A

PROJECT REPORT

ON

“Forecasting the impact of inflation on bank’s profitability”

IN

BANK OF MAHARASHTRA, SATPUR, NASHIK

SUBMITED BY,

(_____)

(FINANCE MANAGEMENT)

FOR PARTIAL FULFILMENT OF

MASTER IN BUSINESS ADMINISTRATION
(20 -20)

UNDER THE GUIDANCE OF PROF. _____.

FROM

(INSTITUTE NAME)

UNIVERSITY OF (_____)

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DECLARATION

I (_____), a student of MBA (20 -20) hereby declare that the, project report entitled

"Forecasting the impact of inflation on bank's profitability"

is the authentic work done by me at

BANK OF MAHARASHTRA, SATPUR, NASHIK.

Report is submitted in partial fulfillment of the requirement of the award of Master of Business Administration (M.B.A.) degree abide by Pune University rules.

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(_____)

MBA (Finance Management)

ACKNOWLEDGEMENT

Devotion is important, knowledge is important, but this knowledge, devotion will be fruitless if these factors are put in the wrong direction. So we desperately need a guide to make our way clear in foggy situations. I have utilized this valuable suggestion in making my report attractive and accurate. I am greatly indebted to all those, whose suggestion has formed the bases of this report.

Firstly I would like to thank Mr._____**(Chief Manager) Bank of Maharashtra, Nashik,** for giving me the opportunity to work on this project.

Further, I extend my thanks to **Mr._____ (Branch manager) Bank of Maharashtra, Satpur, Nashik,** for being the source of inspiration and guidance to me. It was their help and cooperation, which made me complete my project.

I am highly indebted to **Prof. _____ (Director)** for his invaluable cooperation and his unending support, for guiding me at every step.

Finally I would like thank to all respondent for their helpful criticism and useful suggestions, which contributed towards successful completion of my project.

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(_____)

MBA (Finance Management)

1.1
Object of the project.

It is customary that under two years of full time course of MBA degree, a Student has to undergo different training programmes so as to establish him capable of managing his job after the completion of the degree. One of such program is preparation of the project report, which a student has to take in joining a specific organization of choice for a specific period depending upon specialization he/she has opted for.

The main objective of carrying out this project is to know and gain practical knowledge and to know the organizations working culture.

The purpose of this project is to know the operations of the organization so as to do the thorough study. The project study also provides an opportunity to develop communication skill, analytical skill and also expose to the organizations culture and the actual working of the organization.

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1.2
Objective of the project.

- To collect the financial information from the bank so as to evaluate performance of the bank in future.
- To compare the future estimate with the past and sort the trend for performance.
- To know the impact of change in CRR and Repo rate on interest rate and thus the effect on performance of the bank.
- To be able to apply the theoretical knowledge obtained at the institute in practical manner in the actual business environment.
- To identify key elements in process having greater effect on performance of the bank during high inflation period.
- To get the knowledge about organization problems, perceptions and challenges and suggest remedies practically possible.
- To get an opportunity of real life business experience.
- To interact with the managers of the company and gain knowledge through their real life experience.

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1.3
Selection of topic.

Indian economy has been experiencing an impressive growth in recent years. India's GDP expanded by 9 percent in 2007-08, making it the third year in a row when the economy grew at or more than 9 percent .This prompted many economist to say that country's economy had changed gears and moved permanently in to higher growth trajectory. It was also thought that India growth story, driven largely by domestic demand and consumption, was insulated from global trends. The growth figures till the beginning of 2008 appeared to bear out these theses and it seemed that the economy would continue to clock strong growth for several years to come. Then, storm clouds started gathering over the global economy. The sub-prime crises sparked off slow down in US. And the runway rise in the global prices of crude oil, metals and food began to hit home. The growth rate in output and employment has put pressure on the level of inflation. The domestic economy is buffeted by a double whammy in the form of high inflation –which hit a thirteen year high of 11.05 percent for the week ended June 7, 2008- consequently high interest rates. These have combined to significantly slow down consumer demand and thus slowdown of economy to a bit. But this rise in interest rate also has led to boom in deposit rates so as to curb negative interest **RATES**. Thus to study the impact of inflation on interest and deposit rates, and to know the effect on banks profitability this topic is been selected. Thus to realize the effect of tightening of monetary policies to curb he inflation as a first line of defense, on the bank, and estimating the future aspects of the banks profit margin, the topic is selected.

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1.4
Scope of the study.

Inflation though is less preferred, it is mandatory so as to result in excel of economy. Without inflation it's nearly impossible for any economy to boom. But anything in excess is always detrimental. So to know what proportion of inflation basically is required for well fare of economy and performance of an financial intermediary (Banks), the project is been taken into consideration. This will not only brief the institutions over the past trends but also the forecasting of profitability due to high inflation which will make banks to undergo strategies beforehand so as to avoid losses before hand. This will also make aware even of the worst that may happen in future, and thus will be able to suggest any remedies if possible, or to take precautionary methods.

Thus the scope of the project is very wide and will provide a helpful hand in banks performance and indirectly to growth of economy.

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1.5
Research methodology.

Appropriate methodology is an essential characteristic of quality research studies irrespective of the discipline to which they are related. The research is totally dependent on the data which has to be collected through various methods. The following are the types of data….

Primary Data – Primary data was collected by negotiating with the bank manager and The supporting staff.

Secondary Data – Secondary data was collected on basic of Official records (statistical records from RBI bulletins).

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1.6
Limitations of the project.

- As our research is based on assumptions, and as future is uncertain, the values may differ and hence the result. Thus the research basically depends on the probability that our assumptions are found to be true in future.
- The data obtained is as per mentioned in the RBI bulletins and are subject to be faulty at times.
- The time limit for completing the project was less which forced not to consider each and every factor to consider into account and thus limits the accuracy of the analysis.
- As due to organizations rules and regulations, some factors that were to obtain directly from the customers was not obtained, which further led to assumptions.
- Last but not the least, every tool has its own limitations, and thus the accuracy of our project is also limited.

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2.1
Bank of Maharashtra

The Birth.

Registered on 16th Sept 1935 with an authorized capital of Rs 10.00 lakh and commenced business on 8th Feb 1936.

The Childhood.

Known as a common man's bank since inception, its initial help to small units has given birth to many of today's industrial houses. After nationalization in 1969, the bank expanded rapidly. It now has 1375 branches (as of 31st March 2008) all over India. The Bank has the largest network of branches by any Public sector bank in the state of Maharashtra.

The Adult.

The bank has fine tuned its services to cater to the needs of the common man and incorporated the latest technology in banking offering a variety of services.

Our Philosophy
Technology with personal touch.

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Our Emblem

The Deepmal
With its many lights rising to greater heights.

The Pillar
Our institution- Symbolising strength.

The Diyas
Our Branches- Symbolising service.

The 3 M's
Symbolising

- Mobilisation of Money
- Modernisation of Methods and
- Motivation of Staff.

Our Aims.

The bank wishes to cater to all types of needs of the entire family, in the whole country. Its dream is "One Family, One Bank, Bank of Maharashtra ".

The Autonomy.

The Bank attained autonomous status in 1998. It helps in giving more and more services with simplified procedures without intervention of Government.

Our Social Aspect

The bank excels in Social Banking, overlooking the profit aspect; it has a good share of Priority sector lending having 38% of its branches in rural areas.

Other attributes.

Bank is the convener of State level Bankers committee.
Bank offers Depository services and Demat facilities at 131 branches.
Bank has a tie up with LIC of India and United India Insurance company for sale of Insurance policies.
All the branches of the Bank are fully computerised.

Our Future Plans - Vision 2009.

- To cross the Business Level of Rs.85,500/- Crores by March 2009.
- 19.84% Growth in Savings Bank Deposits and average Saving Deposits growth rate of 17.69%.
- 19.65% Growth in Current Deposits and average Current Deposits growth rate of 17.29
- Systematic approach for reducing Net NPA level to below 1%

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- 64 Branches are proposed to be opened at new business centres and 3 extension counters to be converted into full fledged branches.
- 4 Currency Chests to be opened.
- ATM network to be increased from 345 to 500
- Biometric ATMs to be introduced at selected branches.
- Introduction of Internet banking, Mobile banking and Phone banking.
- SHGs with special reference to agriculture to be promoted and financing be implemented so as to increase financing to small and marginal farmers.
- Financial Inclusion to the unbanked section of the population.

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2.2
Products offered by the organization.

1) Mahabank deposit schemes.
- Mahabank savings bank schemes.
- Mahabank yuva yojna.
- Mahabank lok bachat yojna.
- Mahabank swastha yojna
- Mahabank current account scheme.
- Recurring deposit schemes.

2) Mahabank loan schemes.
- Adhar schemes.
- Agriculture loan schemes.
- Consumer loans.
- Personal loans.
- Education loans.
- Import finance.
- Export finance.

3) Mahabank services.
- Credit card.
- Collection of direct taxes.
- Locker services.
- Mahabill pay schemes.
- Visa debit card.
- Family banking card.
- DEMAT services.

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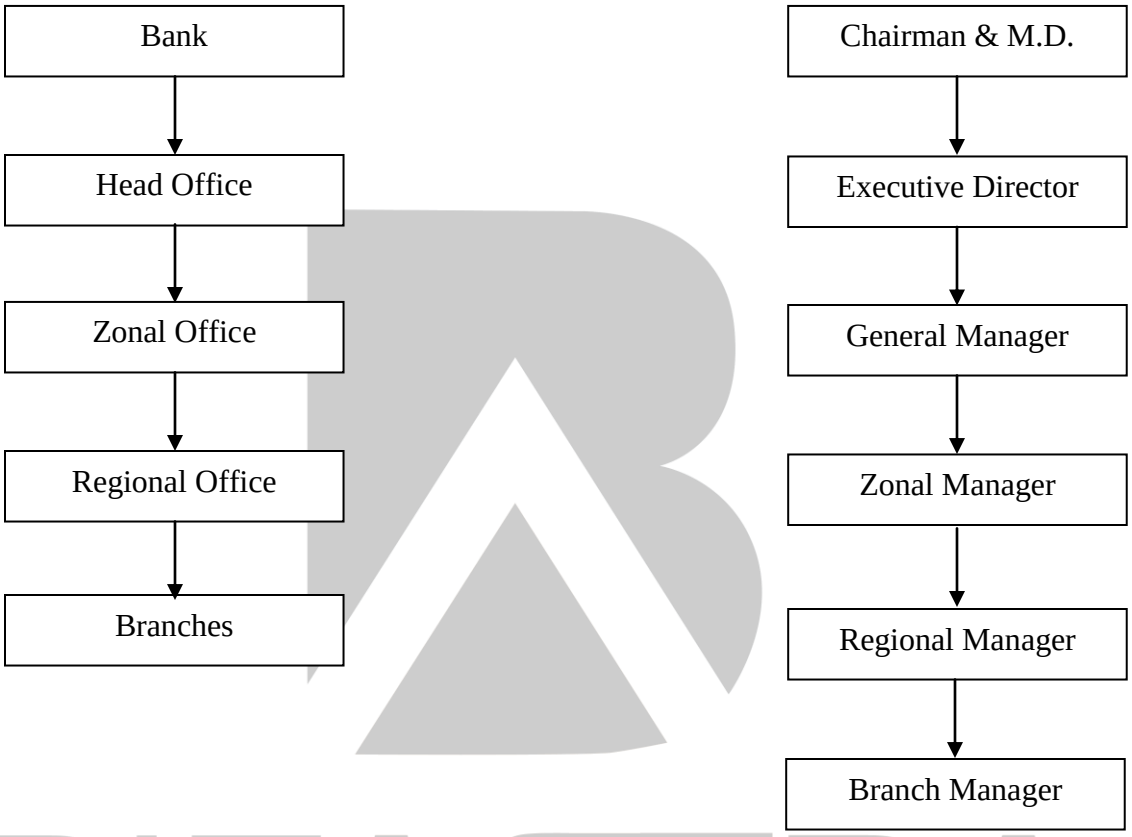
2.3
Organization chart.



