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## The Tale of Inflation and Policy Rates

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It is often a layman's pick to cry on inflation and complain regarding the plummeting interest rates. A man standing at the club house or enjoying his hot served steam tea (definitely without sugar), along with his friends, is highly concerned about the ever uphill price trend of potato and onion, while at the same time worrying about the falling interest rate that he has been fetching ever since he envisaged his life after retirement. However, there is another side to the story. Often, we come across statements with an underwhelmed connotation that "the price of stuff X was only ₹2 when we were in our kindergarten school (maybe)". However, the statement, in most instances, is incomplete. People never considered the income level, standard of living, which in a way is defined by income level, and particulars of socio-economic development in and around them. This shall be explained in simpler terms in a while. Now, the question that often resurrects and resonates which we should ponder over is that are they wrong in their thought process or are there any loopholes in understanding the broader aspect of the picture or is there a lacuna on our part to put it clearly at their disposal? I shall try to explain the stuff in the best possible way I can. However, before I go about it, it is imperative to understand a few important concepts that will be fruitful down the line.

Everything in a country starts with a policy that is either being implemented, or tweaked or reframed to fulfil certain envisaged benefits or outcomes. Economic policies can be broadly categorised into two ways: Fiscal Policy and Monetary Policy. A fiscal policy is the one that the constitutionally elected government of the country undertakes, and involves policies revolving around government spending, trade, taxation and subsidy, among others. On the other hand, a monetary policy is governed by the apex banking institution of the country - the Reserve Bank of India (RBI) in the Indian context. Monetary policies are often implemented using two policy tools: the money supply and the interest rate. Policies regarding loan restructuring, governing balance sheets, governing effective and efficient functioning of commercial banks also fall under the role of the apex monetary institution (RBI). People often get worried when rates are changed by the RBI, but what exactly is it changing and how heinous or benevolent impact it would bring into, is the point worth pondering.

Having explained the policies, let's have an eagle's eye on the functionality of banks and the trickle-down effects of changes in the interest rate. To start with, let's understand how commercial banks function. The primary source of income for any commercial bank is the interest rate that they charge on the loans offered. This interest rate can be broadly termed as the lending rate, which differs across various categories for which the loan is being asked. The lending rate is governed or calculated taking into account the Marginal Cost of Lending Rate (MCLR). Other sources of income for the commercial banks include service charges for drafts, debit and credit cards and the reverse repo rate charged on lending to the RBI. The expenditure section of any commercial bank is broadly confined to the interest paid on deposits (savings, fixed or recurring), repo rate, other operational costs and the London Interbank Offer Rate (LIBOR), a globally accepted interbank offer rate that serves as the benchmark for borrowing cost between banks, and overnight rates. Every commercial bank is required to maintain a reserve at the central bank, the amount of which is contingent upon its outstanding assets and liabilities. Since the assets and liabilities are highly volatile and change every moment, a bank might witness a surplus or deficit of the reserve at the end of the day. The bank with a surplus lends out to the bank with a deficit for only one night and the lending rate is termed as an Overnight Rate. It is evident by now that LIBOR and Overnight Rates are income for one bank and expenses

