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# Study of Relationship between Monetary Policy and Inflation

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## Abstract

This study examines how monetary policy has changed over time in relation to inflation in India between 2014 and 2023.The monetary authorities are working hard to reduce inflation by implementing a number of monetary policy tools, the most significant of which are adjustments to the CRR, repo, and reverse repo rates. This paper presents an econometric analysis of how changes in the monetary authorities' CRR, repo rate, and reverse repo rate affect their ability to control inflation. With the goal of offering a thorough grasp of their dynamic interaction, this study explores the complex link between inflation and monetary policy. This research takes a multimodal approach to investigate the complex mechanisms by which monetary policy shapes inflationary tendencies, with an emphasis on theoretical frameworks as well as actual data. In addition to taking into account the larger economic backdrop, the research covers a variety of monetary policy tools, such as interest rates, the money supply, and unorthodox measures. In order to represent a variety of macroeconomic environments, the research uses sophisticated econometric approaches to evaluate historical data, encompassing both developed and emerging economies. The study aims to provide nuanced insights into the transmission mechanisms and lags involved by analysing the short- and long-term effects of monetary policy on inflation.

## Introduction

The relationship between monetary policy and inflation represents a critical and dynamic face of macroeconomic analysis, influencing the overall stability and performance of an economy. Monetary policy, orchestrated by central banks, primarily aims to control the money supply and interest rates to achieve macroeconomic objectives. One of the key objectives is managing inflation, which refers to the general increase in the price level of goods and services over time. The intricate interplay between monetary policy and inflation has been a subject of extensive study and debate among economists, policymakers, and financial experts. Understanding how

changes in monetary policy impact inflation and vice versa is paramount for formulating effective economic strategies, as well as for anticipating and responding to economic fluctuations. This relationship is multifaceted, involving intricate mechanisms and feedback loops, making the study of these dynamics a crucial aspect of economic research and policy formulation.

## Monetary Policy:

A country's central bank uses a suite of instruments known as monetary policy to manage the total amount of money in circulation, foster economic expansion, and implement tactics like adjusting interest rates and bank reserve requirements.

## Types of Monetary Policy

### Contractionary

Contractionary policy raises interest rates and places restrictions on the amount of money in circulation in an effort to curb inflation, which lowers the buying power of money by driving up the cost of goods and services in an economy.

### Expansionary

Economic activity increases when there is a slowdown or recession thanks to an expansionary policy. Interest rates are lowered, which makes borrowing and spending by consumers more appealing while making saving less appealing.

### The Monetary Policy Transmission Mechanism

The term "monetary policy transmission mechanism" refers to how monetary policy influences inflation and the actual economy, such as output and employment. Actually, there are multiple distinct mechanisms acting in tandem through various channels that make up the transmission mechanism. While some of these factors have an immediate impact on inflation, others require longer to do so.

- The Interest Rate Channel,
- The Exchange Rate Channel,
- The Asset Price Channel, And
- The Expectations Channel.

### The Interest Rate Channel

The interest rate channel explains how the Risk bank can change interest rates, which in turn affects the amount of economic activity and inflation. When talking about the policy rate, it's crucial to keep in mind that the general level of interest rates has an impact on the policy rate's normal level. Inflation and demand are stimulated by a rate that is below average; the opposite is true with greater rates. The general level of global interest rates, which has been declining for a few decades, determines interest rates in Sweden. This is due to large levels of global savings rather than an increasingly expansionary policy by central banks. Interest rates, including the policy rate of the central bank, decrease when there is a surplus of saves relative to the demand for savings, or money used for investments. For this reason, the policy rate's usual level is currently lower than it was about 20 years ago. As a result, a policy rate level that at the time had an expansionary impact on

the economy could now have a tightening effect.

## The Exchange Rate Channel

Exchange rates are impacted by changes in policy rates as well. Foreign agents show greater interest in investing in Sweden as interest rates rise relative to other countries, as the country offers bigger returns than other currencies. The krona (SEK) becomes more in demand as a result of this. The krona's price grows in response to an increase in demand, much like the price of any other product does. The krona exchange rate strengthens because it reflects the price of SEK in respect to other currencies, meaning we must pay less SEK for a dollar or euro, for example. As a result, Swedish goods become more costly for homes and businesses outside, which lowers demand for Swedish goods. As a result, Sweden's exports to other nations decline. As a result, the Swedish economy experiences a decline in activity and inflation starts to decline. Concurrently, the cost of imported items decreases in SEK, which also helps to reduce inflation.

