

## EFFECT OF INFLATION ON BANKS PERFORMANCE

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### ABSTRACT

*In economics, inflation is a sustained increase in the general price level of goods and services in an economy over a period of time resulting in a loss of value of currency. When the price level rises, each unit of currency buys fewer goods and services. Consequently, inflation reflects a reduction in the purchasing power per unit of money – a loss of real value in the medium of exchange and unit of account within the economy. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index, usually the consumer price index, over time. The opposite of inflation is deflation.*

*Despite the fact that, banks can withstand the effects of inflation in the short run, since banking system mostly operates with reference to interest rate and maturity of financial instruments with less concern about the purchasing power of money. However, the banking system cannot absorb the shocks in the long run. Inflation affect the purchasing power and bank exchange rate regime, opportunity cost of holding currency in the future, worsen loans policy, disrupt business plans and the equity holding performance of banks. While the other side of the argument states that inflation leads to an increase in bank performance as long as the banks can be able to anticipate future inflation and adjust interest rate to generate higher revenue than cost which leads to higher profit and performance as a result of adjusting the rate of interest. The objective of this paper is to conceptually expose the effect of inflation on bank performance. To accomplish this objective, the paper reviews some theoretical and empirical works on the effect of inflation on financial sector performance.*

**Keywords:** *Inflation, Economy, Consumer Price Index, Adjust interest rate etc.*

### I INTRODUCTION

The effect of inflation on banking performance is an important and complex issue. It is important because it has been the primary concern of the investors, shareholders and lenders as well as the managers in planning their programmes for greater efficiency. It distorts the working of the price system and leads to inefficiency in the allocation of resources. Among the most important cost of inflation as it affect banking performance is the uncertainty about future inflation rates. Inflation uncertainty means price uncertainty in the future as a result of numerous factors, which is difficult to measure since it is not directly observed. An obvious measure of the

uncertainty is the concept of variance in the mean which is criticized for the fact that an increase in the variance of inflation does not imply a corresponding rise in inflation uncertainty if available information allows agents to predict some of the increased volatility

## **II INFLATION**

In economics, inflation is a sustained increase in the general price level of goods and services in an economy over a period of time resulting in a loss of value of currency. When the price level rises, each unit of currency buys fewer goods and services. Consequently, inflation reflects a reduction in the purchasing power per unit of money – a loss of real value in the medium of exchange and unit of account within the economy. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index, usually the consumer price index, over time. The opposite of inflation is deflation.

Inflation affects economies in various positive and negative ways. The negative effects of inflation include an increase in the opportunity cost of holding money, uncertainty over future inflation which may discourage investment and savings, and if inflation were rapid enough, shortages of goods as consumers begin hoarding out of concern that prices will increase in the future. Positive effects include reducing the real burden of public and private debt, keeping nominal interest rates above zero so that central banks can adjust interest rates to stabilize the economy, and reducing unemployment due to nominal wage rigidity.

Economists generally believe that high rates of inflation and hyperinflation are caused by an excessive growth of the money supply. However, money supply growth does not necessarily cause inflation. Some economists maintain that under the conditions of a liquidity trap, large monetary injections are like "pushing on a string Views on which factors determine low to moderate rates of inflation are more varied. Low or moderate inflation may be attributed to fluctuations in real demand for goods and services, or changes in available supplies such as during scarcities. However, the consensus view is that a long sustained period of inflation is caused by money supply growing faster than the rate of economic growth.

Today, most economists favor a low and steady rate of inflation. Low (as opposed to zero or negative) inflation reduces the severity of economic recessions by enabling the labor market to adjust more quickly in a downturn, and reduces the risk that a liquidity trap prevents monetary policy from stabilizing the economy. The task of keeping the rate of inflation low and stable is usually given to monetary authorities. Generally, these monetary authorities are the central banks that control monetary policy through the setting of interest rates, through open market operations, and through the setting of banking reserve requirements.

