RBI's Working Paper on "Measuring Trend Inflation in India"- A summary

India adopted the Flexible inflation targeting framework in 2016 after the recommendations of Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework (Jan 2014) (or as is commonly known the Urjit Patel Committee Report) were implemented. The study of inflation and trend inflation has acquired greater importance since India adopted a flexible inflation targeting (FIT) framework. The adoption of Flexible Inflation targeting was officially adopted by the Central Government and the RBI by signing an agreement (MoU) citing the inflation target as the Consumer Price Index(Combined) CPI-C at 4% for a period of 5 years from the date of adoption, i.e. from February 2016-February 2021. In the first phase it was prescribed that the RBI should achieve an inflation target of 6% in 2016, and thereafter maintain the inflation target at 4% for all subsequent years up to 2021.The onus of publishing the operating targets and establishing the operating procedure of monetary policy through which the operating target will be achieved lies on the RBI.

The agreement on the monetary policy framework clearly lays down the clause for failure to maintain the inflation target. If inflation is more than 6% for three consecutive quarters for the financial year 2015-16 and all subsequent years or it is less than 2% for three consecutive quarters in 2016-17 and all subsequent years, the Central Bank would be deemed to have failed to maintain the target. Further, if the Central Bank fails to maintain the target, it has to report the reasons for its failure and also furnish the remedial actions to be taken by it and also give an estimate of the time period within which the target would be achieved pursuant to timely implementation of proposed remedial actions[1].

RBI had recently published a study as part of its Working Paper Series (No 15 of 2020) titled Measuring Trend Inflation in India co-authored by Dr. Michael Debabrata Patra, Deputy Governor, Reserve Bank of India and Mr.Harendra Kumar Behera, Director, Department of Economic Analysis and Policy (DEAP), Reserve Bank of India. The Reserve Bank of India (RBI) introduced the RBI Working Papers series in March 2011. These papers present research in progress of the staff members of RBI and the views expressed in these papers are those of authors and not that of RBI.

The working paper discusses the nuances of inflation targeting in India and the consequences of adopting flexible inflation targeting in a country like India. The authors find that the regime switch from a high inflation regime to a low inflation regime has coincided with the monetary policy regime switch from a multiple indicator approach to Flexible inflation targeting (FIT). The study also states that trend inflation is now stabilizing at 4.1-4.3% and it would be advisable to keep the inflation target at 4%. This assumes relevance as the inflation target is due for a review by March 2021.

[1] Agreement on Monetary Policy Framework

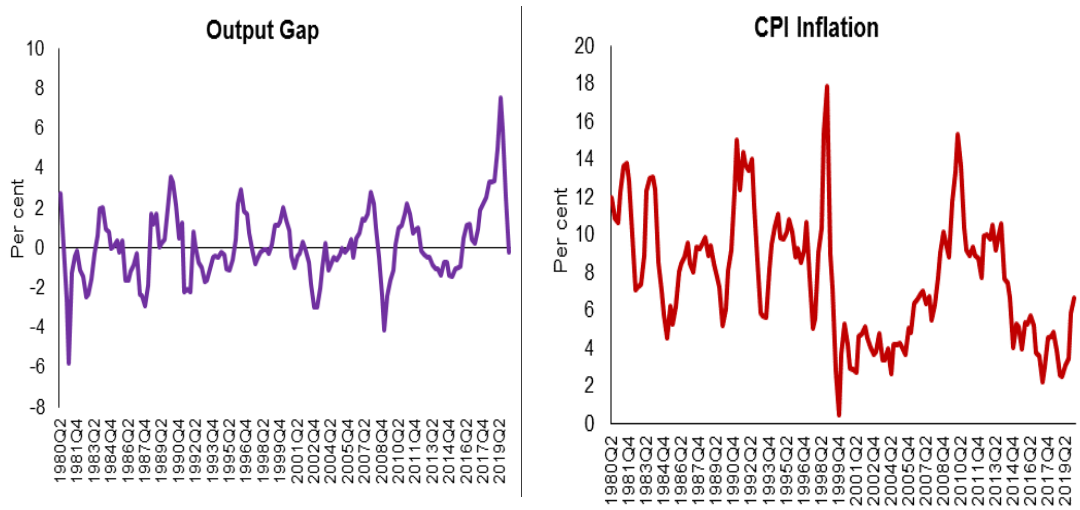
The essence of the study is the question: What is the probability that trend inflation in India is 4%? In other words, is the choice of the inflation target consistent with its trend? The findings of the research point to a steady decline in trend inflation since 2014 to 4.1-4.3% before the COVID-19 crisis, and hence it emphasizes the need to maintain the inflation target at 4%. This is contextual to the recent debate around the possible revision of the inflation target and the consequent revision or relaxation of the inflation tolerance bands of +/-2% as the inflation target, which is due for a review by the end of FY21. As the authors emphasize, trend inflation provides a metric to gauge the appropriate level of the inflation target going forward. The current inflation targeting regime is to end on 31st March 2021. In this context the study suggests no change to the inflation target as of now.

