

Monitoring Inflation Through Monetary Policy

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ABSTRACT

Inflation, a monetary phenomenon, refers to an increase in the general price levels as a result of an increase in the amount of money. This phenomenon is characterised by the money stock increasing rapidly as opposed to the productivity levels in the economy. Monetary policy refers to a set of instruments used by a nation's central bank to control the overall money supply in order to maintain the economy at a rate that is moderate and sustainable.

Monitoring inflation through monetary policy involves using these instruments and practises adopted and used by the central bank as a strategy for inflation targeting. The goal of this study is to dwell further into the definition of monetary policies, to evaluate and discuss various tools used by the central bank of India and their respective impacts on the Indian Economy.

INTRODUCTION

Monetary policy is a set of policies that aim to control macroeconomic factors such as inflation and interest rates by majorly impacting the money supply in an economy. The rates charged to borrow loans by the nation's banks is set by the central bank. Any tweaks in the rates by the central bank, affects the rates charged by various institutions to their customers and businesses. Influencing the money supply of the nation almost never depends on the physical printing and distribution of money. Instead, the central bank uses other controls for interbank lending. The new instruments and electronic account balances make the monetary policy less predictable. Moreover, it has been seen time and again the hyperinflation - resulting money-printing disasters.

The rate of inflation is used as the primary metric for maintaining price stability and subsequently the monetary policies. Interest rate changes impact not only the level of borrowing but also saving and spending in an economy.

In general, the central bank tightens and expands the monetary policy by increasing and decreasing interest rates accordingly. Changing the investment and consumption in the overall economy which depend extensively on credit, opening market operations are some of the tools of monetary policy that a central bank implements as a strategy of inflation targeting and achieving sustainable economic growth. When interest rates rise, consumers are likely to consume in the future than the present and borrowing is more expensive. This in turn discourages lending which slows the rate of monetary growth (inflation). Similarly, when interest rates are lowered, spending is likely to increase and borrowing is cheaper, resulting in an increase in the rate of monetary growth.

This paper aims to outline the impact that monetary policy decisions undertaken have on the inflation in an economy. A qualitative approach was undertaken to ascertain the impact of monetary policy on inflation. Additionally, the impact of unconventional monetary policy is also assessed as part of the literature review of this paper.

I have taken the following macroeconomic variables:

- Long term interest rates
- Change in M3 Money Supply
- Short Term interest rates
- Cash reserve ratio

and gauged the impact that the changes in these variables have on inflation by using a qualitative approach.

HISTORICAL APPROACHES TO MONETARY POLICY

Nominal anchors were adopted in the United States and other countries as a measure to achieve stable inflation over time. A nominal anchor is a variable--such as the price of a particular commodity, an exchange rate, or the money supply--that is thought to bear a stable relationship to the price level or the rate of inflation over some period of time.

1. The Gold Standard:

The Federal Reserve was founded in 1913, which served as the nominal anchor throughout the world as well as the United States. Under this anchor, the central bank commits to exchanging, on demand, a unit of domestic currency (for example, one dollar) for a fixed quantity of gold. As a result, as the amount of gold in the central bank's vaults rises or falls, so does the amount of money in the economy. If gold production keeps up with economic growth and the gold-currency convertibility is dutifully maintained, the price level was expected to be roughly stable.

2. Maintenance of a Fixed Exchange Rate:

The monetary authority offers to buy or sell a unit of domestic currency for a fixed amount of foreign currency. A country that maintains a constant exchange rate has approximately the same inflation as the foreign economy to which the exchange rate is fixed. For this reason, countries with histories of high or volatile inflation have often considered linking their monetary policy via a fixed exchange rate to that of a large country, such as the United States or Germany, that has been comparatively successful at achieving low and stable inflation.

3. Money Supply Targeting:

Under this approach, the central bank expands the money supply at a pre-specified, and typically fixed, rate over time. By controlling the expansion of the money supply, the central bank expects, in turn, to limit changes in the inflation rate.