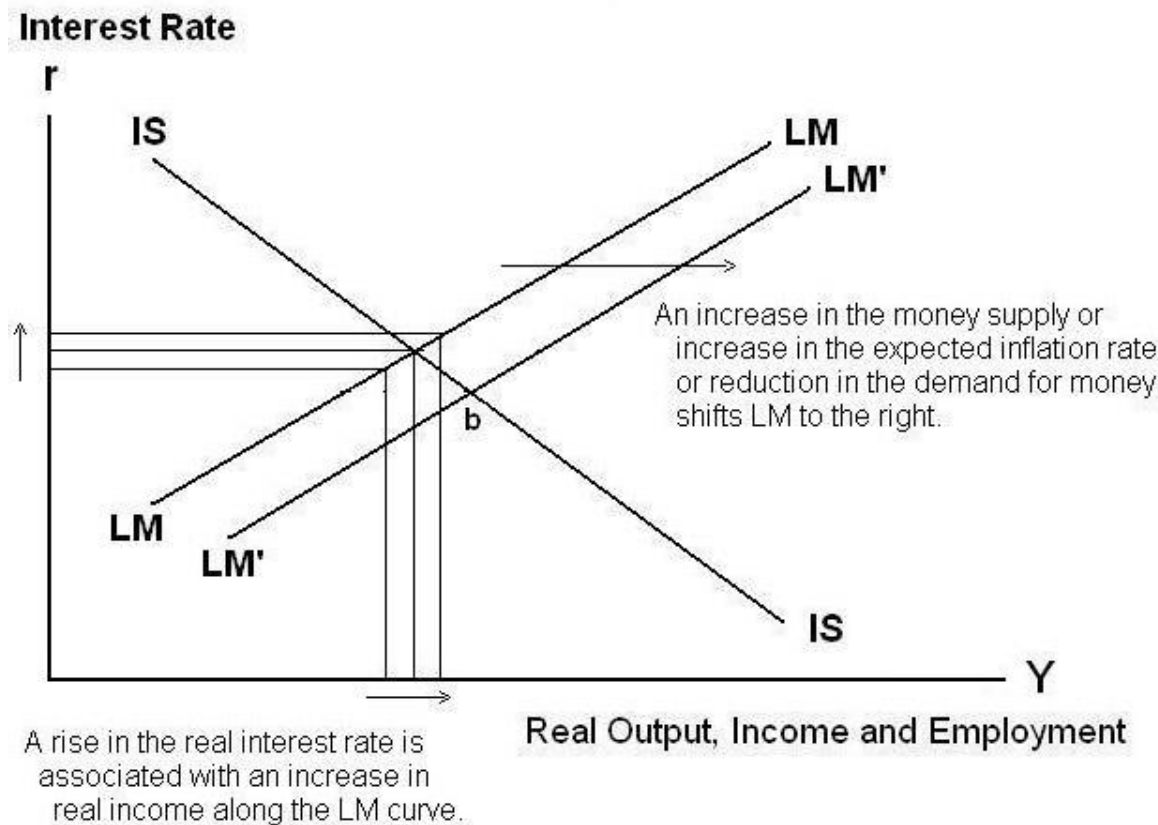
for another. The net of income over expenses is obviously termed as the profit for the bank. A bank, being a profit-driven entity, will naturally try to maximise its profit, and there is no harm in wishing to do so. On shifting the paradigm of focus to the RBI, we can understand how a policy rate change deciphers a trickle-down effect. The two key rates that we often get to hear are the Repo Rate and Reverse Repo Rate. When a commercial bank provides Treasury Security to the RBI and the later lends the former money commensurate to the value of the security at a pre-specified interest rate, the process is termed as a repurchase agreement, while the interest rate applicable is coined as Repo Rate (RR). On the contrary, when the RBI borrows money from the commercial banks or the later perpetually parks the excess cash at RBI's window to collect some interest rate, it is called a Reverse Repo Transaction and the interest rate applicable to it is termed as the Reverse Repo rate (RRR). If one would ponder, she or he would notice that the RRR is often less than RR, which is essentially because the RBI has the authority to generate money and the probability that it would default is almost zero, which is not the case with the commercial banks. In this backdrop, difference between RR and RRR can be called as credit risk spread. When the RBI cuts the lending rate, i.e. the RR, it is bound to have an impact on the commercial banks. The commercial banks can now borrow money from the RBI at a cheaper rate, thereby experiencing a higher profit, ceteris paribus. Besides, the commercial lending window also witness a rate cut to boost private investment. As the rate is majorly governed by the MCLR, the decline is not likely to be as sharp as the policy rate cut. In this situation, the interest rate on savings would fall, because, firstly the policy makers want to increase money supply, and secondly, the banks might not allow a fall in their profit rate. Even though the RBI is the last resort for the commercial banks to borrow money in a usual situation, the rate cut is likely to bring in an impact, as borrowing from the RBI is still one of the key sources of funds, the reason why the RBI is called as the bankers' bank. Hence, the monetary policy is often backed by the primary assumption of the trickle-down effect that it would ring a bell in investors as well as consumers' psychology. To pitch-in a personal experience, I must add, while interning as a research assistant at a government bank in the year 2018, I recall there was a policy rate cut by the then RBI Governor Urjit Patel. On the very next day, a man at his whim occurred at the bank with his poignant inquisitiveness if the rate cut is going to increase his interest earning. The news flourished and it started to have a psychological impact on the people.