## The Asset Price Channel

The prices of different assets are also impacted by the amount of interest rates. Higher interest rates make saving money in a regular bank account more beneficial, and they can also cause the value of assets like stocks and real estate to decrease. Because it reduces the willingness of households with such assets to spend money, this also leads to lower consumption. It's also possible that banks, who take the assets as collateral, may lend less to individuals and businesses. Even in this case, it's crucial to remember that not all changes in interest rates result from the Riks bank altering its monetary policy, or policy rate. Developments in the normal level of the policy rate, and hence in the overall level of interest rates, also influence the evolution of asset prices. Therefore, one likely major argument for why house prices are greater now than they were a few decades ago is that, on the whole, interest rates have declined.

## The Expectations Channel

Higher interest rates reduce economic demand. Demand can also be tempered if people and businesses anticipate higher interest rates in the future, as their current consumption and investment decisions are impacted by their perceptions of the direction the economy will take in the future. Thus, through expectations, the central bank's decision to raise the policy rate and to communicate about its potential level in the future—for instance, when the Riks bank revises its policy rate prediction upward—may have a moderating influence on the economy.

## Inflation

Ever since money was first utilised as a form of exchange, inflation has existed. Supply and demand, oil prices, conflicts, droughts, and monetary policy are just a few of the variables that have affected inflation in India. Inflation in the 1950s was moderate and steady, averaging less than 2% annually. Nonetheless, variations occurred as a result of industrialization and variations in agricultural productivity. The government's expansionary fiscal policies and monetization during the 1980s caused inflation to remain high, averaging 9.2% annually. The decade of the 2010s: When the Reserve Bank of India (RBI) adopted an inflation

targeting framework in 2016, inflation fell to an average of 5.9% annually. Utilising the policy repo rate as its primary tool, the RBI set a target of 4% for consumer price index (CPI) inflation, with a tolerance band of +/- 2%. Along with these improvements, the RBI increased market and public communication and transparency. The Covid-19 pandemic's effects on the supply and demand of goods and services caused inflation to spike to 6.6% in 2020. The pandemic caused disruptions in the production, distribution, and consumption of a number of goods, particularly gasoline, food, and transportation, which resulted in increased costs and decreased earnings. In order to aid in the economic recovery, the RBI kept its accommodating posture in place while simultaneously monitoring inflation expectations.

## Relationship Between Monetary and Inflation

The relationship between monetary policy and inflation in India is complex, influenced by both domestic and global factors. In recent years, the RBI has adopted a flexible inflation targeting framework, where the primary objective is to maintain consumer price inflation within a specified target range. This framework aims to balance the objectives of price stability and supporting economic growth.

The initial phase of reform, which lasted from 1991 to 1998, saw the start of structural and economic reforms in India, necessitating a change in the country's monetary policy framework. The RBI used a multiple indicator approach, taking into account a number of variables to decide on the direction of monetary policy, including inflation, the money supply, credit growth, exchange rates, and output gaps. To determine the policy repo rate and monetary policy stance, the RBI has formed a six-member Monetary Policy Committee (MPC). Every six months, the RBI also releases a monetary policy report outlining its analysis and predictions for the macroeconomic environment and the prospects for inflation. After the inflation targeting framework was implemented, annual inflation fell to an average of 5.9%. 2020 saw a surge in inflation to 6.6% as a result of the Covid-19 pandemic's effects on the supply and demand for goods and services.

## Current Changes in Relationship With Inflation And Monetary Policy

In its most recent monetary policy review on January 7, 2024, the RBI maintained an accommodating stance and left the policy repo rate at 4%. The RBI declared that while making sure inflation stays within the target range, it will keep assisting the economy in its recovery from the Covid-19 outbreak.

The current fiscal year's 2023–24 growth and inflation predictions were updated by the RBI. The RBI projects that the Omicron form of Covid-19 will have an adverse effect on economic activity, resulting in a lower real GDP growth projection of 9.5% than the earlier estimate of 9.9%. Ahead of the previous forecast of 5.1%, the RBI now projects 5.3% CPI inflation because of ongoing supply-side constraints and pressure on global commodity prices.

