

## RISK ELEMENTS IN MONETARY POLICY AND EFFICACY OF GOLD AS A HEDGE AGAINST INFLATION

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**Abstract:** *During the past decade, the policy makers in India have been grappling with the steep rise in CPI based inflation on one side and the declining industrial growth reflected in the IIP numbers on the other. The government as well as the Reserve Bank of India has a common agenda of maintaining the price stability and controlling inflation. However, though the goal is the same, the risk associated with the actions is different for both. The government has to consider the vote bank before taking any tough economical decisions and by maintaining liberal fiscal policies to please the masses, it has inadvertently fuelled inflation during the past decade of political uncertainty. RBI has countered the inflationary impacts of liberal fiscal policy by consistently tightening the monetary policy specially by raising the Cash Reserve Ratio (CRR) to control inflation. Raising CRR has helped bring down inflation in the short term but at the cost of sucking out liquidity from the market and hurting industrial growth. The risk of either inflation or a subdued industrial growth is therefore, inherent in the monetary policy decisions unless the government pledges to bring down inflation by abundance of supplies rather than expect the RBI to tighten monetary policy and shrink the purchasing power of people by increased interest rates and limited liquidity in market. If this has to be done, the industry needs to be promoted and encouraged to produce more by offering them tax sops and low interest capital with liberal reforms on the investment front. Having said this, the common man and the small time investor is left with the risk of losing the purchasing power of his savings and investment if the returns are not adequate to beat the inflation and taxation. The literate and cash rich investor can play the stock market with his capability to absorb the market risk but the salaried class population have limited options generally restricted to his savings in Provident Fund, Fixed deposits and the age old savior "Gold". This paper aims at identifying the risk elements in the monetary policy measures and their impact on industrial growth as well as inflation and also determines whether investment in gold is a prudent hedge against the risk of inflation.*

**Index Terms—** *Gold, Fixed Deposits, CRR, Interest rate, Fiscal and Monetary policies, Inflation, Industrial growth,.*

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## 1. INTRODUCTION

A developing country aims at achieving its macroeconomic objectives by striking a fine balance between the conflicting demands of its fiscal and monetary policies. The fiscal policy aims to increase the aggregate output of the economy while the main objective of the monetary policy is to control the interest rates and inflation. The fiscal policies are formulated by the government and have an impact on the goods market while the monetary policies are formulated by the Central Bank ie. RBI and has an impact on the asset markets. The two markets are connected to each other via the two macro variables ie. output and interest rates.

Fiscal policy under purview of the government relates to government spending and revenue collection. For example, when demand is at a low in the economy, the government can take measures to increase its spending to stimulate demand. Conversely, it can lower taxes to increase disposable income in the hands of people as well as corporations.

Monetary policy, a prerogative of RBI, relates to the supply of money, which is controlled via factors such as interest rates and Cash Reserve Requirement (CRR) for banks. For example, to control high inflation the RBI can raise interest rates thereby reduce money supply in the market.

Both fiscal and monetary policies can be either *expansionary* or *contractionary*. When policy measures are taken to increase the GDP and economic growth the policies are called expansionary. Conversely, when inflation is too high and measures are taken to control or pull back an “overheated” economy the policies are called contractionary policies and such measures are called contractionary measures.

A liberal fiscal policy would increase residual money in the hands of people resulting in increased demand thus fuelling industrial growth and increase in purchasing power would increase price and thus inflation. This would concern the RBI which would tighten the monetary policy to reduce liquidity and money supply in the market which in turn would hurt growth. Therefore, there is a dilemma in determining whether the two policies are complementary, or act as substitutes to each other or are they actually conflicting with each other in their endeavor for achieving macroeconomic goals of the nation. When the fiscal authority raises taxes to increase revenue or cuts spending to reduce deficit, then the monetary authority reacts to it by lowering the policy rates to increase money supply and vice versa. The net influence of fiscal and monetary policies would determine the purchasing power of the population and resultant growth and profitability of the industry.