MONETARY POLICY STRATEGIES

1. Inflation Targeting

During the 1990s, a number of central banks announced an inflation target and aimed to conduct the monetary policy within this framework of inflation targeting. Most countries decided to combine inflation targeting with a freely floating exchange rate. This strategy makes use of inflation forecasts determined by past and current information and the average short term interest rate, while focusing on price stability. The institutional framework builds on independence, transparency, and accountability. A rather short horizon on which the inflation target is supposed to be met, increases credibility—it is straightforward to verify whether or not the inflation target is reached—while a longer horizon allows the central bank more flexibility. A point target is easy to communicate and therefore strengthens credibility, while a time frame for reaching the inflation target or a target band, again, increase flexibility.

2. Taylor Rule

The most common interest rate rule is the Taylor Rule. Taylor (1993) links the interest rate to the two targets of monetary policy - inflation and output. It makes use of the short-term real interest rate, the equilibrium interest rate as well as deviations of the inflation rate and output. If the monetary policy can be associated by certain interest rate rules, the general public and consumers can forecast the policy more easily, concluding that as predictability increases, the transparency of the policy increases.

3. The Monetary Conditions Index

The MCI is an indicator for the stance of monetary policy, which does not only consider an output target but also the influence of the exchange rate on inflation. The MCI considers how the frame of monetary policy is influenced by the interest rate as well as the exchange rate. An increase in the MCI results in a more restrictive monetary policy whereas a decrease in the MCI results in a less restrictive monetary policy.

RBI'S ROLE IN CONTROLLING INFLATION

The Reserve Bank of India has adopted certain monetary policies in order to control inflation. These policies involve understanding the effect of certain rates and thereby controlling them.

1. Interest Rates: The reverse repo rate and the repo rate refers to the interest rates at which the RBI borrows from and lends to commercial banks respectively. An increase in the repo rate makes it expensive for commercial banks to borrow from the RBI and hence the injection of money in the economy is limited, which in turn results lower liquidity in the markets.
2. Reserve Ratios: Cash Reserve Ratios and Statutory Liquidity Ratio effect the amount of deposits in the hands of commercial banks which they are free to give as loans. An increase in these reserve ratios results in a reduction of the loan giving ability of the banks. RBI uses this instrument to effectively control credit in the market.
3. Open Market Operations: The RBI can purchase or sell Government securities from or to the public. As a method to control inflation, the RBI sells the securities in the money market which removes the excess liquidity present, resulting in decreasing demand.
4. Selective Credit Control: The RBI has been operating selective credit control to contain inflation of goods that are short in supply or sensitive goods like food grains, vegetables, pulses, oilseeds, cotton, etc which are of mass consumption. The selective credit control policy, therefore, is to discourage advances given by banks against these essential commodities.

METHODOLOGY

The paper has utilised a step-by-step approach. The topic of inflation and monetary policy was initially introduced. After a brief look at the history of the policies adopted in the United States, the context was then narrowed down to The Reserve Bank of India and the strategies adopted by the bank to control inflation. Furthermore, for the qualitative model, data was analysed keeping in mind 4 main parameters and conclusion were made on the basis of graphical representation of that data. Lastly, we look at the impact of Covid-19 on inflation and the monetary policies.