## Cash Reserve Ratio

The Central Bank of practically every country implements the capital reserve ratio (CRR), a crucial tool for monetary policy that controls the amount of money in the economy. The minimum proportion of cash

deposits (as determined by the RBI) that each commercial bank is required to maintain in accordance with RBI regulations is known as the CRR rate. Each bank's net demand and time obligations are used to calculate the cash reserve ratio rate. The sum of the balances in the current account, savings account, and fixed deposit accounts determines the Net Demand and Time Liability.

## Covid's Effect on CRR

The Covid-19 disruption resulted in a 100-basis point reduction in all banks' CRR to 3.0% for a one-year period ending on March 26, 2021. The Reserve Bank of India (RBI) has made the non-disruptive decision to gradually reinstate the cash reserve ratio (CRR) in two stages.

Effective March 27, 2021, the Cash Reserve Ratio will increase from 3 percent to 3.5 percent, and effective May 22, 2021, it will reach 4.0 percent. Although a CRR rate of 3 to 15% is acceptable, India's current CRR is below 3%. This means that whenever a bank's deposit grows by 100 rupees, it must retain 3 rupees with the RBI.

Higher CRR indicates lesser liquidity, or less money available for banks to lend out or invest, and vice versa. In order to reassure banks about their liquidity needs, the RBI prolonged the relaxation in the marginal standing facility (MSF) for another six months, ending on September 30, 2021, even as it announced the restoration of the CRR to 4%.

## Importance of CRR

The cash reserve ratio that banks maintain is crucial for depositors as well as banks. Depositors don't need to worry about their savings when banks truly maintain the statutory CRR rate because a portion of their funds are secure in the form of reserves held with the RBI. CRR's significance to banks. Customers can open deposits with banks primarily for lending purposes. Banks prefer to lend as much money as possible to borrowers and hold very little cash on hand for other uses. Banks thus like it when the CRR rate is low. Banks that lend the maximum amount are able to make large profits. When banks utilize a large percentage of their reserves for lending, they do, nevertheless, keep sufficient cash on hand to cover an unexpected demand for withdrawals. This is when CRR becomes relevant. In order to prevent circumstances when the bank is unable to make repayments because of a lack of funds, the RBI sets the rate for the cash reserve ratio.

## Cash Reserve Ratio in Times of High Inflation

In an era of extreme inflation, the state must make sure that the economy isn't flush with cash. The amount of money accessible at the banks decreases as a result of the RBI raising the cash reserve ratio to that extent. This reduces the economy's excess money flow.

## Effects of CRR

First and foremost, CRR's main objective is to guarantee that a tiny amount of money is constantly available to offset deposits. Enabling the RBI to regulate interest rates and the country's total liquidity is the second step. Because banks must keep a certain ratio of funds with the RBI without collecting interest on the reserved fund—that is, money that is retained for free—they now favor low CRR. The higher CRR rate

indicates that banks' ability to lend money is limited. Banks want to open more deposit accounts as a result. Additionally, banks will raise interest rates, deterring potential borrowers from requesting for loans since high interest rates are a sign of increased loan costs.If any depositor has purchased bank stock, an increase in the CRR rate suggests that their bank's margins will be reduced. In a similar vein, low CRR rates allow banks to invest more capital in other companies, which lowers loan interest rates. Furthermore, a low cash reserve ratio indicates that the banking system's money supply will rise. A higher money supply corresponds to higher inflation.

### Repo Rate

The interest rate at which the Reserve Bank of India (RBI) lends loans to commercial banks is known as the Repo Rate. Repurchase Agreement or Repurchasing Option is the full form of Repo Rate. Banks sell eligible securities to the Reserve Bank of India (RBI) in order to acquire loans.

### Reverse Repo Rate

Reverse repo is the inverse contract to the repo rate, as the name suggests. The rate at which the RBI borrows money from the commercial banks in the nation is known as the reverse repo rate. It is the rate at which India's commercial banks deposit excess money with the Reserve Bank of India, usually for a brief duration. Repo rates and reverse repo rates are tools used by central banks and other financial institutions to manage their daily short-term liquidity. The interest rate at which commercial banks borrow or obtain funds from the Reserve Bank of India is known as the repo rate. In return for any government securities, commercial banks receive loans from the RBI.

