DOES CONSUMER PRICE INDEX REPRESENT THE ACTUAL RATE OF INFLATION? – A STUDY ON GENERAL MEASUREMENT OF INFLATION IN THE CURRENT ERA

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ABSTRACT

This paper explores the causes, types and costs of inflation with the concept of inflation. Given the overall economy's complexity as the world biggest transition economy, the inflation pattern presents recurrent episodes of cyclical inflation surge and decline. This paper then examined the inflation determinants. With the review of literature and previous concept this paper identifies the effects of inflation and show the measuring system of inflation. CPI or consumer price index system is widely used measurement procedure of inflation. but with the change of life style and necessity of people only CPI cannot represent the actual rate of inflation in the current decade. This paper examined the basket of CPI and also shows some overall inflationary chart of current decade. with the change of standard of living the necessity and the choice of goods and services of the consumers changes. so now a days CPI cannot perfectly represents the inflationary situation. To find out the appropriate measurement process further research is necessary. This paper concludes with some suggestions regarding anti inflationary policies.

KEYWORDS: Inflation, Types of Inflation, Measurement of Inflation, CPI

INTRODUCTION

Inflation is a steady an upward movement in the level of prices decreasing purchasing power over a period of time, usually one year. The rate at which the general level of prices for goods and services is rising, and, subsequently, purchasing power is falling. Central banks attempt to stop severe inflation, along with severe deflation, in an attempt to keep the excessive growth of prices to a minimum.

As inflation rises, every dollar will buy a smaller percentage of a good. For example, if the inflation rate is 2%, then a $1 pack of gum will cost $1.02 in a year. Most countries' central banks will try to sustain an inflation rate of 2-3%. Inflation is defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase. As inflation rises, every dollar you own buys a smaller percentage of a good or service.

OBJECTIVES OF THE STUDY

The general objective of the study is to examine and analyze the different aspects of Inflation, The challenges that are now confronting and the real situation that are now prevailing in the socio economic context of developing countries.

However the Study Will Cover the Following Specific Objectives

- To understand the types and effects of inflation

- To explain the concept of cost of inflation

- To trace out the emergence of measurement of price inflation

- To examine and analyze the practical situation of measuring price inflation with Consumer Price Index

- To find out the challenges those are being confronted with CPI

- To suggest suitable recommendations for anti inflation policies

LITERATURE REVIEW

The value of a dollar does not stay constant when there is inflation. The value of a dollar is observed in terms of purchasing power, which is the real, tangible goods that money can buy. When inflation goes up, there is a decline in the purchasing power of money. For example, if the inflation rate is 2% annually, then theoretically a $1 pack of gum will cost $1.02 in a year. After inflation, your dollar can't buy the same goods it could beforehand. There are two main schools thoughts as to the causes of inflation: monetarist views and Keynesian views. Basically, monetarists emphasize long-term money supply effects on inflation while Keynesians tend to address inflation in the short run. Monetarists considered money growth as the only cause of inflation by applying an aggregate supply and aggregate demand framework. Starting from the natural equilibrium level, the money supply increases shifts in the aggregate demand curve rightward followed by the unemployment rate decline and wage increase, which leads to the aggregate supply curve's shift leftward until it reaches the new equilibrium (Dem and Gao, 2001). The new equilibrium presents a higher price level. As monetarist economist Milton Friedman stated, "Inflation is always and everywhere a monetary phenomenon". They believe that any change of money supply will change the price level, which obeys Fisher's equation $MV=PQ$ where M is the nominal quantity of money, V is the velocity of money in final expenditures, P is the general price level and Q is an index of the real value of final expenditures. However, this view has two important assumptions: constant V and Q, which has been challenged by Keynesian thinkers. What if V is not constant and stable? How about the time lags between M an P given that P is sticky, especially in the short run?

