, 1997*
[31] See Waller and C. E. Walsh (1996), Waller (2000), Bank for International Settlements (2009)
[32] Also see Section 6(c) of the *The New Central Bank Act*

7 Conclusion

The adoption of an inflation targeting regime has been one of the most fundamental reforms in the Indian financial sector. The RBI Amendment Act of 2016 established a modern monetary policy framework with a clear objective of achieving price stability while keeping in mind the objective of growth and a committee-based approach to decision-making. This paper describes the key elements of the inflation targeting framework. The inflation target was set in terms of the year-on-year change in CPI. The target was set at 4% with an upper and lower tolerance level of 2%. The RBI Amendment Act laid down a six member MPC: comprising of three internal and three external members. The external members are appointed by the Central Government for a period of four years. The task of the MPC is to fix the policy rate to achieve the inflation target. The policy rate is determined by a majority of votes by members present in the meeting. The Governor has a casting vote in the event of equality of votes.

With more than four years passed since the inception of the modern monetary policy framework, the paper offers some suggestions which if incorporated could enhance the effectiveness of the monetary policy regime. A non-voting representative from the Ministry of Finance in the MPC meetings, publication of transcripts of MPC meetings with a sufficient time lag and staggered appointment for MPC members are some of the next steps that could strengthen the conduct of the inflation targeting regime.

8 Appendix

8.1 Inflation targets

Table 1 Inflation target

Country	Target	Price Indices available
Armenia	CPI	
Guatemala	CPI	
Ghana	CPI	
Turkey	CPI	PPI(domestic), CPI, Export and Import unit value indexes
United Kingdom	CPI	PPI, CPI, CPI-Core, CPI-housing, Retail price index,XPI, MPI
Israel	CPI	CPI, XPI, MPI
Iceland	CPI	CPI
Poland	CPI	CPI
Hungary	CPI	CPI
South Korea	CPI	PPI, CPI, CPI-Core, XPI, MPI
Thailand	CPI	PPI, CPI, CPI-Core, XPI, MPI
Australia	CPI	PPI, CPI, XPI, MPI
Serbia	CPI	CPI
Czech Republic	CPI	CPI
Chile	CPI	CPI, Core-CPI, XPI, MPI
Norway	CPI	CPI
Colombia	CPI	PPI, CPI
Philippines	CPI	PPI, CPI, CPI-core
Peru	CPI	CPI
Sweden	CPIF	CPI
New Zealand	CPI	Producer input price index, CPI, CPI-core, XPI, MPI
Canada	CPI	Industrial PPI, CPI, Export and Import unit value index
South Africa	CPI	PPI(final manufactured goods), XPI, MPI
Brazil	CPI	PPI, IPCA (Broad national CPI), XPI, MPI
Indonesia	CPI	CPI, WPI, WPI-exports, WPI-imports
Mexico	CPI	PPI, CPI, CPI-Core, XPI, MPI
Romania	CPI	CPI
U.S.A	PCE	CPI, PPI
Japan	CPI	

Source: *State of the art of inflation targeting*, and *Central Bank acts and websites*

8.2 Headline or core inflation?

Table 2 Target measure of inflation (H stands for headline inflation)

Country	Target set by	Target measure
Armenia	Government and Central Bank	H CPI
Ghana	Government and Central Bank	H CPI
Guatemala	Central Bank	H CPI
Turkey	Government and Central Bank	H CPI
United Kingdom	Government	H CPI
Israel	Government and Central Bank	H CPI
Iceland	Government and Central Bank	H CPI
Poland	Central Bank	H CPI
Hungary	Central Bank	H CPI
South Korea	Central Bank (with Government)	H CPI
Thailand	Government and Central Bank	H CPI
Australia	Government and CB	H CPI
Serbia	Central Bank in cooperation with Government	H CPI
Czech Republic	Central Bank	H CPI
Chile	Central Bank	H CPI
Norway	Government	H CPI
Colombia	Central Bank	H CPI
Philippines	Government and Central Bank	H CPI
Peru	Central Bank	H CPI
Sweden	Central Bank	H CPI
New Zealand	Government and Central Bank	H CPI
Canada	Government and Central Bank	H CPI
South Africa	Government	H CPI
Brazil	Government and Central Bank	H CPI
Indonesia	Government and Central Bank	H CPI
Mexico	Central Bank	H CPI
Romania	Government and Central Bank	H CPI
Japan	Central Bank	H CPI
U.S.A	Central Bank	PCE

Source: *State of the art of inflation targeting*, and *Central Bank acts and websites*