(A) (B)

(A) Basic organization structure of any commercial bank.

(B) Organization structure of Bank of Maharashtra.

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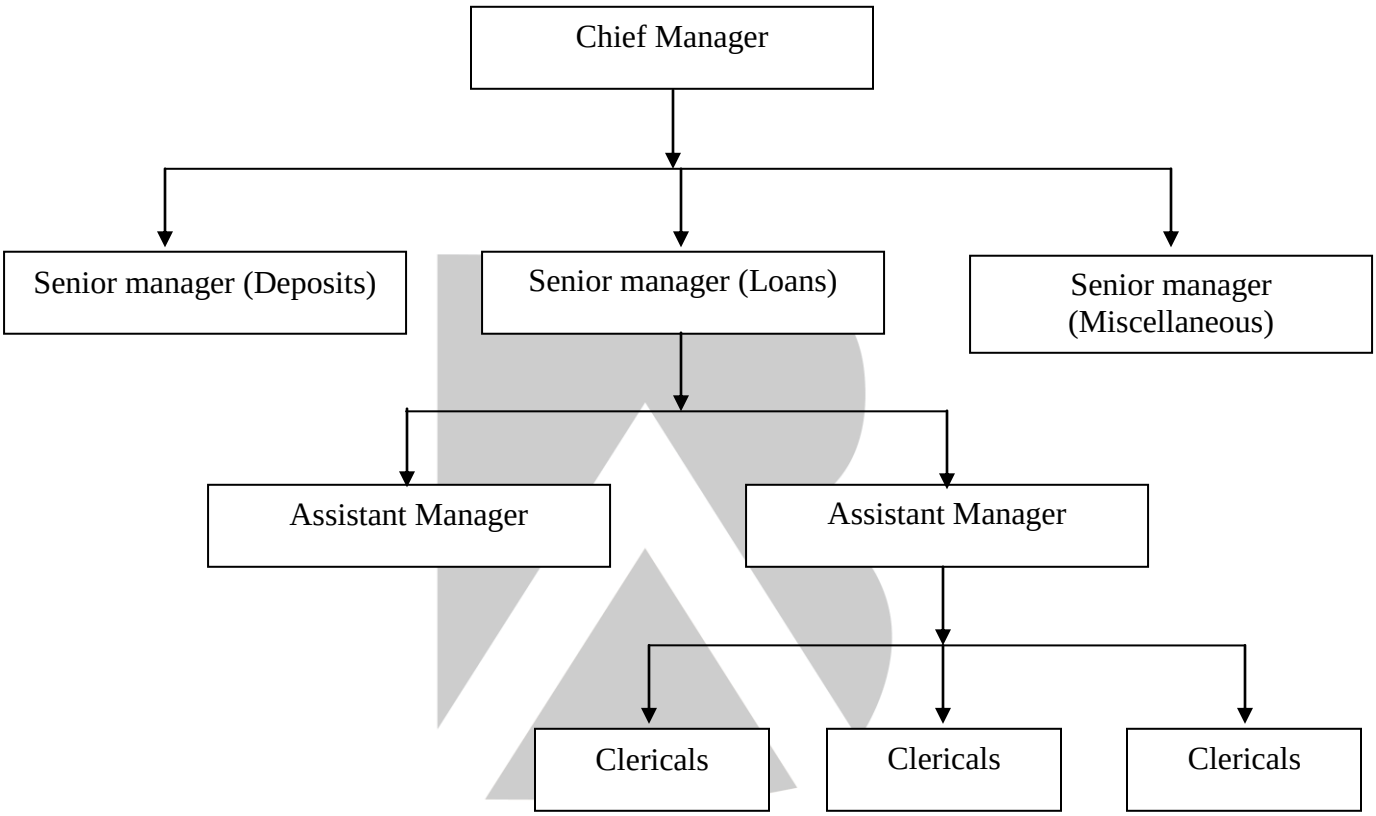
Organizational structure at branch level is as follows:



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3.1
Topic anatomy…….

Selection of topic :

Indian economy has been experiencing an impressive growth in recent years. India's GDP expanded by 9 percent in 2007-08, making it the third year in a row when the economy grew at or more than 9 percent .This prompted many economist to say that country's economy had changed gears and moved permanently in to higher growth trajectory. It was also thought that India growth story, driven largely by domestic demand and consumption, was insulated from global trends. The growth figures till the beginning of 2008 appeared to bear out these theses and it seemed that the economy would continue to clock strong growth for several years to come. Then, storm clouds started gathering over the global economy. The sub-prime crises sparked off slow down in US. And the runway rise in the global prices of crude oil, metals and food began to hit home. The growth rate in output and employment has put pressure on the level of inflation. The domestic economy is buffeted by a double whammy in the form of high inflation –which hit a thirteen year high of 11.05 percent for the week ended June 7, 2008- consequently high interest rates. These have combined to significantly slow down consumer demand and thus slowdown of economy to a bit. But this rise in interest rate also has led to boom in deposit rates so as to curb negative interest **RATES**. Thus to study the impact of inflation on interest and deposit rates, and to know the effect on banks profitability this topic is been selected. Thus to realize the effect of tightening of monetary policies to curb he inflation as a first line of defense, on the bank, and estimating the future aspects of the banks profit margin, the topic is selected.

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Basics

- **What are Interest rates ?**

  In the context of inflation interest rates refer to the bench mark rates such as federal fund rate that the central bank uses to control the money supply. By imposing higher interest rates, the Central bank effectively curtails the ability of the banks to lend money to their customers. How? The interest rates force banks to increase their own interest they charge to customers. These refer to interest charge on say housing, cars. If for example, you were planning to buy a house and was thinking of taking out a bank loan, you might back out if you discover that the interest rate on housing loans has increased. In that case, the money that should have been loaned to you is retained by the bank and does not flow in the market. Banks may also decide to increase their interest on deposit accounts. With higher rates, people might think twice about spending and decide to only save. By saving the supply of money in the market becomes more limited.

- **How are inflation and interest rates related?**

  With less money to spend and weaker purchasing power, people can buy only fewer products compare to before. As a consequence, demand for the product declines. When supply exceeds demand, seller will opt to lower their prices in order to sell their product. When prices are lowered inflation rates goes down too. So there, by imposing higher interest rates, the bank can control inflation.

- **What are drawbacks of higher interest rates?**

  Due to higher interest rates, business activity in the market slows down. The threat of interest rates make individual and companies defer taking out loans which could have been used to, say, finance a new business or would build a house. Less economic activities translate to slower economic growth. Low growth means reduced company investments, less job opportunities, or worse, lay-offs of the existing employees, which is certainly not good.

- **What is repo and reverse repo?**

  Repo is short for repurchase. To tide over the cash crunch, the banks seek money through the computer screen based negotiable dealing system(NDS) run by the RBI. For the loan they pay an interest rate...so called repo rate. Only primary dealers and banks have access to this repo window. Banks deposits the government securities in lieu of loan from the RBI, while in reverse repo, RBI gives treasury bills and takes cash from the banks. Repo drains money from the banking systems and reverse repo infuses. All treasury department of banks have the NDS screen. The money is lent overnight, and 3 days on weekends. This is different from the call money, which is clean lending of money for one day—there is no collateral,so it's unsecured.

- **Why hike repo?**

  The RBI may be feeling it's a bit behind the curve in fighting the inflation, impact of oil prices and falling rupee. With the liquidity situation now comfortable, it raised the repo

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rate, giving an explicit signal that interest rate are heading higher, be it on loans or deposits. It may have also been persuaded by the fear that inflation may soon touch the double digits and real interest rates, which are nearly negative, may become more so, hurting the economy.

- **Why CRR hike avoided?**

The cash reserve ratio, or the percentage of deposits banks have to compulsorily park with the RBI, only been hiked for two reasons when : liquidity is optimal(so hike will reduce it), and corporate advance tax outflows which begins on June 15, which automatically reduce liquidity.

- **What is relation between CRR and inflation?**

There is no direct cause and effect relationship between between CRR and Inflation. There is a school of economic thought that if the economy is in or near full employment of resources like productive capacity and labor, prices tend to rise if the money supply increases. Higher money supply means higher the demand for goods and services. This link is provided through the concept of money multiplier. Money supply is measured by various indicators: the most used measurement of money is currency incirculation with the public plus checkable demand deposits on which there is no withdrawal restrictions (in India we call them current account) plus a percentage of savings and fixed deposits because even these deposits can be withdrawn at short notice. Thus, if the deposits increases money supply increases in the first round by the amount of increase in deposits(100 % in the case of current deposits a lower percentage in case of other deposits). But as the deposits increase, the banks try to increase their loans so that they can earn income and increase their profits. However they cannot increase the loans exactly by the amount of the extra deposits they receive. This is because they have to keep some cash or liquid investments(like in short term government securities that can easily sold in the market to get cash)with them should the depositors need to withdraw cash. The reserve bank of India stipulates that no bank should run out of cash when the depositors want to withdraw cash from their deposit accounts. This minimum requirement imposed by RBI is cash reserve ratio or CRR that banks have to maintain. CRR is fixed a percentage of deposit liabilities of the banks. Let us say that the CRR is 10%. So, when a bank receives a deposit of Rs 100, it can extend a loan of Rs 90 keeping the balance Rs 10 in cash reserve. But when bank lends it does not give out cash. It creates a loan account in which it credits the loan amount as the deposits of the loanee. So, the bank's deposits increase by Rs 90 immediately. Now the loanee does not withdraw all the money in cash. The loanee, say a company, makes payments to its suppliers of input and salaries to labor in checks. So the bank keeps 10% of Rs 90 in cash reserve and again makes a loan account with the remaining money of Rs 81 and therefore creates another deposit of Rs 81. This process of deposit and loan creation continues, till the sum of all these deposits becomes so big that the original deposit of cash of Rs 100 becomes only 10% of the total deposits created by loans. Thus if CRR is 10% and the initial deposit is Rs 100, the bank can actually increase the deposits by Rs(100/0.10)=Rs1000, consisting of the initial deposit of Rs 100 and successive loan based deposits of Rs 900.(90+81+…..+…..).Now when the reserve bank thinks that the inflation is rising it wants the money supply to go down. So, it raises the CRR. Let us say that the CRR is raised by 20%... now the banks ability to create loans and deposits get

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reduced. With Rs 100 initial deposit in cash it can now create total deposits of Rs(100/0.20)=Rs 500. So the money supply now can increase by Rs 500 rather than Rs 1000. Thus by raising the CRR the reserve bank of India is able to curb the credit growth, deposit growth and the money supply growth. RBI expects with the slower growth in money supply, the credit or advances of the bank will grow at a slower pace and hence the demand for goods and services will grow at slower pace and therefore the inflation rate will come down. It may be noted when thw banks can expand loans at a lower rate, they would raise interest rate so that they give loans to borrowers who are capable of paying higher interest rates. This therefore reduces the demand for loans as well. Slower loan growth implies slower expansion of goods and services in the economy. Thus the pressure on price to rise goes down. This is briefly the long indirect relationship between CRR and inflation. In this illustration for simplicity we have talk of CRR being raised from 10% to 20%. In actual practice the changes in CRR is normally by one or one-half percentage from say an increase from 7% to 7.5% or 8%.