Keynesians view the causal link between M and P the other way round and focus on demand-pull and cost-push inflation. Specifically, one important assumption of Keynesian model is that the aggregate supply curve is horizontal and then vertical, which implies the aggregate demand increase probably due to government spending would not fuel price at the very beginning, but further demand and spending increases will become inflationary. According to Robert J. Gordon's (1988)' "triangle model", inflation can be driven by demand pull inflation, cost push inflation and built-in inflation. Demand-pull inflation indicates that the excess demand will stimulate spending and investment, which requires increasing the quantity of money in circulation faster than the real growth rate of the economy and will then lead to price rise. Cost-push inflation implies that producers will pass cost increases on to consumers' price. The cost increases could originate from wages increases, raw materials price increases, import price increases and indirect taxes increase or government subsidies reduction. Built-in inflation is closely related to wage spiral, which assumes that firms will pass higher labor costs on to consumers since workers require higher wage to keep up with the price, which will then lead to a vicious inflation circle. In terms of cost-push inflation, monetarists believe that "cost-push arguments for inflation are misleading because they primarily are based on some microeconomic observations on the supply-side" and "in general that the firm- or industry-specific cost increases cannot be inflationary as long as they are not related to, or accommodated by, increases in the money supply" (Aykut and Faruk, 2002). Their argument only shows inflation is a monetary phenomenon to some extent, but cannot prove money supply is the determinant of inflation.

The third block of explanatory factors of inflation is inertial factors such as expected inflation, price stickiness and possible indexation experiences in the economy (Aykut and Faruk, 2002). The traditional Phillips curve addresses the tradeoff between wage inflation and unemployment while the new Phillips curve imports inflation expectation

assumptions. Many studies related to inflation occurred in the framework of the Phillips curve (Roberts, J. M. 1995; Fuhrer, J C, 1997; Bhanthumnavin, 2002; Razzak, W. A. 2002; Gali J., Gertler M. and Lopez-Salido D, 2005; Genberg H. and Pauwels L. 2005; Rudd, J. and Whelan K. 2005; Scheibe J. and Vines D. 2005; Pami Dua, 2009). The traditional

backward looking Phillips curve usually can be modelled as $\pi_t = \alpha + \sum_{i=1}^{n} \beta_i \pi_{t-i} + \sum_{i=1}^{n} \gamma_i D_i + \sum_{i=1}^{n} \lambda_i X_i + \sum_{i=1}^{n} \psi_i Z_i + \sum_{i=1}^{n} \phi_i T_i + \varepsilon_t$, while the

new forward looking Phillips curves is $\pi_t = \alpha + \beta E_t[\pi_{t+1}] + \sum_{i=1}^{n} \gamma_i D_i + \sum_{i=1}^{n} \lambda_i X_i + \sum_{i=1}^{n} \psi_i Z_i + \sum_{i=1}^{n} \phi_i T_i + \varepsilon_t$ "where π denotes inflation rate, E is the expectations operator, D denotes domestic demand side factors, X represents external demand side factors, Z represents domestic supply side factors and T represents external supply side factors" (Pami Dua, 2009). However, Pami's new forward model does not cover all inflation determinants. According to Aykut and Faruk (2002), most inflation causes analysis assume that "financial markets are highly developed and functioning very well in the presence of necessary laws and rules", but for developing countries with poor financial system, institutional, political and cultural factors need to be taken into consideration.

Therefore, the theoretical causes of inflation discussion can be summarized in five blocks: money supply, demand, and cost, as well as inertial and institutional factors. But how do these five blocks interact to contribute to inflation? Based on US experience, Laurence (1993) argued that "the average inflation rate over long periods is determined by the extent to which the average rate of money growth exceeds the average growth rate of real output. Short-run inflation fluctuates around its long-run average because of demand shocks, such as large increases in government spending, and supply shocks, such as sharp rises in the prices of food and energy". I think he provides a good perspective to analysis inflation dynamics. Besides, I believe institutional factors play an important role in explaining short-run inflation fluctuation, especially for developing countries. But how does the long-run link to the short-run? According to Laurence (1993), "the distinction between short-run and long-run determinants of inflation is blurred by the fact that short-run changes often influence the long-run trend" via inflationary expectations or inertial factor. He used the US as an example to explain that the Fed often fulfilled inflation expectation by raising the money supply in order to avoid recession when a demand or cost shock raises short-run inflation and then stimulate inflation expectation. In brief, inflation is determined by excess liquidity in the long run while short-run inflation fluctuation is explained by demand, cost and institutional factors, besides, inertial factors serve as bridge between the short-run and the long-run. In practice, how are these five blocks determinants captured in research?

