A Study on Relationship between Inflation and Money Market Rates in India

Simarpreet Kaur *
Dr. Navkiranjit Kaur **

Abstract

The operations in the Money Market are generally short term in nature. Money Market is a market for short-term funds with maturities ranging from overnight to one year and includes financial instruments that are considered to be close substitutes of money. In India, Money Market rates are very fluctuating due to number of factors such as GDP, CPI, interest rates, money supply, exchange rates etc. This paper explores the relationship between inflation and money market rates for the period from April 2015 to March 2017. It has used regression for analysis of data. Results from analysis indicate that growth in prices greatly affects the lending rates of short term financial instruments thus making borrowings costlier for the market participants. It also suggested that government should take quick steps to curb rising inflation in order to achieve the sustainable economic growth of the country.

Keywords: *Money Markets, CPI, Call Money Market, Certificate of Deposits (CD's), Commercial Papers (CP's).*

Introduction

Money Market is the important segment of our Financial System. It is that place where buying and selling operations of smaller duration take place. It is a market for securities having maturity revolving between overnight to one year.The instruments of money market are liquid due to their smaller time frame and can be quickly converted to cash and thus help in addressing the requirements of the short term surplus fund of the lenders and short term borrowing requirements of the borrowers. It can be said that money markets very well caters to the short term financial needs of the economy.

The other functions of Indian Money Market are as follows:

- Money Markets aids in implementing the monetary policy of RBI.
- Money Markets maintain demand and

** Assistant Professor, Department of Commerce, Punjabi University, Patiala*
*** Professor, Department of Commerce, Punjabi University, Patiala*

supply equilibrium of the economy.

- They help in meeting short term fund needs of the government as well.
- They provide and balance liquidity in the economy.

India has a very active money market where variety of securities are traded. In Indian Money Market, the main participants are the RBI,government banks, mutual funds , DFHI (Discount and Finance House of India), STCI (Securities and Trading Corporation of India) and many domestic institutions. The Instruments are the tools by which one can operate in the money market. Money market instrument meets short term requirements of the borrowers and provides liquidity to the lenders. The most common money market instruments are call money market, Treasury Bills, Certificate of Deposits, Commercial Papers, CBLO's (Collateralised Borrowing and Lending Obligations) ,Repurchase Agreements etc.

Money Market rates are very much volatile in our country. There are number of factors as revealed from the reviews that cause fluctuations in the short term interest rates such as : Wholesale Price Index (WPI), Consumer Price Index (CPI),Oil prices, gold price, Balance of Trade(BOT), Foreign investment in India (FII) , money supply , GDP, exchange rate,open market operations, foreign interest rates etc.

In this paper, an attempt is made to study the relationship between inflation and money market rates. The indicator used for inflation in this paper is CPI (Consumer Price Index). CPI measures price dynamics of market basket of consumer goods and services that are generally bought by consumers. It is calculated for every month. It gives us the hint of the cost of living. The CPI is a statistical tool that is constructed by using the prices of a sample of representative items whose prices are collected and analysed periodically.

Review of Literature

Christie-David and Koch (2000) in their paper examined the influence of macroeconomic news releases on futures prices of gold and silver. The study was based on secondary data. It was found that both metals reacted strongly to the release of capacity utilization. The study further highlighted that gold was influenced more by the release of the CPI figures.

Bhanumurthy and Aggarwal (2003) in their study analysed the relationship between interest rates and inflation in India. The study observed that interest rates adjust only to movements in the wholesale market prices but the relationship was not so strong. The study identified insignificant relationship between the two variables. It was concluded that interest rate in India need not focus much on the domestic inflation rate for its determination.

Ramchander; Simpson and MukeshChaudhry (2003) in their paper examined the impact of News related to inflation on the Money Market of U.S. The study was based on secondary data covering the period from January 11, 1990 to August 29, 1997 for a total of 1908 observations. It has seen the impact on five different money market securities namely Treasury bill, certificates of deposit, bankers acceptances, privately-placed commercial paper, and commercial paper placed through dealers. The study found that volatilities in all the money market securities were higher on announcement days of news than on other days. It was highlighted that interest rates variability was significantly linked to the news of Employment Situation report that is related to inflation.