- **What is monetary policy?**

Monetary policy can be summarised as the central bank's actions too influence the availability and cost of the money and credit in the economy. The primary objective of these actions is to ensure price stability.

Monetarist assert that the empirical study of monetary history shows that the inflation has always been a monetary phenomenon. The 'Quantity Theory of Money' simply stated, says that the amount of spending in an economy is primarily determined by the total amount of money in existence. From this theory the following formula is created(P=Dc/Sc) where p is the general price level of the consumer goods, Dc is the aggregate demand for consumer goods and Sc is the aggregate supply of consumer goods. The idea is that general price level of the consumer goods will rise only if aggregate supply of consumer goods falls relative to aggregate demand for consumer goods , or if aggregate demand increases relative to aggregate supply. Based on the idea that total spending is based primarily on the total amount of the money in existence, the economist calculate aggregate demand for consumers , goods based on the total quantity of money. Therefore they posit that as the total quantity of money increases, total spending increases and aggregate demand for the consumer goods increases too. For this reason, economist who believe in the quantity theory of money also believe that the only cause of rising prices in a growing economy(this means that the aggregate supply of consumer goods is increasing)is an increase in quantity of money in existence, which is a function of monetary policies, generally set by Central banks that have a monopoly on the issuance of currency, which is not pegged to a commodity, such ass gold. The central bank of the United States is the federal reserve; the central bank backing the euro is European Central Bank. No one denies that inflation is asociated with the excessive money supply, but opinions differ as to whether excessive money supply is the cause source.

- **How does it work?**

As an illustration, consider that the economy is growing too fast. This is also referred to as overheating of the economy; a situation that typically happens in the boom phase when GDP(gross domestic product) growth exceeds the long term growth potential of the economy. The producers of goods are not able to make enough goods to meet the rising demand. The demand –supply mismatch creates inflationary pressures in the ecconomy.

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This situation is regarded as unstainable, as the high growth translates into higher inflation. In this situation , RBI raises the interest rates to depress spending and reduce the pressure on inflation.

And in the opposite?

Conversely,when the economy is growing too slowly, interest rates are reduced to stimulate demand.

Does economic growth demand monetary policy?

Monetary policy is essentially a stabilization policy. It is not intended to influence the long term growth potential of the economy, but aims at ironing out the fluctuations in the economy also referred to as business cycles. This is done to minimise fluctuations and ensure a sustainable mix of growth and inflation in the economy.

- **What are instruments of the monetary policy?**

The central bank can influence the cost and availability of credit in the economy by altering the repo/reverse repo rates, changing the reserve requirements(CRR), and engaging in the open market operations.

Which works better: CRR or Repo?

Unlike repo and reverse repo rates, which act as a signaling device, CRR is a blunt instrument that directly acts on liquidity. By raising CRR, RBI directly sucks out liquidity from the system and directly puts upward pressure on interest rates.

- **What does RBI do when openly operating in the market?**

It sells and buys government securities. These operations are called as open market operations (OMO). When inflationary pressures exists, the RBI sells securities to mop up cash from the system; and vice-versa in case of tight liquidity/shortage of funds.

- **What is transmission mechanism? How it works?**

It is 'how' of monetary policy impacting the economy through various channels, directly as well as indirectly.

At the cost of simplification, let us take an illustration. Assume that inflation is rising in the economy and RBI, to tackle it, decides to signal a rate hike by raising the reverse repo rate. This reduces the money supply in the economy as banks are induced to park their cash with the RBI. That puts presssure on the longer term interest rates in the economy- for example, the lending rates for housing, consumer loans, etc. These rates tend to go up. The impact of RBI actions on longer term commercial rates also depends on the expectations of financial market participants, which are shaped by both actions and statements of the central bank.

- **Is there any flip side to controlling inflation?**

Continuing the example, higher interest rates discourage consumption and investments, lending to reduced aggregate demand (GDP growth) in the systems. As a consequence of reduced demand, the pressure on inflation eases. The policy objective of reducing the inflation is achieved but at a cost of growth. This is often referred to as the 'Growth-Inflation trade-off'.

- **How long does it take monetary policy to attain its objective?**

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Monetary policy impulses do not impact the real sector and inflation immediately but with a lag, which varies across countries and sectors. In economies such as the US, the lag of monetary policy transmission to the real sector is estimated to be around one and a half years. In India, the transmission mechanism of monetary policy and lags involved are not very well understood.

- **What is difficulty, that is for policy makers?**

  A better understanding of transmission mechanisms and lags involved with timely availability of data can help the RBI fine-tune the monetary policy and make it more effective. But because of the lag in monetary policy transmission, the central bank has to be pre-emptive in its approach and diffuse inflationary pressures in the early stages.

- **What other challenges does the conduct of monetary policy face in India?**

  Apart from the issue related to monetary policy transmission, the huge inflow of foreign capital has complicated the conduct of monetary policy. The capital inflows has increased the supply of dollars, which makes the dollar stronger.

- **Does the RBI keeps buying dollars to check appreciation?**

  Yes, and that consequently raises money supply in the process. This is in conflict with its current stance of tightening monetary policy, and necessiates sterilisation operations.

- **What is sterilisation?**

  It refers to the selling of securities to suck liquidity. The extent of sterilisation depends on the stock of securities with the government available for intervention. The entire process is quite cumbersome. To understand the dilemma faced by the RBI, one needs to bring the macroeconomic dilemma of 'impossible trinity'.

  What's that?

  It states that a country cannot simultaneously have inflexible exchange rate, independent monetary policy, and free capital mobility. With massive capital inflows, RBI is finding it difficult to simultaneously protect the currency and pursue its monetary policy objectives.

- **What is inflation?**

  An expansion of aggregate demand would then expand production and lower unemployment as long as the economy has unemployed resources.inflation occurs when general level of prices is rising.

- **What is inflation rate? How it is measured?**

  The rate of inflation is defined as the rate of change of price level(as meaured say by CPI) and is measured as

  Rate of inflation(year t)={[price level(year t)-price level(year t-1)]/price level(year t-1)}*100

  Inflation measures the rate of change in the price level. We measure the trend in overall price level by constructing price indexes, which are averages of consumer on producer prices.

- **What is price index?**

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A price index is weighted average of individual prices, wher ethe weight on each commodities price reflects the economic importance of the commodity. The most important price indexes are CPI, producer price index, and the GNP Deflator.

……..CPI (consumer price index)

It meaures the cost of a market basket of consumer goods and services. It is based on prices of food, clothing, shelter, transportation, medical care,college tution and other commodities purchased for day to day living.

How to weight different prices?

It would clearly be silly merely to add up the different prices or to weight them by their mass or volume, rather we construct a price index by weighing each price by economic importance of commodity.

In case of CPI, each item is asssigned a fixed weight proportional to its relative importance in consumer expenditure. Budgets, the most recent for each item are proportional to the total spending on the item as derived from 1982-84 survey of consumer expenditures.

Example : Let us assume that consumers bur three commodities food, shelter and medical care. A hypothetical budget survey find that consumer spend 20% of their budgets on food , 50% on shelter and 30% on medical care. Using 1992 as a base year, we set the price of each commodity at 100, so CPI is also 100. Therefore…….. (0.20*100 + 0.50*100 + 0.30*100) . Next evaluate the CPI and rate of inflation for 1993. In 1993, food prices rise by 2% to 102, shelter price by 6% to 106 and medical care prices are up 10% to 110.

We calculate CPI for 1993 as

CPI(1993)= 0.20*102 + 0.50*106 + 0.30*110

= 106.4.

Thus, if 1992 is the base year in whish CPI is 100, then in 1993, the CPI is 106.4.

The rate of inflation is then given by ….....{{(106.4-100)/100}*100} = 6.4%/year.

……..Producer price index or wholesale price index.

It meaures the level of prices at wholesale or producer stage. It is based on 3400 commodity prices and includes prices of foods, manufactured products, and mining products. The fixed weights used are the net shipments or sales for the commodity.

……..GNP Deflator.

It is the ratio of nominal GNP to real GNP and is thus comprehensive price index., in other words it is price of all GNP (consumtion, investments, government purchases and exports)rather than a single sector. The index is a variable-weight index rather than a fixed weight index.

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- **What is deflation?**

The opposite of inflation is deflation, which occurs when general level of pricing is falling. Another term often encountered is disinflation which denotes a decline in rate of inflation.

- **What are the causes of inflation?**

Inflation is a complex phenomenon which cannot be attributed to a single factor. We may summarize the major cause of inflation thus:

a) Over- expansion of Money supply.

Many a times, a remarkable degree of correlation between the increase in money supply and the rise in price level may be observed.

b) Expansion of bank credit rapid expansion of bank credit is also responsible for the inflationary trend in the country.

c) Deficit financing.

The high dose of deficit financing which may cause reckless spending, may also contribute to the growth of inflationary spiral in the country

d) Ordinary monetary factors.

Among the other factors influencing the price trend in an economy, the measure ones are listed here.

- High Non-development expenditure , the continous increase in public expenditure, and especially the growth of defense and Non-development expenditure.
- Huge Plan Investments. The huge plan investments and its high rate of growth in every plan may lead to an excess demand in the capital good sector, so that industrial prices may rise.
- Black Money. Some economist have condemned black money in the hands of tax evaders and black marketers as an important source of inflation in a country. Black money encourages lavish spending, which causes excess demand and a rise in price.
- High Indirect Taxes. Incidence of high commodity taxation . prices tends to rise on account of high excise duties imposed by the government on raw materials and essential goods.

e) Non-Monetary factors.

There are various non-monetary and structural factors that may cause a rising price trend in the country. These are:

- A High Population Growth. Undoubtedly, the rising pressure on demand resulting from of population and money income, will cause a high price rise in an overpopulated country.
- Natural Calamities and Bad weather conditions. Vagaries of monsoons, bad weather conditions, droughts and failure of agricultural crops have been responsible for price spurts, from time to time, in many undeveloped countries. Agriculture price are most sensitive to inflationary forces in India. Natural calmities also contribute occassionally to the inflationary boost in a country. Events such as cyclones and floods, which destroy village economies , also aggravate the inflationary pressures.

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- Speculation and Hoarding. Hoarding and speculative activities, corruptiion at every level ,in both public and private sectors, are also responsible for the inflationary rise in a country.

- High Price of Imports. Inflation is also been inflicted in some countries through the import content used by their industries. Price of petroleum products have increased in many countries due to price hikes by the oil producing countries.

- Monopolies. Monopoly profits and unfair trade practices by big industrial houses are also responsible for price hike in India.

- Underutilization of resources. Non utilization of installed capacities in large industries also contributes to inflation.

Inflation in the country may be regarded as a symptom of a deep-seated malady, born of structural deficiencies involved in the functioning of its economic system, which is characterized by inherent weakness, wastages, and imbalances.