Costs of Inflation

Almost everyone thinks inflation is evil, but it isn't necessarily so. Inflation affects different people in different ways. It also depends on whether inflation is anticipated or unanticipated. If the inflation rate corresponds to what the majority of people are expecting (anticipated inflation), then we can compensate and the cost isn't high. For example, banks can vary their interest rates and workers can negotiate contracts that include automatic wage hikes as the price level goes up.

Problems Arise when there is Unanticipated Inflation

- Creditors lose and debtors gain if the lender does not anticipate inflation correctly. For those who borrow, this is similar to getting an interest-free loan.

- Uncertainty about what will happen next makes corporations and consumers less likely to spend. This hurts economic output in the long run.

- People living off a fixed-income, such as retirees, see a decline in their purchasing power and, consequently, their standard of living.

- The entire economy must absorb re pricing costs ("menu costs") as price lists, labels, menus and more have to be updated.

- If the inflation rate is greater than that of other countries, domestic products become less competitive. People like to complain about prices going up, but they often ignore the fact that wages should be rising as well. The question shouldn't be whether inflation is rising, but whether it's rising at a quicker pace than your wages.

inflation isn't intrinsically good or bad. Like so many things in life, the impact of inflation depends on your personal situation.

Causes of Inflation

Economists wake up in the morning hoping for a chance to debate the causes of inflation. There is no one cause that's universally agreed upon, but at least two theories are generally accepted: Demand-Pull Inflation - This theory can be summarized as "too much money chasing too few goods". In other words, if demand is growing faster than supply, prices will increase. This usually occurs in growing economies.

Cost-Push Inflation - When companies' costs go up, they need to increase prices to maintain their profit margins. Increased costs can include things such as wages, taxes, or increased costs of imports.

Demand Pull Inflation occurs when Aggregate demand (C+I+G+(X-M)) increases at a rate faster than the capacity of the economy to produce goods and services ie: AD>AS. This increase competition for goods and services drives up their prices.
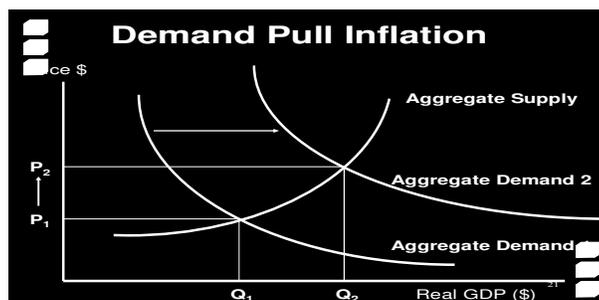
- An increase in demand shifts the aggregate demand curve to the right, from AD1 to AD2 pushing up the price level

Sources of Demand Pull Inflation

- Any increase in Aggregate Demand $(C + I + G + (X – M))$ as the economy approaches full employment.

- Full employment causes labour shortages, employers thus bid up wages to attract labour. The increased income, transpires into increased consumption causing Aggregate Demand to rise.

- High levels of foreign investment increases employment, income, consumptions and ultimately Aggregate Demand

- Growth in foreign economies can lead to higher incomes for our exporters, thus allowing increases in Aggregate Demand.

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- Inflationary expectations – If members of an economy expect prices to rise, it brings forward expenditure decisions leading to demand pull inflation eg: Pre GST in Australia.

- Increasing consumption due to changes in consumption patterns (less savings at any level of income).