8.3 Point versus band target

Table 3 Target fixation: Point versus band

Country	Separate MPC	Current inflation target	Additional information
United Kingdom	Yes	2%	From meeting on November 2017.
Israel	Yes	1-3%	Target set in terms of annual inflation
Iceland	Yes	2 % +/- 1%	From 27 March 2001, a formal inflation target was adopted.
Poland	Yes	2.5% +/-1	Since 2004, same target
Hungary	Yes	3% +/-1	Continuous target since March 2015
South Korea	Yes	2%	Mid term horizon
United States	Yes	2%	
Thailand	Yes	2.5% +/- 1.5	Annual average target
Australia	No	23 %	Medium-term average rather than as a rate (or band of rates) .
Serbia	No	3% 1.5%	To be achieved by December 2020, medium term target.
Japan	No	2%	Adopted in January 2013.
Czech Republic	No	2%+/-1	
Chile	No	3%+/-1	
Norway	No	2.50%	
Colombia	No	3%+/-1	
Philippines	No	3%+/-1	Target set for 2 years
Peru	No	2%+/-1	
Sweden	No	2%	Also use a variation band that stretches between 1-3 % to capture CPIF outcomes.
New Zealand	No	2% +/- 1%	Published in Policy Trade Agreement signed in November 2017
Canada	No	2% +/- 1%	From October 2016 December 2021.
South Africa	Yes	3-6%	
Brazil	Yes	4.5% +/-1.5	Target set for calendar year
Indonesia	No	4% +/-1	
Mexico	No	3% +/-1	
Romania	No	2.5% +/-1	
Turkey	Yes	5%	

Source: *Central Bank acts and websites*

8.4 Countries with separate MPC

Table 4 Countries with separate mpcs

	Country	Separate mpc	Internal members	External members	Externals appointed by	Majority external
1.	United Kingdom	Yes	5	4	Government	No
2.	Israel	Yes	3	3	Government	Equal
3.	Iceland	Yes	3	2	Government	No
4.	Poland	Yes	1	9	Government	Yes
5.	Hungary	Yes	3	4	Government	Yes
6.	South Korea	Yes	2	5	Government & Central Bank	Yes
7.	Thailand	Yes	3	4	Central Bank	Yes
8.	United States	Yes	12	0	-	No
9.	South Africa	Yes	8	0	-	No
10.	Brazil	Yes	8	0	-	No

Source: Individual Central Bank acts and websites

8.5 Countries without separate MPC

Table 5 Countries without separate mpcs

	Country	Decision-making body	Number of members	Appointment by
1.	New Zealand	Governor	1	Government
2.	Canada	Governing Council	6	Central Bank
3.	Sweden	Executive Board	6	Government
4.	Indonesia	Board of Governors	6	Government
5.	Mexico	Board of Governors	5	Government
6.	Serbia	Executive Board	5	Government
7.	Chile	Board	5	Government
8.	Australia	Reserve Bank Board	9	Government
9.	Japan	Policy Board	9	Government
10.	Czech Republic	Bank Board	7	Government
11.	Peru	Board of Directors	7	Government
12.	Romania	Board of Directors	9	Government
13.	Norway	Executive Board	7	Government
14.	Colombia	Board of Directors	7	Government
15.	Philippines	Monetary Board	7	Government

Source: Individual Central Bank acts and websites

8.6 Transparency mechanisms

Table 6 Cross-country overview of transparency mechanism

	Country	Open Letter	Parliamentary Hearings	Minutes	Inflation Report
1.	United Kingdom	Yes	Yes, three per year	Yes, simultaneously	Yes
2.	Israel	No	Yes, twice yearly	Yes, after two weeks	Yes
3.	Iceland	Yes	Yes, twice yearly	Yes, simultaneously	Yes
4.	Poland	No	No	Yes, after three weeks	Yes
5.	Hungary	No	Yes, once a year	Yes, simultaneously	Yes
6.	South Korea	No	Yes	Yes, after six weeks	Yes
7.	United States		Yes, at least twice per year	Yes, after three weeks	Yes
8.	Thailand	Yes	No	Yes, after two weeks	Yes
9.	Australia	No	Yes, twice yearly	Yes, after two weeks	Yes
10.	Serbia	Yes	No	No	Yes
11.	Japan	No	Yes	Yes, 3 days after the next meeting	Yes
12.	Czech Republic	No	No	Yes, after eight days	Yes
13.	Chile	No	Yes, four times per year	Yes, after two weeks	Yes
14.	Norway	No	Yes	No	Yes
15.	Colombia	No	Yes, twice yearly	Yes, after two weeks	Yes
16.	Philippines	Yes	No	Yes, after four weeks	Yes
17.	Peru	No	Yes, once a year	No	Yes
18.	Sweden	No	Yes, twice yearly	Yes, after two weeks	Yes
19.	New Zealand	Other	Yes, four times a year	No	Yes
20.	Canada	No	Yes, twice yearly	No	Yes
21.	South Africa	No	Yes, atleast three per year	No	Yes
22.	Brazil	Yes	Yes, six per year	Yes, after eight days	Yes
23.	Indonesia	No	No	No	Yes
24.	Mexico	No	Yes, not regular	Yes, after two weeks	Yes
25.	Romania	No	No	No	Yes

Source: Issues in the Governance of Central Banks*, Individual Central Bank acts and websites*

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