Gaps and Bottlenecks

To understand the true nature of inflation in an underdeveloped country one has to examine the bottlenecks and gaps of various types which obstructs the normal growth process, causes prices to increase with the generation of money income without an appropriate rise in real income. These gaps or bottlenecks can be listed below.

- Market Imperfections. Market imperfections like factor immobility, price rigidity, ignorance of market conditions, rigid social and institutional structures, and lack of specialization and training in underdeveloped economies do not allow an optimum allocation and utilisation of resources. Hence, increased in money supply and increased money income remain unaccompanied by increased supply of real output, causing a net price rise of an inflationary nature in these economies.

- Capital Bottleneck. On account of very low rate of capital formation and consequent capital deficiency, a poor country is caught into a vicious circle, tends to create a chronic inflationary spiral. Thus, in a poor country, there is inflation because by virtue of its internal backwardness, it is prone to chronic inflation.

- Enterpreneurial Bottleneck. Entrepreneurs in underdeveloped countries lack skills, spirit of boldness and adventure. They prefer safer traditional investments rather than attempt risky innovations. Absence of adequate industrial capital, prevalence of merchant capital and colossal amount of private investments in such unproductive fields as lands, jewellery, gold etc., which is a gross socio economic waste, starves the developing economy of its much needed capital resources. Thus, increased money supply or savings in terms of money makes little impact on real output and monetary equilibrium is just attained through a galloping price rise in various sectors of the economy.

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- Food Bottleneck. Due to slow growth of agriculture, over pressure of growing population on land, primitive methods of cultivation, defective land tenure system, lack of adequate irrigation facilities and many other facilities and many other reasons, the agriculture output, especially food supply which constitutes a large part of wage goods, has failed to keep pace with the growing demand from the growing population and increased rural employment in rural industrialization process in these countries. This food bottleneck has created the problem of price rise in food grains, and it has become a corner-stone in the whole of price structures in the developing economies.

- Infrastructural Bottleneck. These refer to the power shortages and inadequacies of transport facilities in underdeveloped economies. This obviously restrict the growth process in industrial, agriculture and commercial sectors and cause under utilization of capacity in the economy as a whole. Underutilization of the resources does not absorb the full increase in the money supply and reflects upon the rising prices.

- Foreign Exchange Bottleneck. Developing economy suffers from the fundamental structural disequilibrium in the balance of payments due to high imports and low exports on unfavorable terms of trade; hence, they usually suffer from foreign exchange scarcity problem. In recent years, day to day, rising imports bills due to high oil prices have aggravate the problem further. This foreign exchange bottleneck comes in the way of necessary imports to check domestic inflation. Again the need to boost exports to meet the growing deficit in the balance of payments puts an extra pressure on the marketable surplus meant for domestic requirements. This eventually leads to heavy rise to exportable commodities in the domestic market.

f) Resources Gaps. When the public sector is widely expanded for the industrial development in these countries, the government aggregates the problem of resources gap. Owing to the backward socio-economic political structure of less developed countries, its government always find it difficult to raise sufficient resources through taxation, public borrowings and profit of state enterprises, to meet the ever increasing public expenditure in intensive and extensive dimensions. As such, under the pressure of the resource gap, the government has to resort to heavy does of deficit financing, despite knowing its dangers. This makes the economy inflation prone. Similarly the resource gap in private sector,caused by low voluntary savings and high-cost economy, presses the overexpansion of money supply through bank credit which, by and large, results in acceleration of inflationary spiral in the economy.

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3.2 Analysis.

Data presentation.

Table 1:

Repo, Reverse repo and Cash reserve ratio (CRR) rates.

Sr. no	With effect from..	Reverse repo rate (%)	Repo rate (%)	CRR (%)
1	Mar 31- 2004	4.50	6.00	4.50
2	Sept 18- 2004	4.50	6.00	4.75
3	Oct 02- 2004	4.50	6.00	5.00
4	Oct 27- 2004	4.75	6.00	5.00
5	Apr 29- 2005	5.00	6.00	5.00
6	Oct 26- 2005	5.25	6.25	5.00
7	Jan 24- 2006	5.50	6.50	5.00
8	Jun 09- 2006	5.75	6.75	5.00
9	Jul 25- 2006	6.00	7.00	5.00
10	Oct 31- 2006	6.00	7.25	5.00
11	Dec 23- 2006	6.00	7.25	5.25
12	Jan 06- 2007	6.00	7.25	5.50
13	Jan 31- 2007	6.00	7.50	5.50
14	Feb 17-2007	6.00	7.50	5.75
15	Mar 03- 2007	6.00	7.50	6.00
16	Mar 31- 2007	6.00	7.75	6.00

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17	Apr 14- 2007	6.00	7.75	6.25
Sr. no	With effect from..	Reverse repo rate (%)	Repo rate (%)	Crr (%)
18	Apr 28- 2007	6.00	7.75	6.50
19	Aug 04- 2007	6.00	7.75	7.00
20	Nov 10- 2007	6.00	7.75	7.50
21	June 12- 2008	6.00 – 6.75	8.00	8.25

Source: RBI bulletin 2006-2007.

Table 2:

Benchmark prime lending rates with respect to Bank of Maharashtra.

With effect from..	Interest rates(%)
01-05-01	12.00
01-01-02	11.50
01-08-03	11.00
01-04-04	10.75
18-11-04	11.25
05-01-07	12.00
17-02-07	12.50
12-04-07	13.25
08-08-07	13.00
01-04-08	12.50

Source: Bank of Maharashtra.

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Table 3:

Structure of deposit rates for maximum period (above 5 years).

Sr. no	Year	Deposit rates (%)(above 5 y_{rs})
1	1993-94	10.00
2	1994-95	11.00
3	1995-96	13.00
4	1996-97	12.5-13.00
5	1997-98	11.50-12.00
6	1998-99	10.50-11.50
7	1999-00	10.00-10.50
8	2000-01	9.50-10.00
9	2001-02	8.00-8.50
10	2002-03	5.50-6.25
11	2003-04	5.25-5.50
12	2004-05	5.75-6.25
13	2005-06	6.25-7.00

14	2006-07	7.75-9.00
15	2007-08	7.75-9.60

Source: Handbook of statistics on Indian economy. RBI 2006-2007.

Tools used for analyzing:

- **Simple correlation and regression.**

Correlation analysis: If for two quantities under study, variation in one is accompanied by the variation in other, then these quantities are correlated. The degree of relationship between the variables is measured through correlation analysis. The measure of correlation is called ass correlation coefficient, which indicates the direction and degree of correlation between the variables. However, it must be noted that correlation implies covariation only and it need not imply cause and effect relationship.

Karl pearson's coefficient of correlation(Covariance Method).

This is the most widely used method for measuring the linear relationship between two variables(series). Personian correlation coefficient between two variables X and Y is denoted by r (x, y). It is the ratio of the covariance (Cov (x, y)) to the product of the standard deviations of x and y i.e.

$r = Cov(x,y)/бx*бy$

$= \sum(dx, dy)/\sqrt{(dx^2)(dy^2)}$

Where dx = x- avg x, dy = y-avg y.

Regression analysis: It is a statistical device use for estimating or predicting these values of unknown variables (called as dependent variable)from the values of the other(called as independent variable). This is accomplished through the regression lines which describes the average relationship between the variables say x and y.

Regression equation of y on x.

It is expressed as y = a + bx.

Where a and b are constant representing the y intercept and the slope of the line respectively.Thus we have :

y- avg y = byx(x-avg x)

where $byx = Cov(x,y)/бx^2 = \sum dx*dy/\sum dx^2$.

Regression equation of x on y .

x- avg x = bxy(y-avg y); where $bxy = Cov(x,y)/бy^2 = \sum dx*dy/\sum dy^2$.

Correlation between CRR And Interest rates

Period	CRR (C)(%)	Int. (I) (%)	dc = C -c	di = I-i	dc * di	dc^2	di^2	C*I	C^2	I^2
31-Mar-04	4.5	10.75	-1.15	-1.10	1.265	1.3225	1.21	48.375	20.25	115.5625
18-Sep-04	4.75	10.75	-0.9	-1.1	0.99	0.81	1.21	51.0625	22.5625	115.5625
2-Oct-04	5	10.75	-0.65	-1.1	0.715	0.4225	1.21	53.75	25	115.5625
27-Oct-04	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625
29-Apr-05	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625

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26-Oct-05	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625
24-Jan-06	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625
9-Jun-06	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625
25-Jul-06	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625
23-Oct-06	5	11.25	-0.65	-0.6	0.39	0.4225	0.36	56.25	25	126.5625
23-Dec-06	5.25	11.25	-0.4	-0.6	0.24	0.16	0.36	59.0625	27.5625	126.5625
6-Jan-07	5.5	12	-0.15	0.15	-0.0225	0.0225	0.0225	66	30.25	144
31-Jan-07	5.5	12	-0.15	0.15	-0.0225	0.0225	0.0225	66	30.25	144
17-Feb-07	5.75	12.5	0.1	0.65	0.065	0.01	0.4225	71.875	33.0625	156.25
3-Mar-07	6	12.5	0.35	0.65	0.2275	0.1225	0.4225	75	36	156.25
31-Mar-07	6	12.5	0.35	0.65	0.2275	0.1225	0.4225	75	36	156.25
14-Apr-07	6.25	13.25	0.6	1.4	0.84	0.36	1.96	82.8125	39.0625	175.5625
28-Apr-07	6.5	13.25	0.85	1.4	1.19	0.7225	1.96	86.125	42.25	175.5625
4-Aug-07	7	13.25	1.35	1.4	1.89	1.8225	1.96	92.75	49	175.5625
10-Nov-07	7.5	13	1.85	1.15	2.1275	3.4225	1.3225	97.5	56.25	169
12-Jun-08	8.25	12.5	2.6	0.65	1.69	6.76	0.4225	103.125	68.0625	156.25
Total	118.75	249	0.10	0.15	14.1525	19.06	15.448	1422.19	690.563	2967.875

$R_1 = \sum\{ (dc * di) \} / \sqrt{\sum(dc)2\sum(di)^2}$

$R_1 = 14.1525/294.42935$

$R_1 = 0.0$

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Correlation between Repo And Interest rates										
Period	**Repo (R_p)(%)**	**Int. (I) (%)**	**$D_{rp} = R_p - r_p$**	**$D_i = I - i$**	**$D_{rp} * Di$**	**D_{rp}^2**	**D_i^2**	**$R_p * I$**	**R_p^2**	**I^2**
31-Mar-04	6	10.75	-1.024	-1.107	1.13357	1.0486	1.2254	64.5	36	115.5625
18-Sep-04	6	10.75	-1.024	-1.107	1.13357	1.0486	1.2254	64.5	36	115.5625
2-Oct-04	6	10.75	-1.024	-1.107	1.13357	1.0486	1.2254	64.5	36	115.5625
27-Oct-04	6	11.25	-1.024	-0.607	0.62157	1.0486	0.3684	67.5	36	126.5625
29-Apr-05	6	11.25	-1.024	-0.607	0.62157	1.0486	0.3684	67.5	36	126.5625
26-Oct-05	6.25	11.25	-0.774	-0.607	0.46982	0.5991	0.3684	70.3125	39.0625	126.5625