During the last decade India experienced a period of relatively high growth and low inflation until the global financial crisis in 2008. The crisis adversely affected the Indian economy due to our increasing integration with the global

economy. The Government and the Reserve Bank of India took several policy measures to minimise the spillover of global crisis on our economy. In the process India's growth recovered but simultaneously, inflation also increased. More recently while growth has moderated, inflation still remains above comfort levels. In the period after the global crisis of 2008-09, inflation has emerged as a major public policy concern (Mohanty, rbi.org.in, 2014). Further, in order to please the poor and retain its vote bank, the government adopted a consistently liberal fiscal policy over burdened by subsidies which turned inflation into a poor man's nightmare. On every successive rise in inflation, the RBI stepped in deploying its monetary tools, specially the hike in CRR to tame inflation. However, sucking out liquidity by consistently raising CRR is suspected to have retarded the industrial growth due to contraction of demand leading to increase in unemployment and a slump in the economy again forcing the government to inject stimulus. Thus, a fine balancing of the fiscal and monetary measures are required. (Shahid, Taming Inflation Through CRR..., 2014)

While all the tools of monetary policy are aimed at maintaining price stability and controlling inflation, the key Risk associated with these measures is that if there is an imbalance or error in estimates, they may either stifle the industrial growth by tightening liquidity or cause a spiraling rise in inflation if the liquidity is in excess. Therefore, a common man needs to guard against inflation by judicious investment in assets which can provide an effective hedge against inflation.

## **2. OBJECTIVE OF THE STUDY**

The main objectives of this study are:-

- Identify the risk elements in the monetary policy
- Determine the impact of monetary policy decisions on inflation and industrial growth
- Determine the efficacy of investing in Gold as a hedge against inflation.

## **3. LITERATURE REVIEW**

### **3.1 Goals of the monetary Policy**

The primary purpose of monetary policy is price stability, while also maintaining the objective of growth. In India, subsequent to the recommendations of the Dr. Urjit Patel Committee Report, the Reserve Bank has officially announced a road map for reducing inflation that sets out a target of less than 8 per cent CPI inflation by Jan 2015 and less than 6 per cent CPI inflation by Jan 2016. The agreement on Monetary Policy Framework concerning the role of Government and the Reserve

Bank of India dated 20 Feb 2015 defines the price stability objective clearly in terms of the target for inflation as measured by the consumer price index-combined (CPI-C) in the near to medium-term, i.e., below 6 per cent by Jan 2016 and 4 per cent for the financial year 2016-17 and all future years. The stability of price is a necessary precondition for sustainable growth and financial stability. The relative emphasis attributed to stability in price and growth objectives in the framing of monetary policy varies from time to time depending on market conditions and the evolving macroeconomic environment. Financial stability is a very important factor for smooth transmission of monetary policy. Therefore, the regulatory policy and the financial market policy including the macroeconomic policy is generally announced simultaneously with the monetary policy. (RBI, [https://www.rbi.org.in/scripts/FS\\_Overview](https://www.rbi.org.in/scripts/FS_Overview), 2015)

### **3.2 Monetary policy framework**

The framework of monetary policy aims at setting the repo rate based on future assessment of inflation, growth and other macroeconomic risks with due modulation of liquidity conditions to hold the money market rates near the repo rate. Repo rate changes are transmitted through the money market and consequentially alter the interest rates in the financial system. This, in turn influences the aggregate demand which is a key determinant of growth and inflation. After the repo rate is announced by RBI, the execution on a day to day basis is implemented through proactive liquidity management aimed at anchoring the operating target i.e. the weighted average call rate (WACR) close to the repo rate. (RBI, RBI's data warehouse, 2014)