### **2.1 Effects of Inflation**

#### **2.1.1 General**

An increase in the general level of prices implies a decrease in the purchasing power of the currency. That is, when the general level of prices rise, each monetary unit buys fewer goods and services. The effect of inflation is not distributed evenly in the economy, and as a consequence there are hidden costs to some and benefits to others from this decrease in the purchasing power of money. For example, with inflation, those segments in society which own physical assets, such as property, stock etc., benefit from the price/value of their holdings going up, when those who seek to acquire them will need to pay more for them. Their ability to do so will depend on the degree to which their income is fixed. For example, increases in payments to workers and pensioners often lag behind inflation, and for some people income is fixed. Also, individuals or institutions with cash assets will experience a decline in the purchasing power of the cash. Increases in the price level (inflation) erode the real value of money (the functional currency) and other items with an underlying monetary nature.

Debtors who have debts with a fixed nominal rate of interest will see a reduction in the "real" interest rate as the inflation rate rises. The real interest on a loan is the nominal rate minus the inflation rate. The formula  $R = N - I$  approximates the correct answer as long as both the nominal interest rate and the inflation rate are small. The correct equation is  $r = n/i$  where  $r$ ,  $n$  and  $i$  are expressed as ratios (e.g. 1.2 for +20%, 0.8 for -20%). As an example, when the inflation rate is 3%, a loan with a nominal interest rate of 5% would have a real interest rate of approximately 2% (in fact, it's 1.94%). Any unexpected increase in the inflation rate would decrease the real interest rate. Banks and other lenders adjust for this inflation risk either by including an inflation risk premium to fixed interest rate loans, or lending at an adjustable rate.

### **2.1.2 Negative**

High or unpredictable inflation rates are regarded as harmful to an overall economy. They add inefficiencies in the market, and make it difficult for companies to budget or plan long-term. Inflation can act as a drag on productivity as companies are forced to shift resources away from products and services in order to focus on profit and losses from currency inflation. Uncertainty about the future purchasing power of money discourages investment and saving. Inflation can also impose hidden tax increases. For instance, inflated earnings push taxpayers into higher income tax rates unless the tax brackets are indexed to inflation.

With high inflation, purchasing power is redistributed from those on fixed nominal incomes, such as some pensioners whose pensions are not indexed to the price level, towards those with variable incomes whose earnings may better keep pace with the inflation. This redistribution of purchasing power will also occur between international trading partners. Where fixed exchange rates are imposed, higher inflation in one economy than another will cause the first economy's exports to become more expensive and affect the balance of trade. There can also be negative impacts to trade from an increased instability in currency exchange prices caused by unpredictable inflation.

### **2.1.3 Cost-push inflation**

High inflation can prompt employees to demand rapid wage increases, to keep up with consumer prices. In the cost-push theory of inflation, rising wages in turn can help fuel inflation. In the case of collective bargaining, wage growth will be set as a function of inflationary expectations, which will be higher when inflation is high. This can cause a wage spiral. In a sense, inflation begets further inflationary expectations, which beget further inflation.

#### **Hoarding**

People buy durable and/or non-perishable commodities and other goods as stores of wealth, to avoid the losses expected from the declining purchasing power of money, creating shortages of the hoarded goods.

#### **Social unrest and revolts**

Inflation can lead to massive demonstrations and revolutions. For example, inflation and in particular food inflation is considered as one of the main reasons that caused the 2010–11 Tunisian revolution and the 2011 Egyptian revolution, according to many observers including Robert Zoellick, president of the World Bank. Tunisian president Zine El Abidine Ben Ali was ousted, Egyptian President Hosni Mubarak was also ousted after only 18 days of demonstrations, and protests soon spread in many countries of North Africa and Middle East.