To understand how effective the policy rate is in tackling inflation, let's primarily understand the same and its consequences. Continuing with the example presented in the beginning, , and putting it up in an extremely lucid and layman fabricated way, it would mean that if the price of potato has been fixed at say ₹10 per kg for the last two years now and suddenly, one fine day (not so fine rather), if the price jumps to ₹20 per kg, and then again falls back to ₹10 a week later, an economist would not call it inflation. It is just an unprecedented and unappreciated hike in the price that got back to normalcy in a few days. On the contrary, if the price would have stayed at ₹20 for a significant period of time, it will be coined as inflation. To sum it up, it is the trend that we are concerned with. It is similar to the tale of recession and depression, where a long period (say a quarter) of the former cumulates to the latter. When there is inflation, the real value of money falls and the money becomes a hot potato that no one likes to hold. People will, in all efficiencies, run to the bank to safely park their money so as to insulate themselves from the gravitating value of money.

Inflation and interest rates are probably the few of the most misunderstood concepts in economics and finance. What ought not be confused is that the difference between the interest rate earned form a bank (nominal interest rate), and what that additional amount of money brings to us (real interest rate), is the rate of inflation. Policy rates are essentially designed to curb and keep inflation under control.

$$\text{Real interest rate} = \text{Nominal interest rate} - \text{Inflation Rate}$$

Over the period of time, it is not just the price of potato that has increased, it is also the level of income that has witnessed a hike. People these days have more money than they ever used to have. The nominal value that a person holds today is definitely higher than what he or she had been holding ten years ago. Hence, there has been an increase in the overall money supply in the economy. From the basic macro-economic model of income and interest rates, it can be said that an increase in the money supply is accompanied by a decrease in the interest rate as the monetary policy curve (LM curve) shifts to the right with interest rate being measured on the vertical axis.



Source: Toronto Economics.

What essentially happens is that when there is an increase in the money supply, the spending capacity of people increases and the demand for the existing stock of consumption goods increases consequently. With an excess demand for goods and the production levels held constant in a particular period of time, the price of the commodities increases. If the trend follows, it turns out to be inflation over a period of time.

The role of the RBI is be highly crucial here. It can either opt for open market operations to reduce the money supply or it can change the policy rates. An increase in RR in this situation will demotivate the commercial banks to borrow money from the RBI. Consequently, the banks will increase their lending rate in order to prevent themselves from running out of liquidity. With the investments being held back following a hike in lending rate, the banks will have to curtail their expenses to not compromise in its operating costs. The axe on the wood shall come with a policy following a decrease in the interest rate that banks provide on savings. Now, recall the group of friends still standing at the tea stall and complaining about the fall in interest rate. Yes, they are right. The interest rate has indeed fallen. Rather, it has ostensibly fallen, creating a negative impact on their retirement benefit plans. However, what stands imperative is to note that what has actually fallen is the nominal interest rate. How about counting in the inflation rate and calculating the real interest rate? The story line might turn out to be happier.