- Monetary consideration – too much credit in the economy. A relaxed monetary policy leads to a reduction in interest rates leading to an increase in Aggregate Demand and thus prices.

Cost Push Inflation

Cost Push Inflation occurs when prices are pushed up by rising costs to producers who compete with each other for increasingly scarce resources. The increased costs are passed onto consumers.
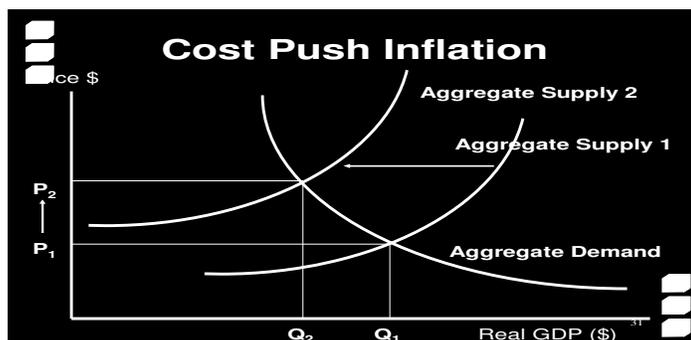
An increase in the prices of inputs shifts the aggregate Supply Curve to the left, from AS1 to AS2 pushing up the price level from P1 to P2.

Sources of Cost Push Inflation

- Any input may become a major cost to business eg: wage increases lead to higher production costs.

- Labour shortages in some sectors necessitate wage increases in that sector, however it has a domino effect leading to wage rises in other sectors.

  NB: Wage rises in excess of productivity increase leads to inflationary pressure.

The extend to which a producer can pass on price rises depends on the level of competition in the industry.

The more competitive the industry, the more the producer has to absorb costs rather than pass them onto consumers.

Inflation imported from abroad, eg: the rise in the cost of intermediate goods and resources imported from other countries flows through in the form of higher prices domestically eg: oil prices.

Government budgetary problems – an increase in the cost of public utilities eg: electricity, water etc, leads to higher costs to business and households.

Effects of Inflation

- **Macroeconomic effects of inflation**

o Consumption structure changes, investment decisions became more complicated → total output falls

- o Substitution of labour for capital (if wages are growing faster than productivity) → structural unemployment increases

- o Exchange rate fluctuation , export is more expensive, domestic currency depreciates → prices of imported goods are growing . Final effect of depreciations depends on price elasticity of imported and exported goods.

- **Effects on output and economic efficiency -** inflation may be associated with either a higher or lower level of output and employment;

- There is no effect on real output, efficiency, or income distribution of an **inflation** that is both **balanced and anticipated.**

Measuring Inflation

Inflation is a rise in the general level of prices of goods and services in an economy over a period of time. Inflation also reflects erosion in the purchasing power of money. Given the importance of inflation in maintaining social stability, how to measure inflation and which measurement should be used as the main macroeconomic indicator is crucial for analyzing and guiding national macroeconomic policies. Inflation is estimated by calculating the inflation rate of price index, usually CPI (consumer price index).

Measuring inflation is a difficult problem for government statisticians. To do this, a number of goods that are representative of the economy are put together into what is referred to as a "market basket." The cost of this basket is then compared over time. This results in a price index, which is the cost of the market basket today as a percentage of the cost of that identical basket in the starting year. In North America, there are two main price indexes that measure inflation:

- **Consumer Price Index** (CPI) - A measure of price changes in consumer goods and services such as gasoline, food, clothing and automobiles. The CPI measures price change from the perspective of the purchaser. U.S. CPI data can be found at the Bureau of Labor Statistics.

- **Producer Price Indexes** (PPI) - A family of indexes that measure the average change over time in selling prices by domestic producers of goods and services. PPIs measure price change from the perspective of the seller. U.S. PPI data can be found at the Bureau of Labor Statistics.

Constructing the CPI Index

The basket of goods and services upon which the CPI is based is divided into 8 groups. Which are further divided into a number of sub-groups and then into specific expenditure classes.