### **3.3 Monetary Policy Process**

The Reserve Bank's Monetary Policy Department is the one which assists the Governor in formulating or framing the monetary policy. The views of all major stakeholders in the country's economy and the advice of the Technical Advisory Committee plus the analytical work of the Reserve Bank together contribute in the process of arriving at the key decision on determining the policy repo rate. The Financial Markets Department is responsible for making the monetary policy operational through the day-to-day liquidity management process. The Financial Markets Committee meets on a day to day basis to review the consistency between money market rates, policy rate and the liquidity condition in the market. (RBI, [https://www.rbi.org.in/scripts/FS\\_Overview](https://www.rbi.org.in/scripts/FS_Overview), 2015)

### **3.4 Instruments of the Monetary Policy and their Inherent Risk**

There are several direct and indirect instruments that are used in the implementation of monetary policy. (RBI, [https://www.rbi.org.in/scripts/FS\\_Overview](https://www.rbi.org.in/scripts/FS_Overview), 2015)

#### ***3.4.1. Cash Reserve Ratio (CRR)***

This is the share of net demand and time deposits that the banks are required to maintain as cash balance with the RBI. High CRR sucks out liquidity hurting growth while low rates tend to increase inflation.

#### ***3.4.2. Statutory Liquidity Ratio (SLR)***

This is the share of net demand and time deposits that the banks must maintain in safe and liquid assets like government securities or cash and gold. Changes in SLR often influences the availability of resources like cash in the banking system for lending to the private sector thus helps in controlling liquidity.

#### ***3.4.3. Refinance facilities***

RBI provides refinance facilities for various sectors aimed at achieving sector specific objectives by providing liquidity at a cost linked to the repo rate. Enhanced liquidity implies easy availability of money and thus the risk of inflation.

#### ***3.4.4. Liquidity Adjustment Facility (LAF)***

This includes or provides for overnight money and repo and reverse repo auctions. The Reserve Bank has progressively increased the proportion of liquidity injected in the LAF through term repos.

#### ***3.4.5. Term Repos***

The Reserve Bank has introduced term repos of different tenors, such as, 7/14/28 days) since October 2013, to inject liquidity over periods more than overnight. The term repo is aimed to help develop interbank money market. This helps in setting the benchmarks for pricing of loans and deposits and thereby improves transmission of monetary policy.

#### ***3.4.6. Marginal Standing Facility (MSF)***

This is a facility wherein the scheduled commercial banks are able to borrow additional amount of overnight money from the Reserve Bank by drawing from their SLR portfolio up to a limit at a penal rate of interest. This acts like a safety valve against unanticipated liquidity volatility and shocks to the banking system. MSF rate and also reverse repo rate are the ones which determine the corridor for day to day movement in short term money market rates.

#### ***3.4.7. Open Market Operations (OMOs)***

These operations are primarily the outright sale and purchase of government securities. The monetary risk is controlled by injection or absorption of liquidity.

### **3.4.8. Bank Rate**

It is the rate of interest at which the RBI is willing to rediscount or buy bills of exchange and other commercial papers. This rate is aligned to the MSF rate and changes automatically as and when the MSF rate changes along with the policy repo rate changes.

### **3.4.9. Market Stabilisation Scheme (MSS)**

This instrument or scheme for money management was introduced in 2004. This scheme enables absorption of excess liquidity of a more lasting nature arising from large capital inflows through sale of short term government securities and treasury bills. The cash thus mobilised is kept in a separate account with the RBI. The instrument thus has features of both the SLR as well as CRR and Inflationary risk is partially managed by these measures.

### **3.4.10 Transparency in Monetary Policy**

Transparency in monetary policy is required for making it more predictable and effective communication is required to obviate unwarranted apprehensions about monetary policy. The RBI from time to time explains the rationale of its monetary policy stance in a very transparent manner and also provides forward guidance on the near term likely move of monetary policy to control the uncertainty arising from volatile market expectations. RBI also emphasises a consultative approach in policy formulation while enjoying autonomy in policy operations. From the time of announcing the first bimonthly statement of monetary policy in April 2014, the RBI has changed the earlier frequency of monetary policy announcements from four quarterly and four mid quarterly to six times per year ie. twice a month. (RBI, <https://www.rbi.org.in/scripts/FS-Overview>, 2015)