## Literature Review

Over the past decade, India has experienced a mix of economic challenges and growth. The Reserve Bank of India (RBI), the country's central bank, plays a pivotal role in formulating and implementing monetary policy to achieve various objectives, including price stability, economic growth, and financial stability. In the earlier part of the decade, India faced inflationary pressures, primarily driven by factors such as rising food and fuel prices. The RBI responded by adopting a tightening monetary policy stance to control inflation. This involved raising policy interest rates and implementing measures to manage liquidity in the financial system. As the decade progressed, there were shifts in the policy stance in response to changing economic conditions. In the later years, the focus shifted towards supporting economic growth, especially in the context of global uncertainties and domestic challenges. The RBI implemented measures to ease liquidity and reduce interest rates to stimulate economic activity.

Zina Ciaran(2014), In her research an essential part of the economy, which has always been unstable, is the monetary sector. One could view the currency as a way to quickly and precisely document changes in a nation's economic conditions. Additionally, the primary concerns are primarily stated in terms of money. It is impossible to examine GDP, economic growth, or the budget deficit without taking into account monetary and fiscal policies of the government and how they affect the encouragement of economic changes. Monetary policy is a subset of economic

policy and is characterised as a series of measures implemented by a nation's monetary authority to control the amount and cost of money in circulation, impact the trajectory of the domestic economy, and maintain price stability.

Manmohan Agarwal, Irfan Ahmed Shah(2019) has found that monetary policy has an effect on inflation and growth. How the goals of monetary policy have changed over time and how, following a diversion, they are now back to controlling inflation as they were under the Gold Standard (GS). However, it has come full circle and should now be focused on preserving internal balance, as opposed to the GS when it was geared toward external circumstances. India began experimenting with various monetary policy frameworks once it was established that monetisation of the budget deficit had a notable impact on the rate of inflation. At last, it has decided to tackle inflation. Our initial research on a panel of developing nations that have implemented inflation targeting reveals that doing so lowers inflation, accelerates growth, and lowers external debt. IT hasn't always been able to bring inflation down to the desired level, though. Additionally, these economies grew at significantly higher rates prior to the 1973 increase in oil prices, even though this was accompanied by quicker inflation. Slower growth could result from the decreased inflation.

Monetarist gives the money supply's growth rate a lot of weight when attempting to understand the dynamics of inflation. In the study of Vikram K. Joshi, impact of monetary policy of India with special reference to CRR, repo & reverse repo rate despite a wealth of empirical evidence supporting this theory, there remains a persistent critique contending that monetarists overstated the contribution of the money supply to inflation. In the instance of the economy, the goal of this study is to determine the extent to which inflation is a product of monetary events. In order to accomplish this, the money supply is compared to other factors that may influence inflation, such as output, currency rates, and the price of crude oil globally. The data set spans from 1993Q4 to 2011Q4, and the analysis is performed using the impulse response function on SVAR and VECM econometric models. The empirical findings imply that Tanzanian inflation is less of a monetary issue and more of an output factor. The paper recommends careful planning for promoting economic growth in addition to concurrent monetary policy coordination.

Monetary Policy and Inflation Dynamics by John M. Roberts says that US economy has undergone significant transformation since the early 1980s. Specifically, there has been a significant decline in the volatility of output and inflation, and inflation now rises much less when unemployment declines. This study investigates whether these events may be explained by monetary policy changes. The findings imply that the majority, if not all, of the variation in the inflation-unemployment link may be explained by adjustments to the shock volatility and parameter of monetary policy reaction functions. Similar to previous research, changes in monetary policy can only partially account for the drop in production growth volatility. On the other hand, a significant amount of the decline in output gap volatility can be attributed to changes in policy. Furthermore, the ability of monetary policy to account for changes in the economy is improved by a more comprehensive understanding of monetary policy adjustments, one that takes into account

advancements in the central bank's capacity to estimate potential production.