24-Jan-06	6.5	11.25	-0.524	-0.607	0.31807	0.2746	0.3684	73.125	42.25	126.5625
9-Jun-06	6.75	11.25	-0.274	-0.607	0.16632	0.0751	0.3684	75.9375	45.5625	126.5625
25-Jul-06	7	11.25	-0.024	-0.607	0.01457	0.0006	0.3684	78.75	49	126.5625
23-Oct-06	7.25	11.25	0.226	-0.607	-0.1372	0.0511	0.3684	81.5625	52.5625	126.5625
23-Dec-06	7.25	11.25	0.226	-0.607	-0.1372	0.0511	0.3684	81.5625	52.5625	126.5625
6-Jan-07	7.25	12	0.226	0.143	0.03232	0.0511	0.0204	87	52.5625	144
31-Jan-07	7.5	12	0.476	0.143	0.06807	0.2266	0.0204	90	56.25	144
17-Feb-07	7.5	12.5	0.476	0.643	0.30607	0.2266	0.4134	93.75	56.25	156.25
3-Mar-07	7.5	12.5	0.476	0.643	0.30607	0.2266	0.4134	93.75	56.25	156.25
31-Mar-07	7.75	12.5	0.726	0.643	0.46682	0.5271	0.4134	96.875	60.0625	156.25
14-Apr-07	7.75	13.25	0.726	1.393	1.01132	0.5271	1.9404	102.688	60.0625	175.5625
28-Apr-07	7.75	13.25	0.726	1.393	1.01132	0.5271	1.9404	102.688	60.0625	175.5625
4-Aug-07	7.75	13.25	0.726	1.393	1.01132	0.5271	1.9404	102.688	60.0625	175.5625
10-Nov-07	7.75	13	0.726	1.143	0.82982	0.5271	1.3064	100.75	60.0625	169
12-Jun-08	8	12.5	0.976	0.643	0.62757	0.9526	0.4134	100	64	156.25
Total	147.5	249	-0.004	0.003	11.0089	10.613	15.446	1759.94	1046.63	2967.875

$R_2=\sum\{ (D_{rp} * D_i) \}/\sqrt{\sum(D_{rp})^2\sum(D_i)^2}$

R_2= 11.0089 / 163.818

R_2=0.067

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Correlation between Interest rates and Deposit rates										
Period	**Int. (I) (%)**	**Dep.Rate(%)**	**D_i = I - i**	**D_d = D - d**	**D_i * D_d**	**D_i^2**	**D_d^2**	**I * D**	**I^2**	**D_d^2**
31-Mar-04	10.75	5.35	-1.1	-2.169	2.3859	1.21	4.7046	57.5125	115.563	28.6225
18-Sep-04	10.75	5.35	-1.1	-2.169	2.3859	1.21	4.7046	57.5125	115.563	28.6225
2-Oct-04	10.75	5.35	-1.1	-2.169	2.3859	1.21	4.7046	57.5125	115.563	28.6225
27-Oct-04	11.25	5.35	-0.6	-2.169	1.3014	0.36	4.7046	60.1875	126.563	28.6225
29-Apr-05	11.25	6.75	-0.6	-0.769	0.4614	0.36	0.5914	75.9375	126.563	45.5625
26-Oct-05	11.25	6.75	-0.6	-0.769	0.4614	0.36	0.5914	75.9375	126.563	45.5625

24-Jan-06	11.25	6.75	-0.6	-0.769	0.4614	0.36	0.5914	75.9375	126.563	45.5625
9-Jun-06	11.25	8.25	-0.6	0.731	-0.4386	0.36	0.5344	92.8125	126.563	68.0625
25-Jul-06	11.25	8.25	-0.6	0.731	-0.4386	0.36	0.5344	92.8125	126.563	68.0625
23-Oct-06	11.25	8.25	-0.6	0.731	-0.4386	0.36	0.5344	92.8125	126.563	68.0625
23-Dec-06	11.25	8.25	-0.6	0.731	-0.4386	0.36	0.5344	92.8125	126.563	68.0625
6-Jan-07	12	8.25	0.15	0.731	0.10965	0.0225	0.5344	99	144	68.0625
31-Jan-07	12	8.25	0.15	0.731	0.10965	0.0225	0.5344	99	144	68.0625
17-Feb-07	12.5	8.25	0.65	0.731	0.47515	0.4225	0.5344	103.125	156.25	68.0625
3-Mar-07	12.5	8.25	0.65	0.731	0.47515	0.4225	0.5344	103.125	156.25	68.0625
31-Mar-07	12.5	8.25	0.65	0.731	0.47515	0.4225	0.5344	103.125	156.25	68.0625
14-Apr-07	13.25	8.25	1.4	0.731	1.0234	1.96	0.5344	109.313	175.563	68.0625
28-Apr-07	13.25	8.25	1.4	0.731	1.0234	1.96	0.5344	109.313	175.563	68.0625
4-Aug-07	13.25	8.25	1.4	0.731	1.0234	1.96	0.5344	109.313	175.563	68.0625
10-Nov-07	13	8.25	1.15	0.731	0.84065	1.3225	0.5344	107.25	169	68.0625
12-Jun-08	12.5	9	0.65	1.481	0.96265	0.4225	2.1934	112.5	156.25	81
Total	249	157.9	0.15	0.001	14.6072	15.448	29.732	1886.85	2967.88	1216.99

$R_3 = \sum\{ (D_d * D_i) \} / \sqrt{\sum(D_d)^2 \sum(D_i)^2}$

$R_3 = 14.602 / 459.3$

$R_3 = 0.03$

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Correlation between CRR And repo rates										
Period	**Repo. (R) (%)**	**CRR (%)**	**$D_{rp} = R_p - r_p$**	**dc = C -c**	**D_{rp} *dc**	**D_{rp}^2**	**dc^2**	**R_p* CRR**	**C^2**	**R_p^2**
31-Mar-04	6	4.5	-1.02	-1.15	1.173	1.0404	1.3225	27	20.25	36
18-Sep-04	6	4.75	-1.02	-0.9	0.918	1.0404	0.81	28.5	22.5625	36
2-Oct-04	6	5	-1.02	-0.65	0.663	1.0404	0.4225	30	25	36
27-Oct-04	6	5	-1.02	-0.65	0.663	1.0404	0.4225	30	25	36
29-Apr-05	6	5	-1.02	-0.65	0.663	1.0404	0.4225	30	25	36
26-Oct-05	6.25	5	-0.77	-0.65	0.5005	0.5929	0.4225	31.25	25	39.0625
24-Jan-06	6.5	5	-0.52	-0.65	0.338	0.2704	0.4225	32.5	25	42.25

9-Jun-06	6.75	5	-0.27	-0.65	0.1755	0.0729	0.4225	33.75	25	45.5625
25-Jul-06	7	5	-0.02	-0.65	0.013	0.0004	0.4225	35	25	49
23-Oct-06	7.25	5	0.23	-0.65	-0.1495	0.0529	0.4225	36.25	25	52.5625
23-Dec-06	7.25	5.25	0.23	-0.4	-0.092	0.0529	0.16	38.0625	27.5625	52.5625
6-Jan-07	7.25	5.5	0.23	-0.15	-0.0345	0.0529	0.0225	39.875	30.25	52.5625
31-Jan-07	7.5	5.5	0.48	-0.15	-0.072	0.2304	0.0225	41.25	30.25	56.25
17-Feb-07	7.5	5.75	0.48	0.1	0.048	0.2304	0.01	43.125	33.0625	56.25
3-Mar-07	7.5	6	0.48	0.35	0.168	0.2304	0.1225	45	36	56.25
31-Mar-07	7.75	6	0.73	0.35	0.2555	0.5329	0.1225	46.5	36	60.0625
14-Apr-07	7.75	6.25	0.73	0.6	0.438	0.5329	0.36	48.4375	39.0625	60.0625
28-Apr-07	7.75	6.5	0.73	0.85	0.6205	0.5329	0.7225	50.375	42.25	60.0625
4-Aug-07	7.75	7	0.73	1.35	0.9855	0.5329	1.8225	54.25	49	60.0625
10-Nov-07	7.75	7.5	0.73	1.85	1.3505	0.5329	3.4225	58.125	56.25	60.0625
12-Jun-08	8	8.25	0.98	2.6	2.548	0.9604	6.76	66	68.0625	64
Total	147.5	118.75	0.08	0.1	11.173	10.613	19.06	845.25	690.563	1046.625

$R_4=\sum\{ (D_{rp}*dc) \}/\sqrt{\sum(D_{rp})^2\sum(dc)^2}$

$R_4=11.173/202.2266$

$R_4=0.05$

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Correlation between CRR And WPI										
Period	**WIP (W) (%)**	**CRR (%)**	**Dw = Dw-dw**	**dc = C -c**	**D_w *dc**	**D_w^2**	**dc^2**	**Dw*CRR**	**Dw^2**	**C^2**
31-Mar-04	4.5	4.5	-1.54	-1.15	1.771	2.3716	1.3225	20.25	2.3716	1.749006
18-Sep-04	4.5	4.75	-1.54	-0.9	1.386	2.3716	0.81	21.375	2.3716	0.6561
2-Oct-04	4.5	5	-1.54	-0.65	1.001	2.3716	0.4225	22.5	2.3716	0.178506
27-Oct-04	6	5	-0.04	-0.65	0.026	0.0016	0.4225	30	0.0016	0.178506
29-Apr-05	6	5	-0.04	-0.65	0.026	0.0016	0.4225	30	0.0016	0.178506
26-Oct-05	5.5	5	-0.54	-0.65	0.351	0.2916	0.4225	27.5	0.2916	0.178506
24-Jan-06	5.5	5	-0.54	-0.65	0.351	0.2916	0.4225	27.5	0.2916	0.178506

9-Jun-06	5.5	5	-0.54	-0.65	0.351	0.2916	0.4225	27.5	0.2916	0.178506
25-Jul-06	5.5	5	-0.54	-0.65	0.351	0.2916	0.4225	27.5	0.2916	0.178506
31-Oct-06	5.5	5	-0.54	-0.65	0.351	0.2916	0.4225	27.5	0.2916	0.178506
23-Dec-06	6.2	5.25	0.16	-0.4	-0.064	0.0256	0.16	32.55	0.0256	0.0256
6-Jan-07	6.2	5.5	0.16	-0.15	-0.024	0.0256	0.0225	34.1	0.0256	0.000506
31-Jan-07	6.2	5.5	0.16	-0.15	-0.024	0.0256	0.0225	34.1	0.0256	0.000506
17-Feb-07	6.2	5.75	0.16	0.1	0.016	0.0256	0.01	35.65	0.0256	1E-04
3-Mar-07	6.2	6	0.16	0.35	0.056	0.0256	0.1225	37.2	0.0256	0.015006
31-Mar-07	6.2	6	0.16	0.35	0.056	0.0256	0.1225	37.2	0.0256	0.015006
14-Apr-07	6.2	6.25	0.16	0.6	0.096	0.0256	0.36	38.75	0.0256	0.1296
28-Apr-07	6.2	6.5	0.16	0.85	0.136	0.0256	0.7225	40.3	0.0256	0.522006
4-Aug-07	6.2	7	0.16	1.35	0.216	0.0256	1.8225	43.4	0.0256	3.321506
10-Nov-07	6.2	7.5	0.16	1.85	0.296	0.0256	3.4225	46.5	0.0256	11.71351
12-Jun-08	11.85	8.25	5.81	2.6	15.106	33.756	6.76	97.7625	33.7561	45.6976
Total	126.85	118.75	120.81	113.1	21.831	42.588	19.06	15063.4	14595.1	65.2741

$R_4=\sum\{ (D_w*dc) \}/\sqrt{\sum(D_w)^2\sum(dc)^2}$

$R_4=21.831/811.72$

$R_4=0.02$

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- **Regresssion equations:**

1. Multiple regression between Interest rate(i) , Repo(r) and CRR(c), of which Interest rate is dependent on Repo and CRR which are independent.