The study also highlights three insights related to trend inflation:

1. The level and variability of trend inflation indicate how anchored inflation expectations are
2. Trend Inflation is a valuable gauge of the appropriateness of the monetary policy stance and the necessity or otherwise of additional monetary policy actions to achieve steady state inflation
a. Is the inflation target consistent with trend inflation which is, itself, time varying?
3. Trend inflation provides a centering point for the evaluation of inflation forecasts over various time periods and, this in turn, can usefully inform the setting of monetary policy.

The authors point out that, measuring economic variables in the recent past has been more of an empirical exercise and trend inflation measurement is no exception. Trend inflation acts as a consistency check on the setting of inflation targets. Unhinging inflation and more importantly, inflation expectations, either on the higher or the lower side entails costs to the economy, for example if the Central Bank persists in setting the inflation target too high above the trend inflation then this might unhinge inflation expectations and flatten the aggregate supply curve. This would make monetary policy less effective in stabilizing the economy. These implications or costs have to be compared to the advantages of avoiding a zero lower bound on interest rates that higher inflation targets seek to address. For example, as pointed out by the authors, the recent debate about the appositeness of the level of inflation target at 4% as against the current 2% in the US is relevant to the discussion.

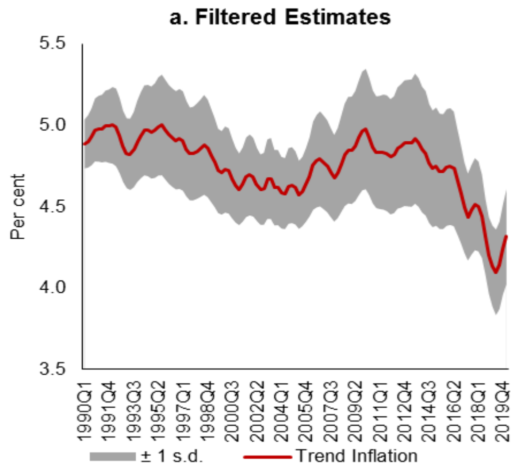
The authors have used the quarterly GDP data since 1996, to estimate the output gap and constructed the inflation series by averaging the monthly CPI data for a quarter to produce quarterly data on inflation. The authors observe that the output gap had slipped into negative territory from January-March 2020 and inflation seems to experience milder fluctuations especially after the adoption of flexible inflation targeting.

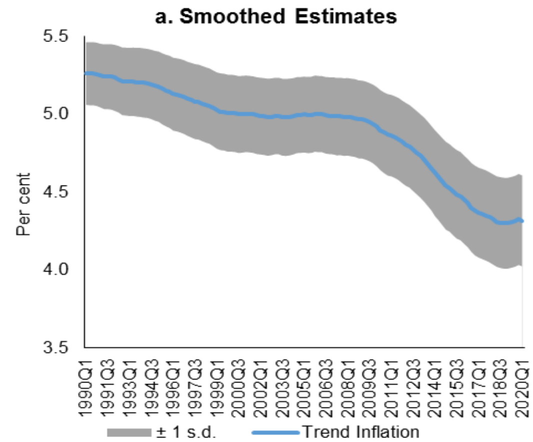


Source: Measuring Trend Inflation in India –RBI Working Paper Series (DEPR):15/2020

As the paper points out, modern monetary policy framework of most central banks has been based on the New Keynesian Framework where trend inflation is at the core of the economic structure of the model. The model is typically specified in an inflation gap formulation in which inflation gap means deviations of actual inflation from a time varying trend rather than from a constant mean. Inflation persistence is another important aspect in the monetary policy function to draw appropriate responses in terms of setting of monetary policy. Persistence is explained as the tendency of inflation to converge slowly to its trend. Recent research on the subject identifies four sources of inflation as intrinsic, extrinsic, expectations based and monetary policy induced. Modern evidence points to the fact that a substantial portion of inflation persistence in India was accounted for by variations in trend inflation induced due to monetary policy regime shifts.

The study covers the inflation history of India since 1980, and the authors find that there are two distinct regimes which can be seen in the recent inflation history from 2007 to 2020. The first being the high inflation regime of 9.4% in the period 2007-2014 and the relatively low inflation regime of 4% since 2015.The authors also draw attention to the fact that this result is intuitively appealing as the regime shift from an high-inflation regime to a low inflation regime has coincided with the monetary policy regime shift from a multiple indicator approach to adoption of a flexible inflation target de facto in 2014 and de jure in June 2016, with a headline inflation target of 4%.