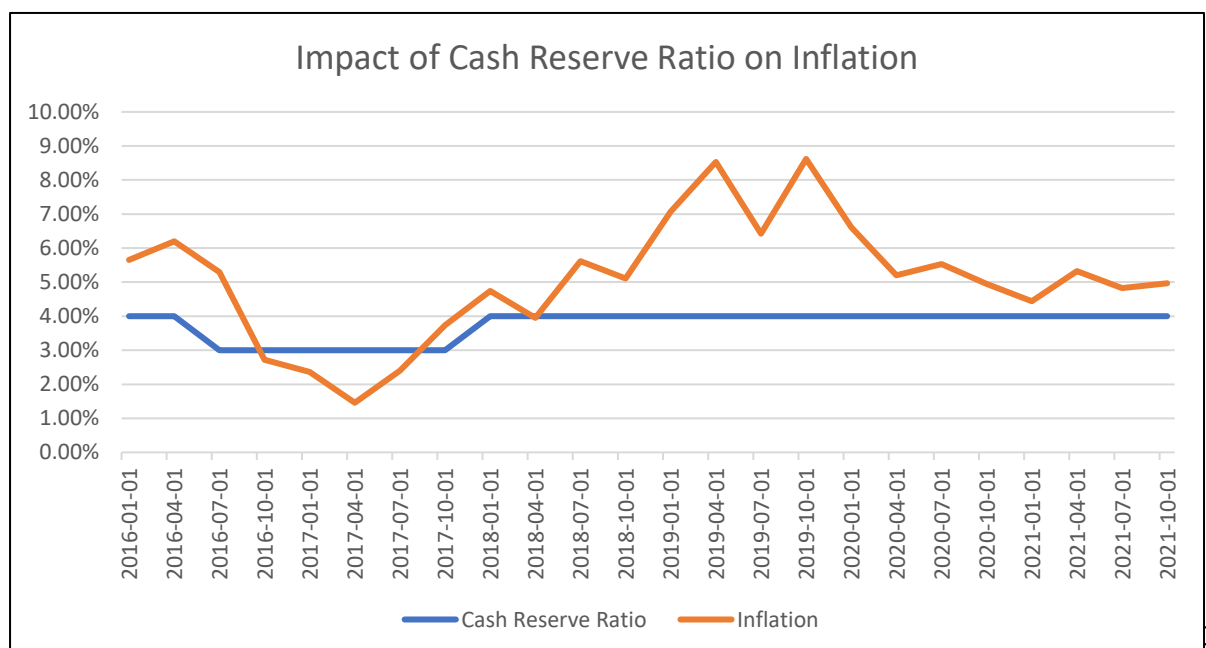
QUALITATIVE MODEL

The following data was taken and analysed as a part of this research paper

1. **Inflation** – Consumer Price Index: Total All Items for India, Growth Rate Same Period Previous Year, quarterly.
2. **Cash Reserve Ratio** – Quarterly published Cash Reserve ratio from RBI.
3. **Change in Money Supply** – M3 Money supply, Monthly, Quarterly Adjusted, Adjusted for changes.
4. **Long Term Interest Rates** – Long-term government bond yields: 10-year, Monthly, Quarterly Adjusted.
5. **Short Term Interest Rates** – 3-month or 90-day rates and yields, Monthly, Quarterly Adjusted.