Consider an example with a fall in the interest rate: say at time  $t$ , the interest rate that the pensioner receives is 10% and the ongoing rate of inflation is also 10%. Suppose he is having a deposit of ₹10,000 fetching him a 10% interest earning. If the price of potato is ₹10/kg, he can buy 1,000 kg of potatoes with the principal amount. If the inflation is also 10%, after one year, the price of potato would be ₹11. And with the 10% interest rate on his deposit, he will earn an interest of ₹1,000. Hence, the total amount of potatoes that he can buy after a year is again 10 kg. Effectively, although the rate of interest is lucratively high, he is not gaining anything, except for a psychological satisfaction of a “high interest rate”. On the other hand, consider the interest rate being 8% after one year, and the rate of inflation being 5%. Now, he is fetching an interest amount of ₹800 and the with the inflation being 5%, the price of potato would be ₹10.5. The total amount after interest payment being ₹10,800, he can effectively buy 1,028 kgs (approximately) potatoes, i.e. 28 kgs more with a lower interest rate and obviously with a lower inflation rate. (the idea of the example has been inspired from the Dosa Economics coined by Prof. Raghuram Rajan)

Therefore, this clearly defines that not all falling interest rates are heinous for savings. It is always the real interest that counts and the how low or high is the rate of inflation commensurate to the nominal interest rate. If we study the journey of inflation policy rates of India from 2001-2019, we can understand the motive behind every move and that people in general are not worse off. Inflation and policy rates were targeted using the whole sale price index (WPI), but during the era of Raghuram Rajan as the Governor of RBI, the inflation targeting index changed

from WPI to the consumer price index (CPI), which essentially focuses on the price at which all the consumers are buying in the market and not on the price at which the traders receive it at the whole-sale market. Varied economists propounded various opinion regarding the paradigm shift, while to my opinion, CPI is a better measure to fetch in inflation as it depicts the real story line regarding the price and the market. A weighted measure of CPI and WPI could have been good either, but that's for the policy makers to take a call.

**Table: CPI and WPI inflation and the respective rates across the years.**

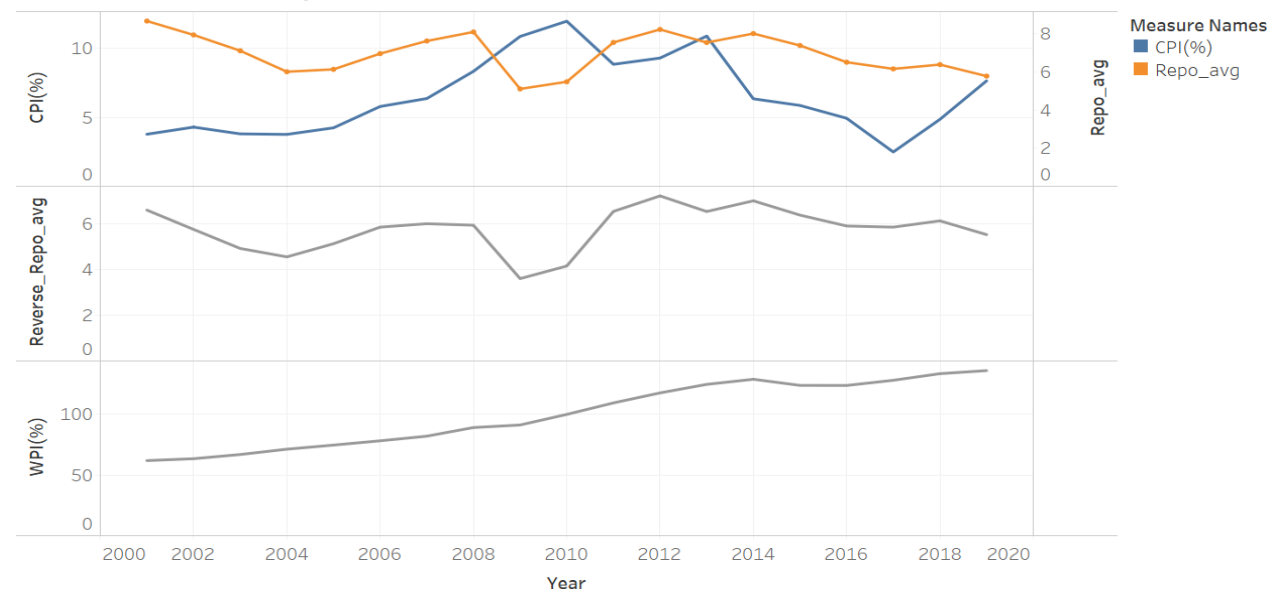
Year	Repo_avg	Reverse_Repo_avg	CPI(%)	WPI(%)
2019	5.77	5.52	7.66	136.12
2018	6.38	6.13	4.86	133.60
2017	6.15	5.85	2.49	128.13
2016	6.50	5.90	4.94	123.87
2015	7.38	6.38	5.87	123.94
2014	8.00	7.00	6.35	128.96
2013	7.53	6.53	10.91	124.77
2012	8.21	7.21	9.31	117.73
2011	7.54	6.54	8.86	109.47
2010	5.48	4.15	11.99	100.00
2009	5.10	3.60	10.88	91.27
2008	8.08	5.93	8.35	89.17
2007	7.61	6.00	6.37	82.05
2006	6.95	5.85	5.80	78.23
2005	6.13	5.13	4.25	74.69
2004	6.00	4.55	3.77	71.32
2003	7.10	4.92	3.81	66.92
2002	7.93	5.75	4.30	63.48
2001	8.66	6.59	3.78	61.92