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As can be seen in the charts above, the filtered estimates or real time estimates of trend inflation have steeply declined after 2013 to 4.1% in Q12019 before climbing up again in the wake of the COVID-19 crisis and the ensuing supply shocks disrupting the inflation trend. The shaded area around the trend is the one standard deviation band. Smoothed probability estimates weighted average trend inflation, point to consistent easing of trend inflation after 2009 to 4.3% in Q12020. The authors point out that, though trend inflation has eased, it still remains above the 4% target under FIT, and is an indication that inflation expectations are not yet fully anchored to the target but we can see signs of convergence.

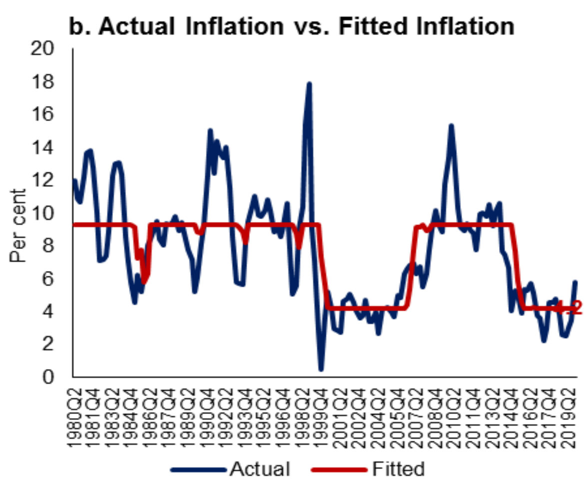
The study also points out the risks and the costs of setting the inflation target either too high (inflation expectations become unhinged, rise in risk premia, loss of Central Bank credibility) or too low as compared to the trend inflation (deflation bias, efficacy of monetary policy is affected in its symmetrical stabilizing role). Hence, the authors argue that the optimal approach is to set the inflation target in broad alignment with, or slightly below trend inflation. Therefore, if the trend inflation (pre-COVID) is ascertained at 4.1-4.3% it is reasonable to fix the target slightly lower than trend inflation at 4%. Notably, an inflation target seeks to anchor medium to long term expectations of inflation and hence one time shocks like the present crisis should not be allowed to reset the inflation target.

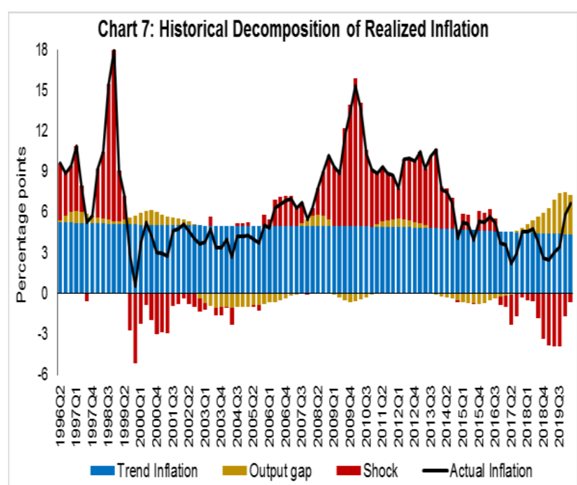
The study has also indicated that volatility in inflation has shown a cyclical pattern in India, which has an important bearing on forecasting inflation. Also, the stochastic volatility has declined from 11 by the end of 1990s to 4.4 in Q32009 and declined further to 2 in Q12017 and has remained flat thereafter indicating a decline in the influence of supply shocks on inflation , and consequently suggests a growing credibility associated with the conduct of the monetary policy. The research also suggests that in all these inflation movements the trend inflation tends to dominate the overall variations, and acts as an important component in understanding overall inflation dynamics.

To sum up, the authors point out that trend inflation was falling even before the implementation of the Flexible Inflation Targeting Framework (FIT) in 2016.The trend inflation has declined from 9.4% in 2014 to 4.1-4.3% in Q1FY2020 just before COVID-19 struck. The authors point two pertinent reasons for the decline in trend inflation:

1. a decline in the inflation persistence, indicating that households and businesses in India are becoming more forward-looking than before as credibility associated with monetary policy increases;
2. An increase in sacrifice ratio – further disinflations will become costlier in terms of the output foregone.

The authors conclude by saying that, the credibility bonus accrued to the monetary policy warrants smaller policy actions to achieve the target. Since fixing the inflation target either too high or too low would lead to larger policy actions and unhinge inflation expectations leading to a loss of credibility for the Central Bank. Hence, the authors suggest that the inflation target be maintained at 4% into the medium term, and there is really no need to revise the inflation target for the medium term.





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