2. Cash Reserve Ratio:

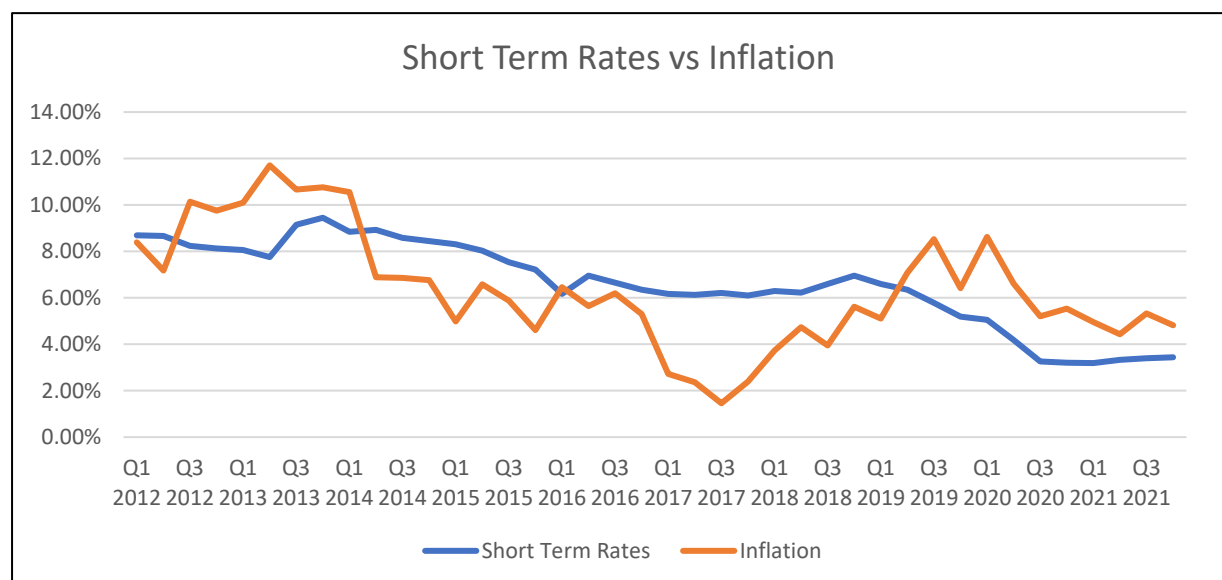
The cash reserve ratio is a central bank regulation that sets the minimum amount that a commercial bank must hold in liquid cash. This impacts the money supply directly, as the more liquid cash that commercial banks hold, the more money will exchange hands in the economy. A graph of inflation against the ratio was plotted and conclusions drawn from the graph as follows.



As seen in Figure 1 above, the cash reserve ratio has remained fairly constant throughout the period considered for this analysis (Q1 2016 – Q2 2021). However, we see that a drop in cash reserve ratio in Q3 2016, sees inflation drop subsequently. This can be down to the ‘demonetization’ that was undertaken at the time that negatively impacted the money supply in the economy and forced the central bank to ease its liquidity regulations. A jump back to 4% in Q3 2017 sees the inflation rise steeply. However, post Q3 2017, inflation fluctuates greatly, while the cash reserve ratio remains constant. This leads me to conclude that the changes in cash reserve ratio have a minimal impact on inflation. However, the impact of a change in the variable is inverse, i.e., an increase (decrease) in the ratio leads to a decrease (increase) in inflation. This is an expected outcome of the analysis as the more liquid cash is there in the economy, the greater number of purchases can be made which would lead to greater demand and hence an increase in inflation.

3. Short Term Interest Rates:

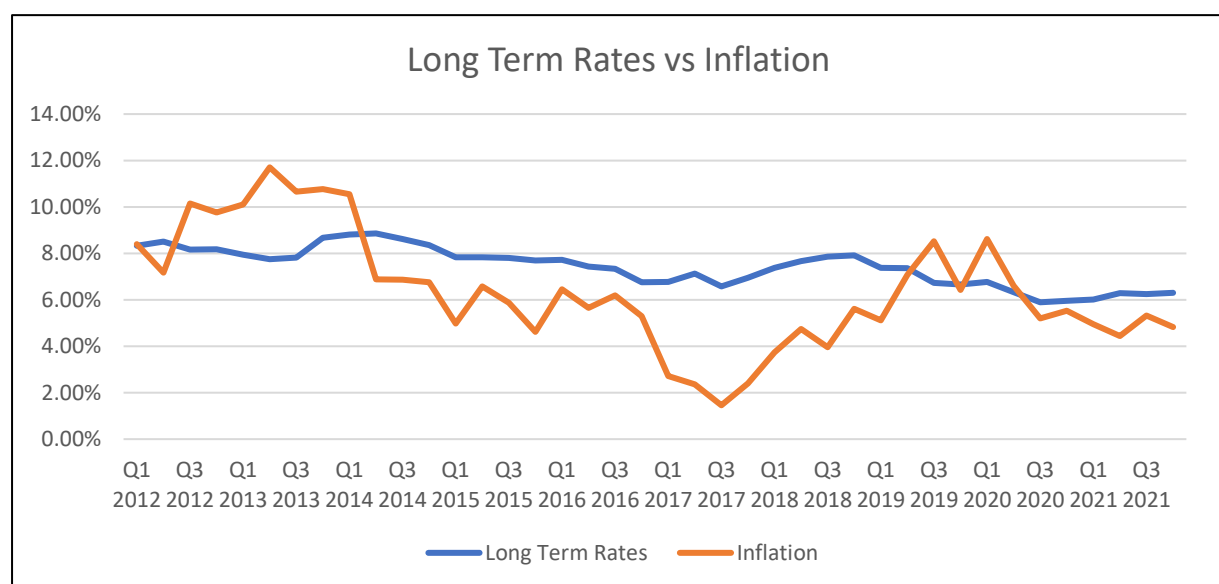
The short-term interest rate is the 3 month or 90-day rates and yields, Monthly, Quarterly Adjusted. A graph of inflation against the interest rate was plotted and conclusions drawn from the graph as follows.