Uddin (2008) in his paper made an attempt to study the relationship between interest rates and inflation rates in Bangladesh. The study was based on secondary data covering the period from August 1996 to December 2003. Ordinary Least Square (OLS) method was used to analyse the data. The study identified that the co-movement of inflation with interest rates was not strongly linked. It was found that this relationship between inflation and interest rates was not so significant in case of Bangladesh.

Pindiriri (2012) in his research paper made an attempt to find out causes of inflation in post-dollarized Zimbabwe. The study was based on secondary data. The study revealed that the interest rates were the root cause of inflation during pre dollarization period. It was found that this relationship between inflation and interest rates is insignificant after dollarization period. The study further revealed that factors like expectations of consumers, money supply, exchange rates, imports influenced post-dollarization inflation.

Research Objective

The paper aims to find out the relationship between inflation and money market rates namely Call money rate, Treasury Bills rate, Certificate of Deposits rate and Commercial Papers rate.

Research Methodology

The paper uses the monthly data of money market instruments and of Consumer Price Index (CPI) to reflect the relationship among them. The study uses secondary data from the website of RBI for the period from April 2015 to March 2017.It has used Regression Analysis to derive the cause effect relationship. Regression is calculated with the use of SPSS 16.

Data analysis and Findings

A) Call Money Rates

	Consumer Price Index (CPI)	Call Money Rates
2015-16		
April	4.9	7.44
May	5.0	7.47
June	5.4	7.11
July	3.7	7.04
August	3.7	7.07
September	4.4	7.14
October	5	6.71
November	5.4	6.78
December	5.6	6.73
January	5.7	6.81
February	5.3	6.77
March	4.8	6.93

	Consumer Price Index (CPI)	Call Money Rates
2016-17		
April	5.5	6.47
May	5.8	6.44
June	5.8	6.33
July	6.1	6.36
August	5.0	6.4
September	4.4	6.42
October	4.2	6.21
November	3.6	6.14
December	3.4	6.12
January	3.2	6.04
February	3.7	6.01
March	3.9	5.97

H0: There is no relationship between call money rates and inflation in India.

H1: There is significant relationship between call money rates and inflation in India.

Table 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.296[a]	.088	.046	.43481

Table 1 shows the strength between the dependent and the independent variable, that is CPI and Call money rates. The R square here is 8.8 per cent indicating that there is very weak relationship between the two during the period of study. But, null hypothesis cannot be accepted.

B) Certificates of Deposits

H0 : There is no relationship between mid rates of Certificates of Deposits and inflation in India.

H1 : There is significant relationship between mid rates of Certificates of Deposits and inflation in India.

	Consumer Price Index (CPI)	Certificate of Deposits (Mid Rates)
2015-16		
April	4.9	8.06
May	5.0	8.205
June	5.4	8.09
July	3.7	7.68
August	3.7	7.62
September	4.4	7.665
October	5	7.385
November	5.4	7.395
December	5.6	7.515
January	5.7	7.55
February	5.3	7.905
March	4.8	7.865

	Consumer Price Index (CPI)	Certificate of Deposits (Mid Rates)
2016-17		
April	5.5	7.45
May	5.8	7.39
June	5.8	7.16
July	6.1	7.02
August	5.0	7.005
September	4.4	6.94
October	4.2	6.72
November	3.6	6.055
December	3.4	6.245
January	3.2	6.51
February	3.7	6.44
March	3.9	6.455

Table 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534[a]	.286	.253	.52850

Data Interpretation

Table 2 indicates the relationship between the predictor and the dependent variable. In case of CD's, R square stands at 28.6 per cent. This reflects that there exists a strong correlation between them. Here, null hypothesis is again rejected as there is significant relationship between the two variables.