   The regression equation of x on y and z is given by
   X = b12.3(r-avg r)+b13.2(c-avg c)
   b12.3 = partial regression coefficient of x 0n y keeping z constant.
   $= [б1/б2((r1-r13*r23)/1-r23^2)]$

   $(б1) = \sqrt{\{(1/n) \sum(i – avg\ i)\}}$

   $= 0.8576.$

(б2) $= \sqrt{\{(1/n)\sum(r - avg\ r)\}}$

$= 0.7108.$

Substituting in the above equation..

$b12.3 = 0.8576/0.7108(0.0671-(0.0478* 0.055)/(1-0.055^2))$

$= 0.8576/0.7108 * 0.06466$

$= 0.0780.$

Similarly,

$b13.2 = б1/б3\ \{(r13-r12*r23)/1-r23^2\}$

$= 0.03983.$

Thus substituting in the regression equation.

$(x - 11.85) = 0.0780(y-7.024)+0.3983(z-5.65)$

Thus

……[x = {0.0780(y)+0.03983(z)+11.07}]

- **Regression equation between interest rate and deposit rate.**

Formula: $(i- avg\ i) = b_{id}\ (d-avg\ d)$

$b_{id} = cov(id)/б^2d$

$= 14.061/29.724 = 0.47305.$

Thus substituting in the regression equation

$(i-11.85) = 0.47305\ (d-7.519)$

Thus

……..[I = 0.47305(d) + 8.29]

- **Regression equation of Repo and CRR.**

Formula: $(r- avg\ r) = b_{rc}(c - avg\ c)$

$b_{rc} = cov(rc)/б^2c$

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= 11.1726/10.61 = 1.0530.

Thus substituting in the regression equation.

(r-5.65) = 0.616(c) – 4.31

Thus

……[r= 0.616(c)+1.335]

- **Regression equation of CRR on WPI.**

Formula: (c- avg c) = b_{cw} (w- avg w)

b_{cw} = cov(cw)/σ^2w

= 20.76/44.6 = 0.46.

Thus substituting in the regression equation.

……[c= 0.46 (w)+2.91]

A) Increasing inflation.

Inflation increasing sharply till Dec. 08 and then sloping down afterwards maintaining an average of 10.86 for the whole period considered.

Forecasted interest rates and deposit rates, by assuming WPI constant.

Period	WPI	CRR	REPO	INTEREST RATES	DEPOSIT RATES	NET MARGIN	AVERAGE INTEREST	AVERAGE DEPOSITS
JULY – 08	11.25	8.36	6. 484	11.90	7.631	4.269	12.006	7.85
SEP T -08	13.25	9.00	6.879	11.96	7.758	4.202		
NOV-08	15.50	10.04	7.519	12.05	7.948	4.10		
DEC – 08	17.00	10.73	7.944	12.117	8.090	4.02		
JAN – 09	16.85	10.66	7.944	12.114	8.080	4.03	12.02	7.88
MAR – 09	16.50	10.57	7.809	12.09	8.030	4.06		
MAY – 09	15.00	9.81	7.377	12.03	7.906	4.12		
JUL – 09	14.00	9.35	7.094	11.99	7.821	4.16		
SEPT – 09	13.50	9.12	6.950	11.97	7.77	4.2		
NOV – 09	13.00	8.89	6.810	11.95	7.73	4.22		
JAN -	12.00	8.43	6.520	11.91	7.65	4.25	11.83	7.47

10								
MAR – 10	10.50	7.74	6.102	11.85	7.52	4.33		
MAY – 10	10.00	7.51	5.961	11.83	7.48	4.35		
JULY – 10	9.50	7.28	5.819	11.81	7.44	4.37		
SEPT – 10	9.00	7.05	5.677	11.79	7.39	4.44		
DEC – 10	9.00	7.05	5.677	11.79	7.39	4.44		
JAN - 11	10.50	7.74	6.100	11.85	7.52	3.32	11.81	7.44
MAR – 11	10.25	7.625	6.O32	11.84	7.50	4.33		
JUNE – 11	9.85	7.44	5.918	11.82	7.46	4.35		
AUG - 11	9.50	7.28	5.810	11.81	7.44	4.36		
OCT – 11	9.00	7.05	5.677	11.79	7.39	4.39		
DEC – 11	8.60	6.87	5.560	11.77	7.35	4.41		
JAN – 12	8.40	6.77	5.500	11.76	7.33	4.42	11.72	7.25
MAR – 12	8.00	6.59	5.380	11.75	7.31	4.43		
MAY – 12	7.50	6.36	5.252	11.73	7.27	4.45		
JULY - 12	7.00	6.13	5.111	11.71	7.22	4.49		
SEPT - 12	6.80	6.03	5.040	11.70	7.20	4.5		
DEC -	6.80	6.03	5.040	11.70	7.20	4.5		

12								
FEB - 13	7.00	6.13	5.111	11.71	7.22	4.49		

Advances and deposits for the previous year.

Parameter	Year(05-06)	Year(06-07)	Year(07 -08)
Total deposits	26906.19	33919.34	41758.33
Gross advances	17079.76	23462.28	29798.03

Thus, by weighted average method we have the trend to be increasing both for deposits as well as advances. Also by using simulation technique, we have forecasted the succeeding five years advances and deposits, considering the following assumptions.

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Case 1:

Deposit rates are increased by maximum ratio and the advances by lower proportion.

Assumptions:

- The ratios for which the deposits may increase are considered as 1.40, 1.30, 1.20 and the corresponding year change is calculated by simulation.
- The ratios for which the advances may increase are considered as 1.20, 1.35, 1.40 and the corresponding year change is calculated by simulation.

Particulars	Deposit		Advances	
Years	Increased by the ratio	Deposits (crores)	Increased by the ratio	Advances (crores)
2008-2009	1.40	58461.66	1.20	35757.63
2009-2010	1.40	81846.32	1.20	42909.16
2010-2011	1.30	106400.22	1.35	57927.37
2011-2012	1.30	138320.28	1.35	78201.94
2012-2013	1.25	172900.35	1.40	109482.72

Deposits and advances in thousands.

Particulars	Deposit		Advances	
Years	Deposits (crores)	Deposits (thousands)	Advances (crores)	Advances (thousands)
2008-2009	58461.66	584616600	35757.63	357576360
2009-2010	81846.32	818463200	42909.16	429091600
2010-2011	106400.22	1064002200	57927.37	579273700
2011-2012	138320.28	1383202800	78201.94	782019400
2012-2013	172900.35	1729003500	109482.72	1094827200

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Thus the income on interest and interest expended on deposits can be calculated by taking the average of the forecasted rates.

Years	Advances	Rates(%)	Interest income	Deposits	Rates(%)	Interest expended
2008-09	357576360	12.006	42930617.78	584616600	7.85	45892403.1
2009-10	429091600	12.02	51576810.32	818463200	7.88	64494900.16
2010-11	579273700	11.83	68528078.71	1064002200	7.47	79480964.34
2011-12	782019400	11.81	92356491.14	1383202800	7.44	102910288.32
2012-13	1094827200	11.72	128313747.84	1729003500	7.25	125352753.75

Thus the total interest earned and expended can be estimated considering the total investments and the deposits as in above charts as follows.

Particulars	Interest earned				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest/discounts on advances	38416744.5	57625116.75	86437675.12	129656512.68	194484769.03
Interest on balances with RBI	55775.16	14055.3	3541.9	892.57	224.92
Other bank funds	113712	86875.96	66373.23	50709.16	38741.79
Interest on investments	42930617.78	51576810.32	68528078.71	92356491.14	1283113747.84
Total	81516849.38	109302858.2	155035668.92	222064605.44	128313747.86

All the other factors other than interest on investments are obtained by analyzing the previous year trends, and the same is considered for the below table apart from interest on deposits.

Particulars	Interest expended				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest on RBI interbank borrowings	121084.5	181626.75	272440.12	408660.18	612990.28
Others	2656368.1	3718915.3	5206481.47	7289074.0	10204703.69
Interest on deposits	45892403.1	64494900.16	79480964.34	102910288.32	125352753.75
Total	48669855.7	68395442.21	84959885.93	110608022.48	136170447.72

The estimated profit and loss account for the succeeding five years is as followed:

Profit and Loss account

(Rs. in thousands)

Particulars	Yr. 2008-09	Yr. 2009-10	Yr. 2010-11	Yr. 2011-12	Yr. 2012-13
Income					
Interest earned	81516849.38	109302858.20	155035668.92	222064605.44	322837483.54
Other income	2961457.15	3130260.20	3308685.86	3497280.08	3696625.05
Total	84478306.53	112433118.40	158344353.90	2255561885.50	326534108.60
Expenditure					
Interest expended	48669855.70	68395442.21	84959885.93	110608022.48	136170447.72
Operating expenses	9375359.07	10509777.52	11781460.60	13207017.33	14805066.42

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Provisions and contingencies	3469949.28	3497708.87	3525690.55	3553896.07	3582327.24
Total	61515164.05	72944128.6	100267037.10	127368935.80	154557841.40
Profit/loss					
Net profit/loss for the year	22963142.48	39488989.80	58077316.80	98192949.70	171976267.70
Add: profit/loss brought forward	2586125.00	17802583.17	44752392.93	8489915.06	153529536.35
Total profit	25549267.48	57291572.97	102829709.73	183092864.76	325505804.05
Appropriations					
Transfer to statutory res.	5740785.62	9872247.45	14519329.20	24548237.43	42994066.93
Transfer to capital res.	918525.69	1579559.59	2323092.67	3927717.98	6879050.708
Transfer to revenue res.	–	–	–	–	–
Transfer to special reserve u/s 36(1)(8)of IT act	80000.00	80000.00	80000.00	80000.00	80000.00
Transfer as proposed dividend	861040.00	861040.00	861040.00	861040.00	861040.00
Tax on dividend	146333.00	146333.00	146333.00	146333.00	146333.00
Balance carried over to balance sheet	17802583.17	44752392.93	84899915.06	153529536.35	274545313.41
Total	**25549267.48**	**57291572.97**	**102829709.73**	**183092864.76**	**325505804.05**

Reference: The schedules which are the integral part of the accounts.

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Case 2:

Deposit rates are increased by lower ratio and correspondingly advances by lower proportion.

Assumptions:

- The ratios for which the deposits may increase are considered as 1.20, 1.25, 1.35 and the corresponding year change is calculated by simulation.
- The ratios for which the advances may increase are considered as 1.10, 1.15, 1.25 and the corresponding year change is calculated by simulation.

Particulars	Deposit		Advances	
Years	Increased by the ratio	Deposits (crores)	Increased by the ratio	Advances (crores)
2008-2009	1.20	50109.99	1.10	32777.833
2009-2010	1.20	60131.99	1.10	36055.616
2010-2011	1.25	75164.99	1.15	41463.958
2011-2012	1.25	93956.24	1.15	47683.552
2012-2013	1.35	126840.92	1.25	59604.440

Deposits and advances in thousands.