As seen in Figure 2 above, the short-term interest rate has shown a decreasing trend throughout the period considered for this analysis (Q1 2012 – Q3 2021). However, we see that a drop in short term interest rate in Q3 2020, sees inflation drop subsequently. This can be due to the Covid-19 outbreak. Post Q3 2020, inflation fluctuates greatly, while the short term interest rate remains constant. This leads me to conclude that the changes in short term interest rate have a significant impact on inflation. However, the impact of a change in the variable is inverse, i.e., an increase (decrease) in the short-term interest rate leads to a decrease (increase) in inflation.

4. Long Term Interest Rates:

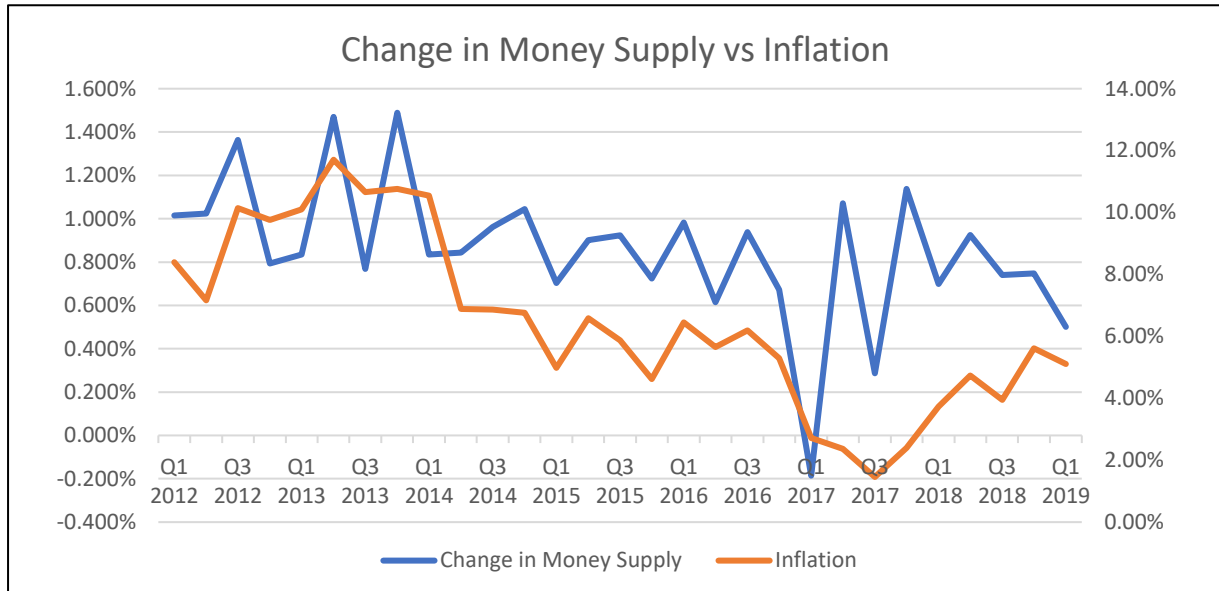
The long-term interest rates are 10-year monthly government bond yields, quarterly adjusted. A graph of inflation against the interest rate was plotted and conclusions drawn from the graph as follows.