#### **Hyperinflation**

If inflation becomes too high, it can cause people to severely curtail their use of the currency, leading to an acceleration in the inflation rate. High and accelerating inflation grossly interferes with the normal workings of the economy, hurting its ability to supply goods. Hyperinflation can lead to the abandonment of the use of the country's currency (for example as in North Korea) leading to the adoption of an external currency (dollarization).<sup>[45]</sup>

#### **Allocative efficiency**

A change in the supply or demand for a good will normally cause its relative price to change, signaling the buyers and sellers that they should re-allocate resources in response to the new market conditions. But when prices are constantly changing due to inflation, price changes due to genuine relative price signals are difficult to distinguish from price changes due to general inflation, so agents are slow to respond to them. The result is a loss of allocative efficiency.

#### **Shoe leather cost**

High inflation increases the opportunity cost of holding cash balances and can induce people to hold a greater portion of their assets in interest paying accounts. However, since cash is still needed in order to carry out transactions this means that more "trips to the bank" are necessary in order to make withdrawals, proverbially wearing out the "shoe leather" with each trip.

#### **Positive**

Labour-market adjustments

Nominal wages are slow to adjust downwards. This can lead to prolonged disequilibrium and high unemployment in the labor market. Since inflation allows real wages to fall even if nominal wages are kept constant, moderate inflation enables labor markets to reach equilibrium faster.<sup>[47]</sup>

#### **Room to maneuver**

The primary tools for controlling the money supply are the ability to set the discount rate, the rate at which banks can borrow from the central bank, and open market operations, which are the central bank's interventions into the bonds market with the aim of affecting the nominal interest rate. If an economy finds itself in a recession with already low, or even zero, nominal interest rates, then the bank cannot cut these rates further (since negative nominal interest rates are impossible in order to stimulate the economy – this situation is known as a liquidity trap.

#### **Mundell–Tobin effect**

The Nobel laureate Robert Mundell noted that moderate inflation would induce savers to substitute lending for some money holding as a means to finance future spending. That substitution would cause market clearing real interest rates to fall. The lower real rate of interest would induce more borrowing to finance investment. In a similar vein, Nobel laureate James Tobin noted that such inflation would cause businesses to substitute investment in physical capital (plant, equipment, and inventories) for money balances in their asset portfolios. That substitution would mean choosing the making of investments with lower rates of real return. (The rates of return are lower because the investments with higher rates of return were already being made before.) The two related effects are known as the Mundell–Tobin effect. Unless the economy is already overinvesting according to models of economic growth theory, that extra investment resulting from the effect would be seen as positive.

#### **Instability with deflation**

Economist S.C. Tsiang noted that once substantial deflation is expected, two important effects will appear; both a result of money holding substituting for lending as a vehicle for saving. The first was that continually falling prices and the resulting incentive to hoard money will cause instability resulting from the likely increasing fear, while money hoards grow in value, that the value of those hoards are at risk, as people realize that a movement to trade those money hoards for real goods and assets will quickly drive those prices up. Any movement to spend those hoards "once started would become a tremendous avalanche, which could rampage for a long time before it would spend itself." Thus, a regime of long-term deflation is likely to be interrupted by periodic spikes of rapid inflation and consequent real economic disruptions. Moderate and stable inflation would avoid such a seesawing of price movements.

#### **Financial market inefficiency with deflation**

The second effect noted by Tsiang is that when savers have substituted money holding for lending on financial markets, the role of those markets in channeling savings into investment is undermined. With nominal interest rates driven to zero, or near zero, from the competition with a high return money asset, there would be no price mechanism in whatever is left of those markets. With financial markets effectively euthanized, the remaining goods and physical asset prices would move in perverse directions. For example, an increased desire to save could not push interest rates further down (and thereby stimulate investment) but would instead cause additional money hoarding,

driving consumer prices further down and making investment in consumer goods production thereby less attractive. Moderate inflation, once its expectation is incorporated into nominal interest rates, would give those interest rates room to go both up and down in response to shifting investment opportunities, or savers' preferences, and thus allow financial markets to function in a more normal fashion.