## **4. THEORY AND EMPIRICAL METHODOLOGY**

### **4.1. Key elements of Monetary Policy**

The key elements of the Monetary Policy are:-

#### **4.1.1 Policy Rates**

1. Repo Rate
2. Reverse Repo Rate

#### **4.1.2 Reserve Rates**

1. CRR

2. SLR

**4.1.3 Exchange Rates**

**4.1.4 Lending and Deposit Rates**

1. Base Rate
2. Savings Deposit Rate
3. Term Deposit Rate

**4.1.5 Market Trends**

1. Money Market/ Call Rates
2. Government Securities
3. Capital Market

**4.2 Risk Involved in monetary Policy Decisions**

**4.2.1 Purchasing Power**

The injection or withdrawal of liquidity through monetary policy decisions either leave more money in the hands of people or tighten their hands. If the purchasing power of masses increase, it tends to raise inflation while tightening their hands will hurt industrial growth

**4.2.2 Lending and Borrowing**

When loans are cheaper, people borrow more and spend more. This aids growth and banks are also able to increase their turnovers. But it has an inherent risk of inflation unless the supplies match the demand.

**4.2.3 Exchange Rate**

When the domestic currency strengthens, it discourages exports and vice versa. Rising dollar is detrimental to imports and India being a large importer of crude, the fuel price rises leading to further inflation.

**4.2.4 Inflation**

Inflation risk is the major inherent risk in monetary policy decisions. The whole mechanism of controlling liquidity by means of monetary tools is aimed at controlling inflation.

## 5. RESEARCH METHODS

### 5.1 Data Collection

The data utilised is secondary in nature and has been obtained from the regular web address of Reserve Bank of India, Ministry of Finance and other sources as well as data published in RBI periodicals. The empirical data has been collected over a period of time has been, systematically collated and then analysed to arrive at findings and conclusions.

### 5.2 Period of Study.

The monetary policy and inflation figures published periodically from Jan 2000 to Dec 2015 have been considered. The base line for Index of Industrial Production (IIP) numbers was revised in 2005 and therefore, the IIP figures since 2005 have only been considered. Gold rated and interest rates have been considered from 2000 to 2015.

### 5.3 Research Tool

Being a statistical econometric study, Karl Pearson's Coefficient of Correlation (Covariance method) has been employed to determine the variation in inflation and IIP figures as a result of variation in CRR. Mathematically (Kothari, 2011):-

$$r = \frac{\text{cov}(x, y)}{\delta x \delta y} \quad \text{For N pair of observations } (x_1 y_1), (x_2 y_2), \dots, (x_n y_n),$$

$$r = \frac{\sum[(x - \bar{x})(y - \bar{y})]}{\sqrt{\sum(x - \bar{x})^2 \sum(y - \bar{y})^2}}$$

$$r = \frac{\sum(\delta x \delta y)}{\sqrt{\sum(\delta x)^2 \sum(\delta y)^2}}$$

Where,

$r$  = Karl Pearson's coefficient of Correlation

$\delta x = x - \bar{x}$  and  $\delta y = y - \bar{y}$ ,

The Probability of error is represented by:-

$$PE_{(r)} = \frac{0.6745(1 - r^2)}{\sqrt{N}}$$

If the value of  $r$  is less than PE then it is

Considered as insignificant



## 5.4 Analysis Technique

The method of analysis has been kept in synch with the previous research and the philosophy is to validate the impact of changes in CRR and quantify the returns from fixed deposits and investment in gold in light of inflation.