As seen in Figure 3 above, the long-term interest rate graph is similar to the short term graph, and hence we can conclude that the changes in long term interest rate have a significant impact on inflation.

5. Money Supply:

Money Supply refers to the amount of cash or currency circulating in an economy. All else equal, an increase in money supply leads to inflation.



As seen in Figure 4 above, the change in money supply has shown a an extremely volatile trend throughout the period considered for this analysis (Q1 2012 – Q3 2021) with steep rises and drops. However, we see that a steep drop in money supply in Q1 2017 and Q3 2017, sees inflation drop subsequently. Post Q3 2017, inflation rises greatly, while the money supply remains volatile. This leads me to conclude that the changes in money supply have a significant impact on inflation. There exists a direct relationship between money supply and inflation.

LITERATURE REVIEW:

1. Inflation Forecasts and Monetary Policy (Ben S. Bernanke & Michael Woodford):

analyses the disadvantage of inflation targeting as a strategy of monetary policy because of the problems associated with the long lag between changes in policy and inflation rates. The paper focuses on static and dynamic models of sources of inflation, and the attempts to target private sector inflation forecasts. In conclusion, central banks must develop structural models of the macroeconomy and monitor forecasts of their target variables even though private sectors forecasts may have information useful to the bank.

2. Keynes's Theory of Monetary Policy: An Essay In Historical Reconstruction (Edwin Dickens)

describes the interaction between the three concepts of monetary policy. The paper talks about risk and probability in the orthodox concept as well as Keynes's concept. The main focus is the reason why the economy fluctuates around long-term equilibrium position characterised by unemployment, its effect and how we can instead use interest rates in order to fluctuate the economy around long-term equilibrium positions characterised by full employment.

3. The Role of Reserve Bank of India in Controlling Inflation: Traditional or Beyond Monetary Measures? (Vibha Bhirud)

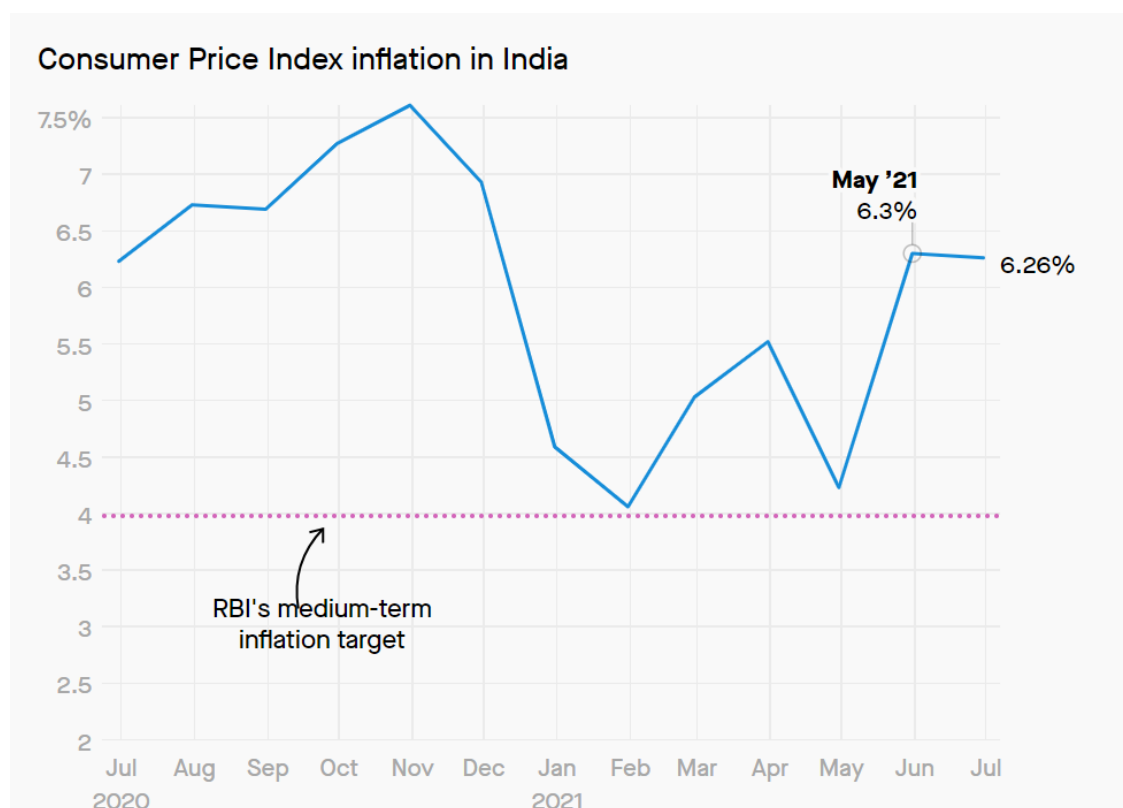
examines the ineffectiveness of standalone monetary policies as a strategy to control inflation. Increasing bank rates, repo rates, cash reserve ratio, buying dollars, regulating money supply and the availability of credit, all affect the money supply in the economy. The paper talks about the need to strengthen the supply side instead of focusing mainly on the demand side of the economy.