## Methodology and Discussion

This study uses a quantitative methodology to explore the complex connection between inflation and monetary policy. The research makes use of historical data from reliable sources, including international economic organizations, government publications, and central banks. Indicators of inflation like the Producer Price Index and Consumer Price Index are examined alongside important monetary policy factors like policy interest rates and money supply expansion. In order to ascertain the complex relationship between monetary policy and inflation, control variables such as unemployment, economic growth, and fiscal policy are included. A thorough literature assessment and economic theory serve as the foundation for the research idea. The statistical test (t test) that is selected for the analysis takes the functional form and lag structure into account. To estimate the model and thoroughly test the hypotheses, statistical analyses are carried out with the aid of sophisticated IBM SPSS statistics software (version 20). Throughout the entire study process, ethical considerations, data validity checks, and reliability assessments are crucial. The study's ultimate goal is to provide nuanced insights into the dynamic interaction between inflation and monetary policy, illuminating both the near- and long-term consequences.

**TABLE 1:** Data Analysis and Interpretation (2014-2023)

| YEAR | INFLATION | CRR | Repo Rate |
|---|---|---|---|
| 2014 | 6.67 | 4.00 | 8.00 |
| 2015 | 4.91 | 4.00 | 7.75 |
| 2016 | 4.95 | 4.00 | 6.50 |
| 2017 | 3.33 | 4.00 | 6.00 |
| 2018 | 3.94 | 4.00 | 6.00 |
| 2019 | 3.73 | 4.00 | 6.25 |
| 2020 | 6.62 | 3.00 | 4.00 |
| 2021 | 5.13 | 3.50 | 4.00 |
| 2022 | 6.70 | 4.50 | 6.50 |
| 2023 | 5.69 | 4.50 | 6.50 |

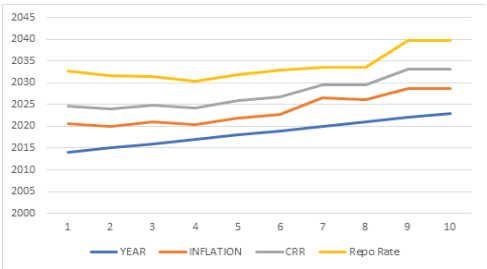


**FIGURE 1:** Data Analysis and Interpretation

### *Hypothesis 1*

**H0:** There is no significant difference between inflation and CRR.

**H1:** There is significant difference between inflation and CRR.

To test the above hypothesis, the data for change in CRR rate and inflation before and after covid is taken during the period 2014-2018

The above-mentioned period is selected because during this period the changes in monetary measures were affected due to the pandemic , T test is done and shown in Annexure 1.

**TABLE 2:** Pre Covid- Data Analysis and Interpretation (2014-2019)

| YEAR | INFLATION | CRR | Repo rate |
|---|---|---|---|
| 2014 | 6.67 | 4.00 | 8.00 |
| 2015 | 4.91 | 4.00 | 7.75 |
| 2016 | 4.95 | 4.00 | 6.50 |
| 2017 | 3.33 | 4.00 | 6.00 |
| 2018 | 3.94 | 4.00 | 6.00 |

## Relation between Inflation and CRR

In 2014 India experienced high inflation with an inflation rate of 6.57%.Over the next few years, inflation gradually declined:

- 2015: 4.91%1.
- 2016: 4.95%1.
- 2017: 3.33%1.
- 2018: 3.94%1.

The decline in inflation during this period was influenced by various factors, including global commodity prices and domestic supply dynamics.

## CRR Trends:

The CRR remained relatively stable during this period. The RBI used other tools (such as repo rates and open market operations) to manage liquidity and interest rates. The existing CRR remained unchanged at 4.00%.The RBI maintained a cautious approach, balancing the need for economic growth with inflation control. While inflation moderated, the RBI ensured adequate liquidity in the banking system without significantly altering the CRR.

**Interpretation (Annexure 1)**

A paired t-test is a statistical test that determines whether there is a significant difference in the means of two paired samples. In this scenario, the paired samples are the cash reserve ratio (CRR) and inflation. Central banks utilise CRR as a monetary policy instrument to control their country's money supply. Inflation is the rate at which prices increase over time. The average CRR is 4.00, whereas the average inflation rate is 4.76. The test statistic (t) is .124 with 4 degrees of freedom (df) and a significance level (Sig.) of .893. In general, a significance level less than 0.05 is considered statistically significant. So, based on this test, we can't reject the null hypothesis, which is that there is no significant difference between the means of inflation rates before and after the CRR implementation. The standard deviation is lower than the mean for both groups, though the mean is slightly higher for the "Before Covid Inflation" group.