The Eight Groups of the CPI are as Follows

- Food

- Clothing

- Housing

- Education and Recreation

- Transportation

- Tobacco and Alcohol

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- Health and Personal Care

- Household Equipment and Operation

To reflect the importance of each expenditure class in relation to total household expenditure, weight or measure of relative importance to each expenditure class in the CPI, are attached to each item in the index.

Weights are compiled as a result of extensive surveys of patterns of consumption and are revised every 5 years to take account of changes in expenditure patterns.

General Overall CPI Index

		Period 1		Period 2	
Commodity	**Weight**	**Price**	**W x P**	**Price**	**W x P**
Food	40	.65	26	.80	32
Clothing	30	.70	21	.80	24
Housing	20	1.15	23	1.15	23
Recreation	10	1	10	1.10	11
Total	100		80		90
Price Index		100			112.50
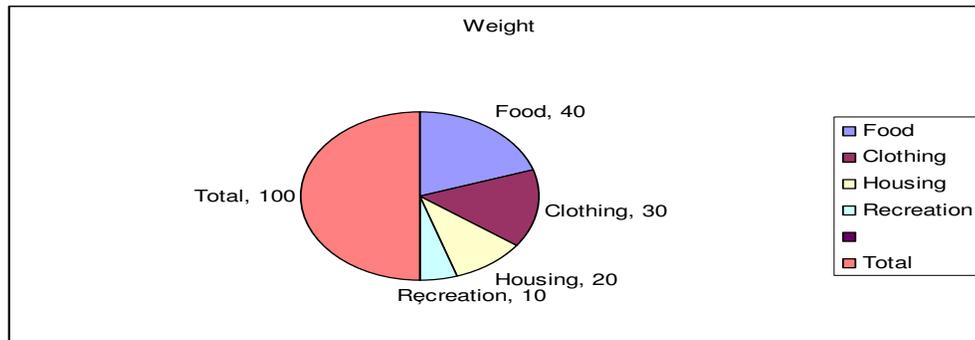
Calculating Inflation

Year 2 cost   100

.... x ....

Year 1 cost   1

Suppose Cost on a specific good increases from $80 to $90 so we can calculate inflation rate as follow

90   100

.... x   ....   = 112.5

80   1

112.5 – 100 (Base Year) = 12.5 %.   From this we can say over the year, average prices increased by 12.5 %.

Inflation is a steady and upward movement in the level of prices, decreasing purchasing power, over a given period of time, usually one year. The CPI can be thought of as an imaginary 'basket' of selected goods and services bought

by a typical capital city household. The CPI is merely a measure of the changes in the price of this basket of goods and services.The price of the CPI basket in the base (first) period is given a value of 100 and the prices of subsequent periods are compared against the base year. For example, if the price of the basket had increased 15% since the base year, the CPI would read 115, if the price had fallen by 15% since the base year the CPI would be 85.

It is important to remember that the CPI measures price movements and not actual price levels.

For example, if the index for beer is 108 and the corresponding index for wine during the same period is 104 it doesn't mean that the price of beer. Is more expensive than wine.

It means that the price of beer has increased twice as much as that of wine since the base year.

Compilation of the CPI involves a quarterly survey of a 'basket' of goods and services representing a high proportion of household expenditure.

The usefulness of an index number in statistics is to allow comparisons of data between one period and another, using a common unit of measurement

Economists, investors and politicians around the world rely on an accurate measure of price inflation to aid decision making; but does the CPI measure inflation correctly?