C) Commercial Papers

H0: There is no relationship between mid rates of Commercial Papers and inflation in India.

H1: There is significant relationship between mid rates of Commercial Papers and inflation in India.

Table 3 reveals that relationship between inflation and commercial papers is very weak because R square stands at 3.7 per cent during the period of study. It can be said that there exists a negligible relationship between the two. We can accept null hypothesis as there is no significant relationship between the two.

2015-16	**Consumer Price Index (CPI)**	**Commercial Papers (mid rates)**
April	4.9	9.935
May	5.0	9.95
June	5.4	9.475
July	3.7	9.56
August	3.7	9.81
September	4.4	9.41
October	5	9.285
November	5.4	9.365
December	5.6	9.51
January	5.7	9.225
February	5.3	9.665
March	4.8	10.245
2016-17		
April	5.5	10.055
May	5.8	9.76
June	5.8	10.19
July	6.1	10.13
August	5.0	10.215
September	4.4	10.13
October	4.2	9.14
November	3.6	9.81
December	3.4	9.34
January	3.2	10.2
February	3.7	8.615
March	3.9	9.66

Table 3

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.193[a]	.037	.007	.41929

D) 91 Days Treasury bills

H0: There is no relationship between Treasury bills rate and inflation in India.

H1: : There is significant relationship between Treasury bills rate and inflation in India.

TABLE 4 indicates the relationship between 91 days treasury bills rates and inflation rates. The value of R square is 18.1 per cent reflecting that there is a moderate relationship between the two variables. So, null hypothesis is rejected.

2015-16	**Consumer Price Index (CPI)**	**Treasury Bills Rate**
April	4.9	7.9353
May	5.0	7.8519
June	5.4	7.6851
July	3.7	7.4769
August	3.7	7.4353
September	4.4	7.0612
October	5	7.1027
November	5.4	7.1443
December	5.6	7.2274
January	5.7	7.3105
February	5.3	7.3521
March	4.8	7.2689
2016-17		
April	5.5	6.8121
May	5.8	6.8536
June	5.8	6.7292
July	6.1	6.5634
August	5.0	6.5634
September	4.4	6.5219
October	4.2	6.3563
November	3.6	5.9428
December	3.4	6.2735
January	3.2	6.2322
February	3.7	6.1495
March	3.9	5.8189

Table 4

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.426[a]	.181	.144	.55060

Conclusion

We can conclude that inflation has some considerable effect on the Indian money market rates. It has been found from the results that monthly inflation and money market rates are having significant relationship. The study revealed that inflation has the maximum impact over the interest rates of Certificate of Deposits followed by 91 days Treasury bills rate and call money rate. There is no relationship between the commercial papers rate and inflation rates during the period of study. If inflation is high, investment in money market will be adversely affected. Therefore, Indian Government should always curb the problem of inflation as it not only affects the money market but also the overall growth of the economy.

Bibliography

Bhanumurthy, N.R. and S. Agarwal (2003), “Interest Rate-Price Nexus in India”, Indian Economic Review, Vol.38, No.2, pp.189-203.

Bhole, L.M. (2003), Financial Institutions and Markets, Tata McGraw Hill Publishing Company Limited, New Delhi.

CarrenPindiriri (2012),“Monetary Reforms and Inflation Dynamics in Zimbabwe”, International Research Journal of Finance and Economics, No. 90, pp 207-222, May.

Christie-David, R., and M. Chaudhry, (2000), "January Anomalies: Implications for the Market's Incorporation of News."The Financial Review, Vol.35, No. 2, pp. 79-96, May.

Desai, Vasant (2005) , Indian Financial System and Financial Market Operation, Himalaya Publishing House, New Delhi.

Uddin, M.G.S., M.M. Alam and K.A. Alam (2008), “An Empirical Evidence of Fisher Effect in Bangladesh: A Time-Series Approach”, ASA University Review, Vol.2, No.1, pp.1-8.

Websites

www.rbi.org.in