Particulars	Deposit		Advances	
Years	Deposits (crores)	Deposits (thousands)	Advances (crores)	Advances (thousands)
2008-2009	50109.99	501099900	32777.833	327778330
2009-2010	60131.99	601319900	36055.616	360556160
2010-2011	75164.99	751649900	41463.958	414639580
2011-2012	93956.24	939562400	47683.552	476835520
2012-2013	126840.92	1268409200	59604.440	596044400

Thus the income on interest and interest expended on deposits can be calculated by taking the average of the forecasted rates.

Years	Advances	Rates (%)	Interest income	Deposits	Rates (%)	Interest expended
2008-09	327778330	12.006	39353066.30	501099900	7.85	39336342.15
2009-10	360556160	12.02	43338850.43	601319900	7.88	47384008.12
2010-11	414639580	11.83	49051862.31	751649900	7.47	56148247.53
2011-12	476835520	11.81	56314274.91	939562400	7.44	69903442.56
2012-13	596044400	11.72	69856403.68	1268409200	7.25	91959667.00

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Thus the total interest earned and expended can be estimated considering the total investments and the deposits as in above charts as follows.

Particulars	Interest earned				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest/discounts on advances	38416744.5	57625116.75	86437675.12	129656512.68	194484769.03
Interest on balances with RBI	55775.16	14055.3	3541.9	892.57	224.92
Other bank funds	113712	86875.96	66373.23	50709.16	38741.79
Interest on investments	39353066.3	43338850.43	49051862.31	56314274.91	69856403.68
Total	77939297.96	101064898.4	135559452.6	216022389.2	264380139.4

All the other factors other than interest on investments are obtained by analyzing the previous year trends, and the same is considered for the below table apart from interest on deposits.

Particulars	Interest expended				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest on RBI interbank borrowings	121084.5	181626.75	272440.12	408660.18	612990.28
Others	2656368.1	3718915.3	5206481.47	7289074.0	10204703.69
Interest on deposits	39336342.15	47384008.12	56148247.53	69903442.56	91959667.00
Total	42113794.75	51284550.17	61627169.12	77601176.74	102777361.00

The estimated profit and loss account for the succeeding five years is as followed:

Profit and Loss account

(Rs. in thousands)

Particulars	Yr. 2008-09	Yr. 2009-10	Yr. 2010-11	Yr. 2011-12	Yr. 2012-13
Income					
Interest earned	77939297.96	101064898.4	135559452.6	216022389.2	264380139.4
Other income	2961457.15	3130260.20	3308685.86	3497280.08	3696625.05
Total	809000755.11	104195158.6	138868137.6	219519669.3	268076764.4
Expenditure					
Interest expended	42113794.75	51284550.17	61627169.12	77601176.74	102777361.00
Operating expenses	9375359.07	10509777.52	11781460.60	13207017.33	14805066.42
Provisions and contingencies	3469949.28	3497708.87	3525690.55	3553896.07	3582327.24

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Total	54959103.1	65292036.56	76934320.27	91163583.14	121164754.7
Profit/loss					
Net profit/loss for the year	25941652	38903122.04	61933817.33	128356086.20	264494437.2
Add: profit/loss brought forward	2586125	19917324.92	46451168.57	89336805.88	208262374.10
Total profit	28527777	58820446.96	108384985.90	217692892.10	472756811.30
Appropriations					
Transfer to statutory res.	6485413	9725780.51	15483454.33	32089021.55	66123609.3
Transfer to capital res.	1037666.08	1556124.88	2477352.693	5134243.44	10579777.49
Transfer to revenue res.	–	–	–	–	–
Transfer to special reserve u/s 36(1)(8)of IT act	80000.00	80000.00	80000.00	80000.00	80000.00
Transfer as proposed dividend	861040.00	861040.00	861040.00	861040.00	861040.00
Tax on dividend	146333.00	146333.00	146333.00	146333.00	146333.00
Balance carried over to balance sheet	19917324.92	46451168.57	89336805.88	208262374.10	394966051.50
Total	**28527777**	**58820446.96**	**108384985.90**	**217692892.10**	**472756811.30**

Reference: The schedules which are the integral part of the accounts.

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B) Normal inflation.

Inflation increasing at normal rate maintaining an average of 7.04 for the whole period considered.

Forecasted interest rates and deposit rates, by assuming WPI constant.

Period	WPI	CRR	REPO	INTEREST RATES	DEPOSIT RATES	NET MARGIN	AVERAGE INTEREST	AVERAGE DEPOSITS
JULY – 08	6.5	5.900	4.960	11.69	7.191	4.49	11.61	7.20
SEP T -08	6.8	6.038	5.054	11.70	7.208	4.49		
NOV-08	6.5	5.900	4.960	11.69	7.191	4.49		

DEC – 08	7.0	6.130	5.111	11.71	7.220	4.49		
JAN – 09	7.2	6.220	5.167	11.72	7.250	4.50	11.72	7.23
MAR – 09	7.6	6.406	5.281	11.73	7.270	4.46		
MAY – 09	7.0	6.130	5.111	11.71	7.220	4.49		
JUL – 09	7.2	6.220	5.160	11.72	7.220	4.50		
SEPT – 09	7.4	6.310	5.220	11.72	7.220	4.50		
NOV – 09	7.4	6.310	5.220	11.72	7.220	4.50		
JAN - 10	6.8	6.038	5.054	11.70	7.208	4.49	11.71	7.22
MAR – 10	6.8	6.038	5.054	11.70	7.208	4.49		
MAY – 10	7.0	6.130	5.110	11.71	7.220	4.49		
JULY – 10	7.2	6.220	5.160	11.72	7.220	4.50		
SEPT – 10	7.8	6.490	5.330	11.74	7.290	4.45		
DEC – 10	7.0	6.130	5.110	11.71	7.220	4.49		
JAN - 11	7.8	6.498	5.330	11.74	7.290	4.45	11.74	7.29
MAR – 11	7.8	6.498	5.330	11.74	7.290	4.45		
JUNE – 11	7.8	6.498	5.330	11.74	7.290	4.45		
AUG - 11	8.0	6.590	5.390	11.75	7.310	4.44		
OCT – 11	8.0	6.590	5.390	11.75	7.310	4.44		
DEC – 11	7.8	6.490	5.330	11.74	7.290	4.45		

JAN – 12	8.0	6.590	5.390	11.75	7.310	4.44	11.72	7.29
MAR – 12	7.8	6.490	5.330	11.74	7.290	4.45		
MAY – 12	7.5	6.360	5.252	11.73	7.270	4.46		
JULY - 12	7.0	6.130	5.110	11.71	7.220	4.49		
SEPT - 12	7.0	6.130	5.110	11.71	7.220	4.49		
DEC - 12	7.0	6.130	5.110	11.71	7.220	4.49		
FEB - 13	7.0	6.130	5.110	11.71	7.220	4.49		

Advances and deposits for the previous year.

Parameter	Year(05-06)	Year(06-07)	Year(07 -08)
Total deposits	26906.19	33919.34	41758.33
Gross advances	17079.76	23462.28	29798.03

Thus, by weighted average method we have the trend to be increasing both for deposits as well as advances. Also by using simulation technique, we have forecasted the succeeding five years advances and deposits, considering the following assumptions.

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Case 1:

Deposit rates are increased by maximum ratio and the advances by lower proportion.

Assumptions:

- The ratios for which the deposits may increase are considered as 1.40, 1.30, 1.20 and the corresponding year change is calculated by simulation.
- The ratios for which the advances may increase are considered as 1.20, 1.35, 1.40 and the corresponding year change is calculated by simulation.

Particulars	Deposit		Advances	
Years	Increased by the ratio	Deposits (crores)	Increased by the ratio	Advances (crores)
2008-2009	1.40	58461.66	1.20	35757.63
2009-2010	1.40	81846.32	1.20	42909.16
2010-2011	1.30	106400.22	1.35	57927.37

2011-2012	1.30	138320.28	1.35	78201.94
2012-2013	1.25	172900.35	1.40	109482.72

Deposits and advances in thousands.

Particulars	Deposit		Advances	
Years	Deposits (crores)	Deposits (thousands)	Advances (crores)	Advances (thousands)
2008-2009	58461.66	584616600	35757.63	357576360
2009-2010	81846.32	818463200	42909.16	429091600
2010-2011	106400.22	1064002200	57927.37	579273700
2011-2012	138320.28	1383202800	78201.94	782019400
2012-2013	172900.35	1729003500	109482.72	1094827200

Thus the income on interest and interest expended on deposits can be calculated by taking the average of the forecasted rates.

Years	Advances	Rates(%)	Interest income	Deposits	Rates(%)	Interest expended
2008-09	357576360	11.61	41514615.40	584616600	7.20	42092395.20
2009-10	429091600	11.72	50289535.52	818463200	7.23	59174889.36
2010-11	579273700	11.71	67832950.20	1064002200	7.22	76820958.84
2011-12	782019400	11.74	91809077.56	1383202800	7.29	100835484.10
2012-13	1094827200	11.72	128313747.80	1729003500	7.25	125352753.80

Thus the total interest earned and expended can be estimated considering the total investments and the deposits as in above charts as follows.

Particulars	Interest earned				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest/discounts on advances	38416744.5	57625116.75	86437675.12	129656512.68	194484769.03
Interest on balances with RBI	55775.16	14055.3	3541.9	892.57	224.92
Other bank funds	113712	86875.96	66373.23	50709.16	38741.79
Interest on investments	41514615.40	50289535.52	67832950.20	91809077.56	128313747.80

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Total	80100847.06	108015583.50	154340541.40	221517191.70	322837483.40

All the other factors other than interest on investments are obtained by analyzing the previous year trends, and the same is considered for the below table apart from interest on deposits.

Particulars	**Interest expended**				
	2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**
Interest on RBI interbank borrowings	121084.5	181626.75	272440.12	408660.18	612990.28
Others	2656368.1	3718915.3	5206481.47	7289074.0	10204703.69
Interest on deposits	42092395.20	59174889.36	76820958.84	100835484.10	125352753.80
Total	44869847.80	63075431.41	82299880.43	108533218.20	136170447.70

The estimated profit and loss account for the succeeding five years is as followed:

Profit and Loss account

(Rs. in thousands)

Particulars	**Yr. 2008-09**	**Yr. 2009-10**	**Yr. 2010-11**	**Yr. 2011-12**	**Yr. 2012-13**
Income					
Interest earned	80100847.06	108015583.50	154340541.40	221517191.70	322837483.40
Other income	2961457.15	3130260.20	3308685.86	3497280.08	3696625.05
Total	83062304.21	11145843.70	157649227.20	221866919.7	323234108.40
Expenditure					
Interest expended	44869847.80	63075431.41	82299880.43	108533218.20	136170447.70
Operating expenses	9375359.07	10509777.52	11781460.60	13207017.33	14805066.42
Provisions and contingencies	3469949.28	3497708.87	3525690.55	3553896.07	3582327.24
Total	57715156.11	77082917.80	97607031.58	125294131.50	154557841.30
Profit/loss					
Net profit/loss for the year	25347148.10	34062925.90	60042195.70	96572788.20	168676267.10
Add: profit/loss brought forward	2586125	19495227.16	42592531.50	84135117.45	151614423.1
Total profit	27933273.1	53558153.06	102634727.20	180707905.7	1684820508
Appropriations					
Transfer to statutory res.	6336787.02	8515731.47	15010548.93	24143197.05	42169216.78
Transfer to capital res.	1013885.92	1362517.03	2401687.82	3862911.52	6747050.684
Transfer to revenue res.	–	–	–	–	–

Transfer to special reserve u/s 36(1)(8)of IT act	80000.00	80000.00	80000.00	80000.00	80000.00
Transfer as proposed dividend	861040.00	861040.00	861040.00	861040.00	861040.00
Tax on dividend	146333.00	146333.00	146333.00	146333.00	146333.00
Balance carried over to balance sheet	19495227.16	42592531.50	84135117.45	151614423.1	1634816868
Total	**27933273.1**	**53558153.06**	**102634727.20**	**180707905.7**	**1684820508**

Reference: The schedules which are the integral part of the accounts.