## 6. FINDINGS AND RESULTS

### 6.1 Effect of changes in CRR on IIP figures

A result of study conducted on the impact of increase in CRR on the IIP figures over intervals of 180 days, 270 days and 360 days from date of change is illustrated at

Type of Goods	Karl Pearson's Coefficient of Correlation (r)			
	At 180 days from date of change of CRR	At 270 days from date of change of CRR	At 360 days from date of change of CRR	Inference. (Effect of Change in CRR on IIP Nos)
Basic Goods	-0.44209828	-0.406468996	-0.53235263	Max after a year
Capital Goods	-0.143849008	<b>-0.294023205</b>	-0.222174378	More or less uniform
Intermediate Goods	-0.585710072	-0.474945602	-0.500900209	More or less uniform
Consumer Goods	-0.353708124	-0.205919051	<b>-0.463322646</b>	Max after a year
Consumer Durables	<b>-0.337128066</b>	-0.199372085	-0.20215255	Max after at 180 days
Consumer Non Durables	-0.20762844	-0.143277655	<b>-0.57084224</b>	Max after a year

A comparison of correlation between CRR and IIP figures obtained at regular intervals of 3 months from the date of change in CRR reveal the following:- (Shabbar, 2014)

6.1.1 The first and the most important finding of this research is that an inverse correlation does exist between variation in CRR and corresponding variation in IIP numbers. Further, it is an assertion of the suspicion of previous research that this inverse correlation becomes significant in the long run beyond 180 days from

the date of change of CRR. This also confirms the belief that though an increase in CRR to curtail inflation does not have a significant adverse effect on industrial production in the short period of 90 days; it does retard the industrial growth over longer periods of 180 days and beyond. (Shahid, Taming Inflation Through CRR and its Impact on Industrial Growth in India, 2014)

6.1.2. The second most important finding as seen from table 4 is that the adverse effect of increase in CRR on the basic goods and consumer non durables is max after a year from the date of increase in CRR while the effect on consumer durables is max after six months and thereafter, it stabilises. This shows that when liquidity is reduced in the market and cash at the disposal of people reduces, they sacrifice on purchase of consumer durable items ie TV, Refrigerator, Air conditioners, washing machines etc. relatively early while the consumption of basic goods like steel, cement etc and consumer nondurables like soaps, detergents and toiletries reduce gradually and takes a year to dip the max.

6.1.3. Another important finding is that the correlation of CRR with the IIP numbers of capital goods, though inverse is minimum as compared to other goods and that too is more or less uniform over the entire period of a year. This could be so due to the fact that the capital goods industry is capital intensive requiring huge investments and incurring huge fixed cost in production which makes it unviable to reduce production drastically unless the contraction of demand is permanent or long term in nature. Moreover, the major requirement of credit for capital goods industries is for their capital expansion and comparatively very little for their working capital. Therefore, reduction in bank credit due to increase in CRR has marginal effect on capital goods industry over a year. Notwithstanding, the correlation is indeed inverse and significant and therefore, may have a severe impact in the longer duration if CRR is increased consistently.