4. Monetary Policy and Inflation Dynamics (John M. Roberts)

assess the changes in monetary policies – being more reactive to output and inflation fluctuations and more predictable. It considers two models – one is a simple model, and the other is the Federal Reserve's largescale model. The paper dwells into the output gap and the effect of monetary changes on the gap.

IMPACT OF COVID-19 ON INFLATION

As of October 2021, the consumer price inflation was higher than the Reserve Bank of India's (RBI) comfort level of 2-6%, almost nearing 6.30%.



While the sole focus of the RBI in a post covid economy has been to revive growth, economists have pointed to the fact that Covid-19 has also pushed up inflation, and so it needs attention as well. Inflation might become a bigger concern in the coming months due to the recent trend of rising international crude oil prices and the hike in the excise duty on petrol and diesel announced. Recently RBI has let inflation rise because it wanted to focus on growth and revive the economy that has taken a beating due to the Covid-19 pandemic. But over a year into this attempt, India still continues to struggle with a sluggish economy.

CONCLUSION

Monetary policies set out by the central banks play an extremely important role in controlling inflation. Controlling interest rates and money supply are the most common monetary policies adopted by the Reserve Bank of India in order to reach a sustainable economic growth rate. While short term impacts are more often taken into consideration, the long-term relationship and effect of inflation and these monetary variables should also be considered. Additionally, the supply side of the economy should be strengthened and focused upon in addition to the demand side.

Qualitative and graphical analysis of the impact of 4 variables on inflation leads to the conclusion that short term interest rates, long term interest rates and money supply in the economy play a major role in controlling inflation.

However, monetary policies alone should not be used as a measure of control of inflation. The central bank and government should also take up various other premium strategies and practises and combine them effectively with the traditional methods to develop a holistic approach towards stabilising minimum necessary rate of inflation.

Unconventional monetary policies like QE have gained traction over the past decade as conventional policy instruments fail to meet today's requirements. These policies have been successful in achieving desirable outcomes on inflation as highlighted by (Luca Benati, 2013).

During the Covid-19 Outbreak, although the RBI has focused mainly on reviving the economy, its policies have been unable to follow through. The Indian economy, as of 2021, was still sluggish in terms of growth with the additional pressure of inflation problems.

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THANK YOU