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Case 2:

Deposit rates are increased by lower ratio and correspondingly advances by lower proportion.

Assumptions:

- The ratios for which the deposits may increase are considered as 1.20, 1.25, 1.35 and the corresponding year change is calculated by simulation.
- The ratios for which the advances may increase are considered as 1.10, 1.15, 1.25 and the corresponding year change is calculated by simulation.

Particulars	Deposit		Advances	
Years	Increased by the ratio	Deposits (crores)	Increased by the ratio	Advances (crores)
2008-2009	1.20	50109.99	1.10	32777.833
2009-2010	1.20	60131.99	1.10	36055.616
2010-2011	1.25	75164.99	1.15	41463.958
2011-2012	1.25	93956.24	1.15	47683.552
2012-2013	1.35	126840.92	1.25	59604.440

Deposits and advances in thousands.

Particulars	Deposit		Advances	
Years	Deposits (crores)	Deposits (thousands)	Advances (crores)	Advances (thousands)
2008-2009	50109.99	501099900	32777.833	327778330
2009-2010	60131.99	601319900	36055.616	360556160
2010-2011	75164.99	751649900	41463.958	414639580
2011-2012	93956.24	939562400	47683.552	476835520
2012-2013	126840.92	1268409200	59604.440	596044400

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Thus the income on interest and interest expended on deposits can be calculated by taking the average of the forecasted rates.

Years	Advances	Rates(%)	Interest income	Deposits	Rates(%)	Interest expended
2008-09	327778330	11.61	38055064.40	501099900	7.20	36079192.80
2009-10	360556160	11.72	42257181.95	601319900	7.23	43475428.77
2010-11	414639580	11.71	48554294.82	751649900	7.22	54269122.78
2011-12	476835520	11.74	55980490.05	939562400	7.29	68494098.90
2012-13	596044400	11.72	69856403.68	1268409200	7.25	91959667.00

Thus the total interest earned and expended can be estimated considering the total investments and the deposits as in above charts as follows.

Particulars	Interest earned				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest/discounts on advances	38416744.5	57625116.75	86437675.12	129656512.68	194484769.03
Interest on balances with RBI	55775.16	14055.3	3541.9	892.57	224.92
Other bank funds	113712	86875.96	66373.23	50709.16	38741.79
Interest on investments	38055064.40	42257181.95	48554294.82	55980490.05	69856403.68
Total	76641295.77	99983889.96	135061885.10	185688604.40	264380139.40

All the other factors other than interest on investments are obtained by analyzing the previous year trends, and the same is considered for the below table apart from interest on deposits.

Particulars	Interest expended				
	2008-09	2009-10	2010-11	2011-12	2012-13
Interest on RBI interbank borrowings	121084.5	181626.75	272440.12	408660.18	612990.28
Others	2656368.1	3718915.3	5206481.47	7289074.0	10204703.69
Interest on deposits	36079192.80	43475428.77	54269122.78	68494098.90	91959667.00
Total	38856645.40	47375970.82	59748044.37	76191833.08	10277361.00

The estimated profit and loss account for the succeeding five years is as followed:

Profit and Loss account

(Rs. in thousands)

Particulars	Yr. 2008-09	Yr. 2009-10	Yr. 2010-11	Yr. 2011-12	Yr. 2012-13
Income					
Interest earned	76641295.77	99983889.96	135061885.10	185688604.40	264380139.40
Other income	2961457.15	3130260.20	3308685.86	3497280.08	3696625.05
Total	79602752.92	103114150.20	138370570.90	186038332.50	264776764.50
Expenditure					
Interest expended	38856645.40	47375970.82	59748044.37	76191833.08	10277361.00
Operating expenses	9375359.07	10509777.52	11781460.60	13207017.33	14805066.42
Provisions and	3469949.28	3497708.87	3525690.55	3553896.07	3582327.24

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contingencies					
Total	51701953.71	61383457.21	75055195.52	92952746.48	121164754.70
Profit/loss					
Net profit/loss for the year	27900799.21	41730692.99	63315375.38	93085586.02	143612009.80
Add: profit/loss brought forward	2586125	21308319.44	49849738.46	93716281.98	158719675.10
Total profit	30486924.21	63039012.43	113165113.80	186801868	302331684.9
Appropriations					
Transfer to statutory res.	6975199.80	10432673.25	15828843.85	23271396.51	35903002.45
Transfer to capital res.	1116031.96	1669227.72	2532615.01	3723423.44	5744480.39
Transfer to revenue res.	–	–	–	–	–
Transfer to special reserve u/s 36(1)(8)of IT act	80000.00	80000.00	80000.00	80000.00	80000.00
Transfer as proposed dividend	861040.00	861040.00	861040.00	861040.00	861040.00
Tax on dividend	146333.00	146333.00	146333.00	146333.00	146333.00
Balance carried over to balance sheet	21308319.44	49849738.46	93716281.98	158719675.10	259596829
Total	**30486924.21**	**63039012.43**	**113165113.80**	**186801868**	**302331684.9**

Reference: The schedules which are the integral part of the accounts.

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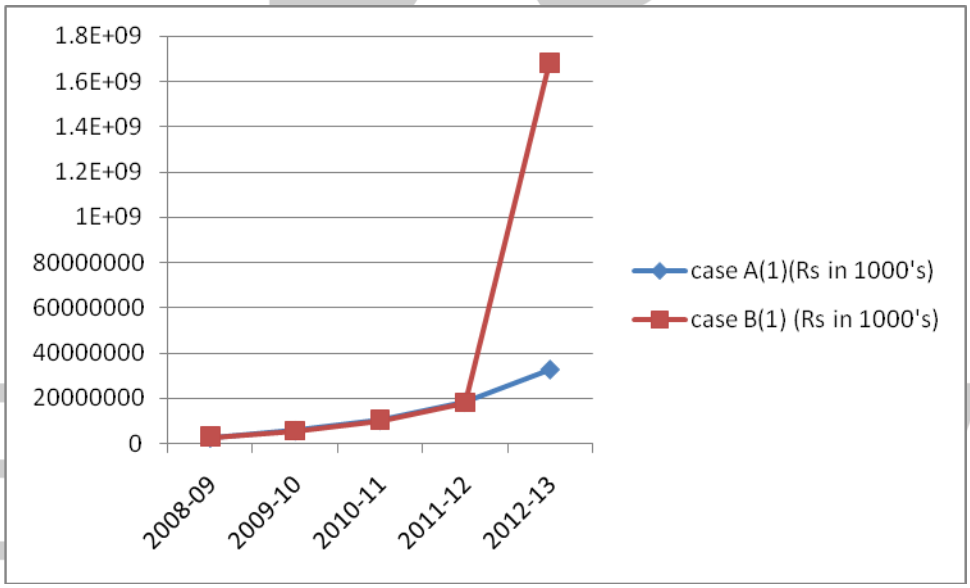
4.1
Comparision between Case A (1) and Case B (1).

Year	Case A(1) (Rs in 1000's)	Case B(1) (Rs in 1000's)
2008-09	25549267.48	27933273.1
2009-10	57291572.97	53558153.06
2010-11	102829709.7	102634727.2
2011-12	183092864.8	180707905.7
2012-13	325505804.1	1684820508



(A)

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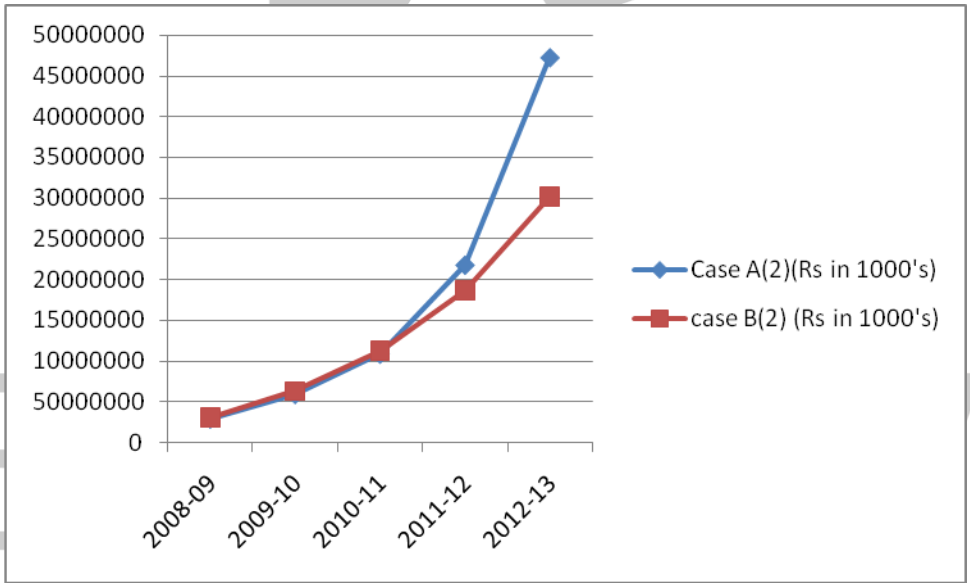
Comparision between Case A(2) and Case B(2).

Year	Case A(2) (Rs in 1000's)	case B(2) (Rs in 1000's)
2008-09	28527777	30486924.21
2009-10	58820446.96	63039012.43
2010-11	108384985.9	113165113.8
2011-12	217692892.1	186801868
2012-13	472756811.3	302331684.9



(B)

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4.2
Conclusion.

A. Considering fig (A)which shows the comparision between the profits when deposit rates are increased by maximum ratio and the advances by lower proportion, it can be seen that the profit income get reduced in case of high inflation as compare to the profit in normal conditions.

B. Considering fig (B)which shows the comparision between the profits when deposit rates are increased by lower ratio and correspondingly the advances by lower proportion, it can be seen that the profit income get reduced in case of high inflation as compare to the profit in normal conditions.

Thus the above inference indicates that the sudden increase in inflation rate to maximum has an negative impact on banks profitability, while the increase in suitable proportion earns profits to the banks to the maximum.

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Recommendations.

A. In case of high inflation period, if deposits seems to be high then bank must ensure that the deposits are used to the optimum, or invest in such a way so as to get the maximum returns . This will make sure that even though the profit margin is less as compare to normal inflation period, the difference in the two will be lowered.

B. In case of normal inflation period, a proper investment policy has to be developed which will ensure that people would be flattered to take loans. Thus it will result into more investment of the bank, means more income money ensuring more profit.

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