### **III CAUSES**

Historically, a great deal of economic literature was concerned with the question of what causes inflation and what effect it has. There were different schools of thought as to the causes of inflation. Most can be divided into two broad areas: quality theories of inflation and quantity theories of inflation. The quality theory of inflation rests on the expectation of a seller accepting currency to be able to exchange that currency at a later time for goods that are desirable as a buyer. The quantity theory of inflation rests on the quantity equation of money that relates the money supply, its velocity, and the nominal value of exchanges. Adam Smith and David Hume proposed a quantity theory of inflation for money, and a quality theory of inflation for production

*Demand-pull inflation* is caused by increases in aggregate demand due to increased private and government spending, etc. Demand inflation encourages economic growth since the excess demand and favourable market conditions will stimulate investment and expansion.

*Cost-push inflation*, also called "supply shock inflation," is caused by a drop in aggregate supply (potential output). This may be due to natural disasters, or increased prices of inputs. For example, a sudden decrease in the supply of oil, leading to increased oil prices, can cause cost-push inflation. Producers for whom oil is a part of their costs could then pass this on to consumers in the form of increased prices. Another example stems from unexpectedly high insured losses, either legitimate (catastrophes) or fraudulent (which might be particularly prevalent in times of recession).<sup>1</sup>

Built-in inflation is induced by adaptive expectations, and is often linked to the "price/wage spiral". It involves workers trying to keep their wages up with prices (above the rate of inflation), and firms passing these higher labor costs on to their customers as higher prices, leading to a 'vicious circle'. Built-in inflation reflects events in the past, and so might be seen as hangover inflation.

#### **Unemployment**

A connection between inflation and unemployment has been drawn since the emergence of large scale unemployment in the 19th century, and connections continue to be drawn today. However, the unemployment rate generally only affects inflation in the short-term but not the long-term. In the long term, the velocity of money supply measures such as the MZM ("Money Zero Maturity," representing cash and equivalent demand deposits) velocity is far more predictive of inflation than low unemployment.

### **Monetarist view**

Monetarists believe the most significant factor influencing inflation or deflation is how fast the money supply grows or shrinks. They consider fiscal policy, or government spending and taxation, as ineffective in controlling inflation. The monetarist economist Milton Friedman famously stated, *"Inflation is always and everywhere a monetary phenomenon."*

### **IV EFFECT OF INFLATION IN BANKING SECTOR**

Inflation affects bank performance as it transfers money from savers and investors to debtors. Therefore, the opportunity cost of holding currency in the future may discourage savings that will in turn affect the performance of banks. The amount of savings that would be available at the disposal of the banks will decrease as savers will prefer to invest in non-monetary capital projects to avoid losses expected from the declining purchasing power of money. Another effect of inflation is that the purchasing power of currency becomes less valuable with the passage of time and that affect the bank exchange rate regime which worsen the trade performance of banks and further discourages export which leads to deficit bank balance and fall in the exchange rate.

Inflation usually disrupts business planning of banks. Budget becomes difficult because of the uncertainties created by the phenomenon in both prices of services and cost of inputs that reduced planned investment spending. It worsens the loans policy which affects the performance of banks as a result of withdrawals by depositors from the banking system. This reduces bank resources thereby decreasing a large proportion of their profitability. In other words, it reduces the in and out flow of loans and advances since banks may not want to lend except at a higher interest rate which discourages borrowing by the deficit spending unit. Inflation also affects the equity/shareholding performance of bank which reduces their equity capital thereby affecting the long-run efficiency of the banks. This is because the real share prices of banks are inversely related to both anticipated and unanticipated inflation.