**TABLE 3: Post Covid- Data Analysis and Interpretation (2019-2023)**

| YEAR | INFLATION | CRR | Repo rate |
|---|---|---|---|
| 2019 | 3.73 | 4 | 6.25 |
| 2020 | 6.62 | 3 | 4 |
| 2021 | 5.13 | 3.5 | 4 |
| 2022 | 6.7 | 4.5 | 6.5 |
| 2023 | 5.69 | 4.5 | 6.5 |

### *Inflation and CRR*

Specifics for the Period 2019-2023:

Inflation Trends:

In 2019, India witnessed moderate inflation with an inflation rate of 3.66%1. Over the next few years, inflation exhibited fluctuations:

- 2020: 6.66% (due to supply chain disruptions caused by the COVID-19 pandemic)1.
- 2021: 4.92% (moderated due to easing food prices and adverse base effects)1.

- 2022: 5.59% (partly influenced by rising fuel and food prices)2.
- 2023 (up to March): 6.37% (driven by food and fuel inflation)3.

## CRR Trends:

The CRR remained relatively stable during this period. The RBI used other tools (such as repo rates and open market operations) to manage liquidity and interest rates. The existing CRR remained unchanged at 4.5%.

**Interpretation (Annexure 2)**

The average difference between inflation rate and CRR after Covid-19 is 1.67 percentage points. The standard deviation is 1.42. There is a weak statistical significance with a p-value of 0.058. A p-value less than 0.05 is generally considered statistically significant, but a value close to 0.05, like this one, means the results are inconclusive which is shown in annexure 3. It's possible that with a larger sample size, the test might reach a statistically significant result. With 95% confidence, the true difference between inflation rate and CRR after Covid-19 falls between -0.09 and 3.44 percentage points.

**TABLE 4:** Combined Covid19 Data Analysis

| T test | | |
|---|---|---|
| | **Before** | **After** |
| Mean | .12400 | 1.67400 |
| Std. deviation | 1.94364 | 1.42117 |
| Df | 4 | 4 |
| Sig | .893 | .058 |

## Hypothesis 2

**H0:** There is no significant difference between changes in repo repo rate and inflation.

**H1:** Change in repo repo rate reduces the inflation.

To test the above hypothesis, the data for change in repo rate and inflation after covid is taken during the period 2019-2023

The above-mentioned period is selected because during this period the changes in monetary measures were affected due to the pandemic.

**Relation between Inflation and Repo Rate**

**Table 2 is used for Data Analysis and Interpretation (2014-2019)**

**Interpretation (Annexure 3)**

Repo Rate Trends:

The Repo Rate was adjusted by the RBI based on economic conditions.

During this period:

- 2014: Repo Rate was 8.00%.
- 2015: Repo Rate was 7.75%.
- 2016: Repo Rate was 6.50%.
- 2017: Repo Rate was 6.00%.
- 2018: Repo Rate was 6.00%.

The RBI used Repo Rate changes to balance inflation control and economic growth.

The average inflation rate (4.76%) is below the average repo rate (6.85%). This suggests that monetary policy, in which the repo rate is set higher than the inflation rate, may be beneficial in reducing inflation.

The average difference between inflation rate and repo rate before Covid-19 was 2.09 percentage points. There is a statistically significant difference between inflation rate and repo rate with a significance level of 0.002 (less than 0.05). We can be confident with 95% certainty that the true difference between inflation rate and repo rate lies between -2.92 and -1.26 percentage points. Since the difference is negative, this suggests that inflation rates were on average higher than repo rates before Covid-19.

**Relation between Inflation and Repo Rate**

**Table 3 is used for Data Analysis and Interpretation (2014-2019)**

**Interpretation (Annexure 4)**

Repo Rate Trends:

The Repo Rate was adjusted by the RBI based on economic conditions.

During this period:

- 2019: Repo Rate was 6.25%.
- 2020: Repo Rate was 4.40%.
- 2021: Repo Rate was 4.00%.
- 2022: Repo Rate was 6.50%.
- 2023 (up to March): Repo Rate was 6.50%3.