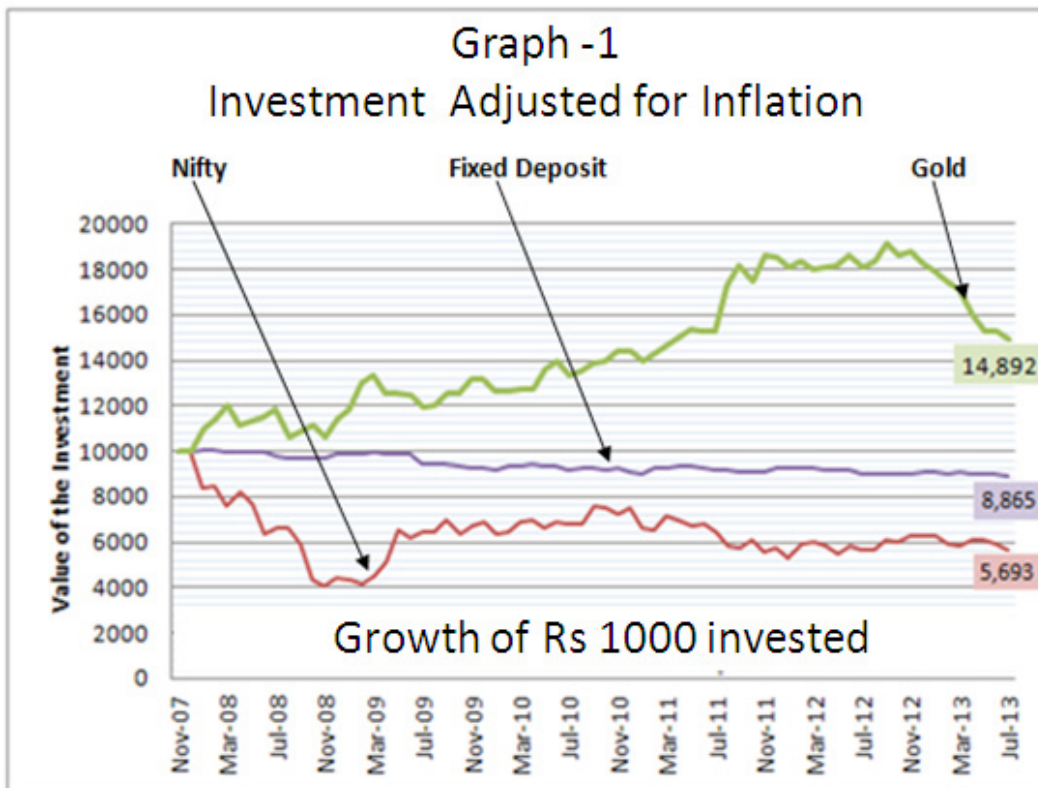
6.1.4. A logical inference reveals that it is not prudent to increase CRR consistently in order to tame inflation as it hurts all types of industries in varying degree over a period beyond 180 days and beyond.

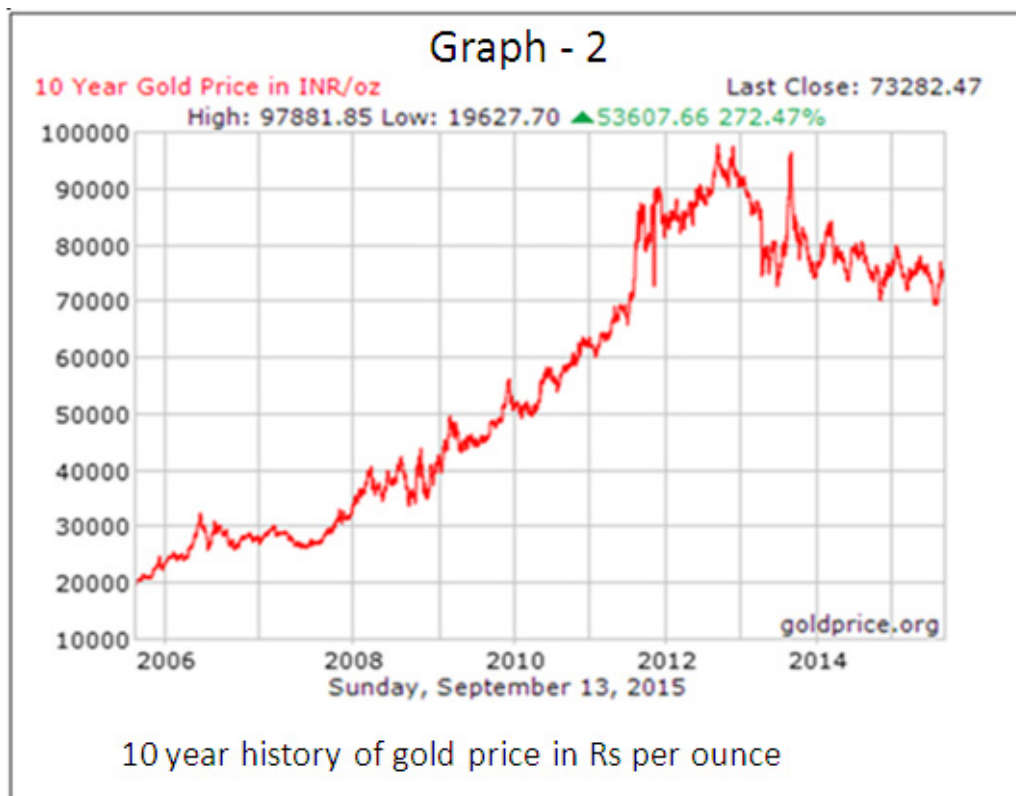
## 6.2. Effect of Inflation on Investment in Equity, FDs and Gold