- If there is moderate inflation and where inflation rate is lower than interest paid by banks to depositors it is beneficial to the latter as there is no capital erosion.
- However high inflation leads to increased rate of interest and business people suffer as they have to pay higher rate of interest for their borrowings. The risk of loan default is more as inflation rises.
- Changes in rate of interest marginally affects banks as their spread is less. What they gain from high interest they pass on major part of benefit to depositors.
- However a lower interest rate will add to economic growth and beneficial to the economy, provided inflation is under control. As interest rate falls both interest payable to depositors as well as interest income received from borrowers come down.
- The banks make more profit if interest rates are hiked. The interest that the banks pay to their customers is fixed. The bank invests the money put in by its customers at a higher rate in bonds etc and that is how they make money. As the interest rates increase the yield on the bank's investments will increase but what they owe to their investors will remain the same. This is one way in which banks can make more profit from higher interest rates.

- Inflation has its positives and negatives for banks but overall it benefits lenders banks. This is because the only raw material that a bank has is money. Inflation sharply brings down the cost of this raw material. Say a bank has lent Rs 100 crore to a steel mill. The company plans to repay the debt from its sales of Rs 10 crore every year. Because of inflation price of steel goes up and it realizes Rs 15 crore. This puts the company in a better place to repay the debt.
- Since prices are going up regularly people would rather consume things on borrowed money rather than save for them. This results in a sharp rise in demand for loans. Demand for loans also increases because businessmen start hoarding. By hoarding say Rs 100 kgs of sugar for six months a trader can expect to make more money this compels him to borrow more.
- The flip side is people are reluctant to place deposits with the bank. To control interest rates the central bank will increase interest rates. This will cause bond prices to crash. Banks are by law required to invest 23% of their deposits in government bonds— all these bonds will see their price crash as new bonds will provide higher interest rate.
- If the inflation increases that means interest rates will be more on deposits then it leads to reduction in the net interest income then further it leads to reduction in profit.

## **V CONTROLLING INFLATION**

Governments and central banks primarily use monetary policy to control inflation. Central banks such as the RBI increase the interest rate, slow or stop the growth of the money supply, and reduce the money supply. Some banks have a symmetrical inflation target while others only control inflation when it rises above a target, whether express or implied.

Most central banks are tasked with keeping their inter-bank lending rates at low levels, normally to a target annual rate of about 2% to 3%, and within a targeted annual inflation range of about 2% to 6%. Central bankers target a low inflation rate because they believe deflation endangers the economy.

Higher interest rates reduce the amount of money because fewer people seek loans, and loans are usually made with new money. When banks make loans, they usually first create new money, then lend it.

Monetarists emphasize a steady growth rate of money and use monetary policy to control inflation by increasing interest rates and slowing the rise in the money supply. Keynesians emphasize reducing aggregate demand during economic expansions and increasing demand during recessions to keep inflation stable. Control of aggregate demand can be achieved using both monetary policy and fiscal policy (increased taxation or reduced government spending to reduce demand).

### **Fixed exchange rates**

Under a fixed exchange rate currency regime, a country's currency is tied in value to another single currency or to a basket of other currencies (or sometimes to another measure of value, such as gold). A fixed exchange rate is usually used to stabilize the value of a currency, vis-a-vis the currency it is pegged to. It can also be used as a means to control inflation. However, as the value of the reference currency rises and falls, so does the currency pegged to it. This essentially means that the inflation rate in the fixed exchange rate country is determined by the inflation rate of the country the currency is pegged to. In addition, a fixed exchange rate prevents a government from using domestic monetary policy in order to achieve macroeconomic stability.

### **Gold standard**



Two 20 krona gold coins from the Scandinavian Monetary Union, a historical example of an international gold standard

The gold standard is a monetary system in which a region's common media of exchange are paper notes that are normally freely convertible into pre-set, fixed quantities of gold. The standard specifies how the gold backing would be implemented, including the amount of specie per currency unit. The currency itself has no *innate value*, but is accepted by traders because it can be redeemed for the equivalent specie. A U.S. silver certificate, for example, could be redeemed for an actual piece of silver.