The test statistic (t) in annexure 4 is -2.29 with 4 degrees of freedom (df) and a significance level (Sig.) of 0.143. In general, a significance level less than 0.05 is considered statistically significant. So, based on this test, we can't reject the null hypothesis, which is that there is no significant difference between the means of inflation rates and repo rates after Covid-19. The mean difference is -1.24, meaning the inflation rate is on average 1.24 percentage points lower than the repo rate. The sample size is small (df = 4), so the results may not be generalizable to a larger population. The p-value is relatively high (0.143), so we shouldn't be too confident that the inflation rate is truly lower than the repo rate. The test only tells us about the average difference. There may be cases where the inflation rate was higher than the repo rate after Covid-19. The statistics point to a possible link between inflation and the repo rate during the COVID era. There is a statistically significant positive link and a statistically significant difference between the two variables, with inflation less than the repo rate. This could indicate that the central bank's monetary policy of raising the repo rate above inflation is helping to keep inflation under control.

**TABLE 5:** Combined Covid19 Data Analysis

| T test | | |
|---|---|---|
| | **Before** | **After** |
| Mean | -2.09000 | .12400 |
| Std. deviation | .66502 | 1.94364 |
| Df | 4 | 4 |
| Sig | .002 | .893 |

## Conclusion:

In conclusion, the data analysis offers fascinating new perspectives on how inflation and the repo rate interacted during the COVID-19 era. The monetary policy, which is defined by a repo rate greater than inflation, appears to have been successful in limiting inflationary pressures, as seen by the average inflation rate of 4.76% below the average repo rate of 6.85%. Repo rates grow in tandem with inflation, and vice versa, according to a positive correlation with a correlation coefficient of 0.893. But it's important to remember that correlation does not indicate causation, and there's a chance that a number of outside factors may have had an impact on the repo rate and inflation at the same time during the epidemic.

However, we are able to reject the null hypothesis due to the statistical significance of the p-value (0.002), which verifies that there is a significant difference between inflation and the repo rate. Indicating a statistically significant difference with a mean difference of -2.28935 percentage points, the t test further confirms this by showing that inflation is generally lower than the repo rate. These results imply a credible connection between the monetary policy of the central bank which is defined by keeping the repo rate above inflation and its

effect on reducing inflation during the difficult COVID-19 years.

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*Annexure 1*

**Pre Covid:**
**Inflation and CRR Paired T Test**
**Paired T Test:**

**Paired Samples Test**

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 95% Confidence Interval of the Difference | | | | | |
| Mean | | Std. Deviation | Std. Error Mean | Lower | Upper | | | | |
| Pair 1 | INFLATION - CRR | 1.67400 | 1.42117 | .63557 | -.09062 | 3.43862 | 2.634 | 4 | .058 |

*Annexure 2*

**Post Covid**
**Inflation and CRR Paired T Test:**
**Paired T Test:**

**Paired Samples Test**

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 95% Confidence Interval of the Difference | | | | | |
| Mean | | Std. Deviation | Std. Error Mean | Lower | Upper | | | | |
| Pair 1 | INFLATION - CRR | 1.67400 | 1.42117 | .63557 | -.09062 | 3.43862 | 2.634 | 4 | .058 |

*Annexure 3*

**Pre covid:**
**Inflation and Repo Rate Paired T Test:**
**Paired T Test:**

**Paired Samples Test:**

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 95% Confidence Interval of the Difference | | | | | |
| Mean | | Std. Deviation | Std. Error Mean | Lower | Upper | | | | |
| Pair 1 | INFLATION - Repo rate | -2.09000 | .66502 | .29741 | -2.91573 | -1.26427 | -7.027 | 4 | .002 |

*Annexure 4*

**Post Covid:**
**Inflation and Repo Rate:**
**Paired T Test:**

**Paired Samples Test**

| | | Paired Differences | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 95% Confidence Interval of the Difference | | | | | |
| Mean | | Std. Deviation | Std. Error Mean | Lower | Upper | | t | df | Sig. (2-tailed) |
| Pair 1 | INFLATION - Repo rate | .12400 | 1.94364 | .86922 | -2.28935 | 2.53735 | .143 | 4 | .893 |