**Table 2**  
**Comparison of Returns on Investment in FD and Gold**

S. No	Year	CPI Inflation %	% Returns on		
			FD for 1 to 3 years	FD for 3 to 5 years	Gold
1.	Mar 2000	2.53	8.5 to 10.5	10 to 10.5	3.92
2.	Mar 2001	5.17	8.5 to 10	9.5 to 10	2.27

3.	Mar 2002	4.06	7.55 to 8.5	8 to 8.5	16.05
4.	Mar 2003	3.49	4.3 to 6.3	5.5 to 6.25	12.22
5.	Mar 2004	4.17	4 to 5.5	5.25 to 5.50	4.46
6.	Mar 2005	4.57	5.3 to 6.3	5.75 to 6.25	19.66
7.	Mar 2006	6.72	6 to 7	6.25 to 7	20.00
8.	Mar 2007	7.87	7.5 to 9	7.75 to 9	28.57
9.	Mar 2008	8.03	7.5 to 9	7.75 to 9	15.74
10.	Mar 2009	14.86	7.8 to 8.8	7.75 to 8.5	16.00
11.	Mar 2010	8.82	6 to 7.5	6.5 to 7.5	27.59
12.	Mar 2011	8.65	7.8 to 9.5	7.75 to 9.5	42.70
13.	Mar 2012	11.44	9.25	9.25	3.41
14.	Mar 2013	6.70	9 to 9.5	9 to 9.25	16.25





The inflation adjusted returns on Rs 10000 invested in Equity (Nifty), Fixed deposit (PPF) and Gold is illustrated at graph 1 (Capital mind.in) and a 10 year gold price graph is illustrated at graph 2 (Gold Price). A comparison of returns on investment in FD and Gold without adjusting for inflation is illustrated at table 2. (Money Excel)

Investments have inherent expenses like brokerage and STT on equity transaction, income tax on the FD interest and capital gains tax on gold. Presumed that the expenses incurred on the investment remain same for equity, FD and gold, the following is revealed from the data:-

6.2.1. When adjusted for inflation, Fixed deposits in fact gives a negative return. It is therefore, not advisable to invest in fixed deposits from economic point of view. However, it may be noted that FDs offer a 100% safety with limited liquidity.

6.2.2. Gold gives an erratic return. Some time it is as low as 2.27 % while at times it is as high as 42 %. In 2000 and 2001 the investment in FD proved better since the inflation was low. From 2000 to 2008, gold gave a better return while investment in FD was just adequate to beat inflation. If taxation is considered, the

returns would be negative. was better than in gold. Therefore, investment in gold should be for a long term.

6.2.3. Gold provides adequate liquidity with limited risk and has consistently beaten inflation. Therefore, Gold can be considered as a reasonable hedge against inflation risk.

## **7. LIMITATIONS OF THE STUDY**

This study is characterized by the following limitations:-

- Effect of CRR on inflation is considered in isolation keeping other fiscal and monetary measures as constant
- Domestic & global market conditions are ignored.
- The statistical tool used for analysis assumes a linear relationship between the variables and gets affected by extreme values of the variables

## **8. CONCLUSION**

The liberal fiscal policies of the government and subsidy burden fuels inflation and RBI is often criticized for hurting industrial growth when it attempts to tame inflation by raising CRR. From a detailed statistical analysis it emerges that the CRR is an effective tool in taming inflation and its adverse effect on industrial growth are too small to be of any significance in the short term. However, it is established that increasing CRR sucks out liquidity from the market and repeated increase in CRR may hurt the industrial growth in the long run. Alternate measures like improving the supplies must be explored to tame inflation in the long run.

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