Source: Original Data from RBI and Word Bank.

Note: There is a specific reason to use the term average tailing with the RR and RRR is because one particular year, the policy rates are changed numerous times. RR and RRR and not always changed together and hence the data obtained are with blanks. There will be missing data and multiple entries for one particular year. In data analytics, missing data is handled either by dropping the entire column (which is not possible for this data) or forward or backward filling.

If the data in the table is observed properly, it reflects that the inflation (CPI) came under control for the first time in last two decades after 2013. Additionally, it should also be noted that that the interest rates are both showing a downward trend. Last quarter of 2019 showed a havoc increase in price (recall onion and other food and vegetable prices), and the average rate of CPI inflation shoots up.

Inflation rate - Policy rates



The trends of CPI(%), Repo\_avg, sum of Reverse\_Repo\_avg and sum of WPI(%) for Year. For pane Sum of CPI(%): Color shows details about CPI(%) and Repo\_avg. For pane Sum of Repo\_avg: Color shows details about CPI(%) and Repo\_avg.

Date Source: RBI and World Bank, Tool used: Tableau

As is seen from the charts above (plotted using same data set), the policy rates have been depicting a downward trend and so does the inflation. If the inflation is kept under control, any economy is bound to be happy and prosperous. Ironically, if there is growth, there will be inflation, and the target is to keep it on a check and let the economy flourish otherwise. Inflation is basically the unwanted guest at your place whom you never expect but they will come, at the same time you cannot part away with them as they are conjectured to bring good luck (growth for economy), if under check.

Conclusion: In an attempt to answer the question steamed alongside the conversation with a cup of tea, it can be concluded that people today are not necessarily worse-off with the fall in interest rate. What eventually prevailed is the growth, the rise in income, standard of living, increase in demand and the unwanted guest inflation. To control the inflation so that it restricts its obnoxiousness, while at the same time, a periodic tweak in interest rate is necessary. Dropping sole complain and crying over a falling interest rate would be irrelevant and a bit of amnesia over the pain of high inflation. Being sagacious of growth and limited inflation would require a timely check on the policy rates. As it is philosophically said with something good, there might exist something bad or in the dimension of food, with too much good food, indigestion might occur, inflation to economy is just the same. For people still standing at the tea stall in a winter morning, inflation is the chilling atmosphere whereas the slight hotness of the cup, pinching at the tip of their finger, trying to rebel, is the falling interest rate set to do its work while they enjoy the other aspects of the economy(tea) .