The gold standard was partially abandoned via the international adoption of the Bretton Woods system. Under this system all other major currencies were tied at fixed rates to the dollar, which itself was tied to gold at the rate of US\$35 per ounce. The Bretton Woods system broke down in 1971, causing most countries to switch to fiat money – money backed only by the laws of the country.

Under a gold standard, the long term rate of inflation (or deflation) would be determined by the growth rate of the supply of gold relative to total output.<sup>[62]</sup> Critics argue that this will cause arbitrary fluctuations in the inflation rate, and that monetary policy would essentially be determined by gold mining.

### **Wage and price controls**

Another method attempted in the past have been wage and price controls ("incomes policies"). Wage and price controls have been successful in wartime environments in combination with rationing. However, their use in other contexts is far more mixed. Notable failures of their use include the 1972 imposition of wage and price controls

by Richard Nixon. More successful examples include the Prices and Incomes Accord in Australia and the Wassenaar Agreement in the Netherlands.

In general, wage and price controls are regarded as a temporary and exceptional measure, only effective when coupled with policies designed to reduce the underlying causes of inflation during the wage and price control regime, for example, winning the war being fought. They often have perverse effects, due to the distorted signals they send to the market. Artificially low prices often cause rationing and shortages and discourage future investment, resulting in yet further shortages. The usual economic analysis is that any product or service that is under-priced is over consumed. For example, if the official price of bread is too low, there will be too little bread at official prices, and too little investment in bread making by the market to satisfy future needs, thereby exacerbating the problem in the long term.

Temporary controls may *complement* a recession as a way to fight inflation: the controls make the recession more efficient as a way to fight inflation (reducing the need to increase unemployment), while the recession prevents the kinds of distortions that controls cause when demand is high. However, in general the advice of economists is not to impose price controls but to liberalize prices by assuming that the economy will adjust and abandon unprofitable economic activity. The lower activity will place fewer demands on whatever commodities were driving inflation, whether labor or resources, and inflation will fall with total economic output. This often produces a severe recession, as productive capacity is reallocated and is thus often very unpopular with the people whose livelihoods are destroyed (see creative destruction).

### **Stimulating economic growth**

If economic growth matches the growth of the money supply, inflation should not occur when all else is equal. A large variety of factors can affect the rate of both. For example, investment in market production, infrastructure, education, and preventative health care can all grow an economy in greater amounts than the investment spending.

### **Cost-of-living allowance**

The real purchasing-power of fixed payments is eroded by inflation unless they are inflation-adjusted to keep their real values constant. In many countries, employment contracts, pension benefits, and government entitlements (such as social security) are tied to a cost-of-living index, typically to the consumer price index. A *cost-of-living allowance* (COLA) adjusts salaries based on changes in a cost-of-living index. It does not control inflation, but rather seeks to mitigate the consequences of inflation for those on fixed incomes. Salaries are typically adjusted annually in low inflation economies. During hyperinflation they are adjusted more often. They may also be tied to a cost-of-living index that varies by geographic location if the employee moves.

Annual escalation clauses in employment contracts can specify retroactive or future percentage increases in worker pay which are not tied to any index. These negotiated increases in pay are colloquially referred to as cost-of-living adjustments ("COLAs") or cost-of-living increases because of their similarity to increases tied to externally determined indexes.

## **VI CONCLUSION**

Even though, banks can be able to withstand the effects of inflation at its initial stages, since banking system mostly operates with reference to interest rate and maturity of financial instruments ignoring the purchasing power of money. However, when the rate of inflation becomes stronger, the banking system cannot absorb the shock. This paper has examined the effect of inflation on bank performance. It has been observed that inflation has an adverse effect on banking sector performance and its spillover effect is detrimental to the overall economy. Inflation acts as a drag on performance as banks are usually compelled to shift their resources from more productive activities simply to focus on profit and losses from currency inflation.

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