Having looked into the matter, I have been struck by the inadequacy of the CPI to measure inflation and the resulting distortions in decision making that the CPI produces. In the long run, the various PPIs and the CPI show a similar rate of inflation. This is not the case in the short run, as PPIs often increase before the CPI. In general, investors follow the CPI more than the PPIs.
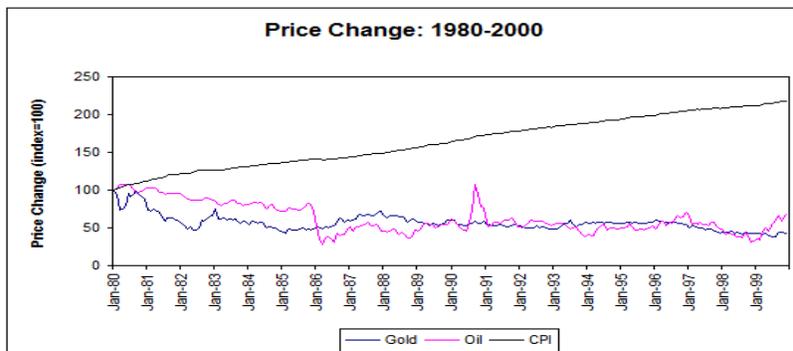
Importance of Price Inflation

Accurate measurement of price inflation is a vital function. Not only is price inflation used to rebase asset returns and real interest rates; but it is also used to index payments and costs. It's no exaggeration to say that people's livelihood is put on the line by a blatantly incorrect CPI calculation. I've seen many mistakes made by investors over the years, but I regard the attachment to CPI as by far the most serious and costly error. Once the measure of inflation is corrupt; all the real data that professionals use is then corrupt. They are no longer able to comprehend the economic situation around them and make poor investment decisions as a result.
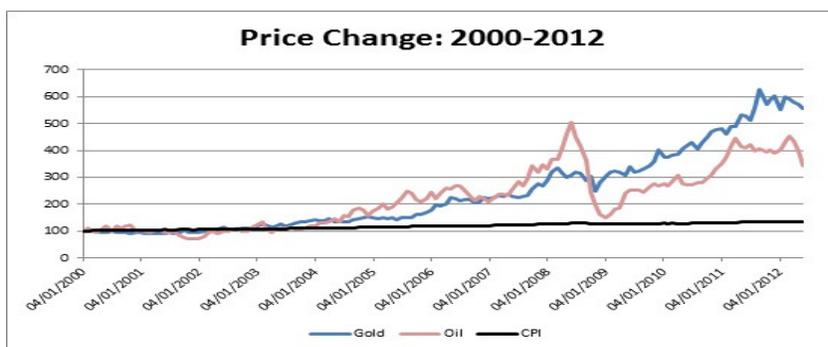
Price Inflation Charts
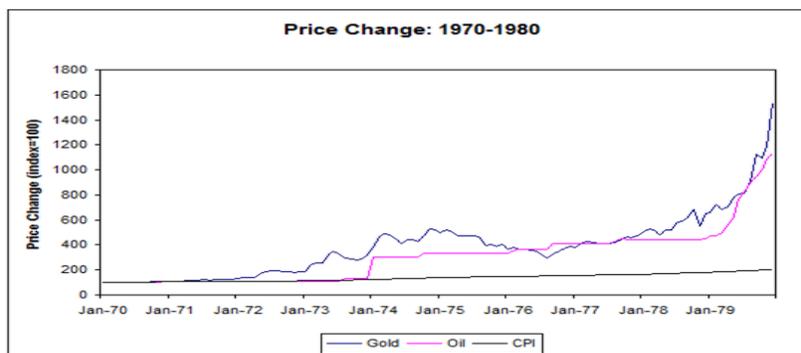
The 1970's is an example of a decade where living standards were falling. In this environment, the CPI exhibits a large downward bias relative to the true rate of price inflation. We see that commodity prices went through the roof during the 1970's – a trend that the CPI measure was unable to reflect.

We see the opposite effect in the 1980 & 1990's. Reforms in the early 1980's produced economic growth. The quality of goods within the CPI basket improved and the CPI measure grossly overstated the true rate of price inflation. Gold and oil prices actually declined over the 20 years in question, yet the CPI measure continued to float relentlessly upwards.

Looking at the last 12 years has been a case of déjà vu back to the 1970's. Poor economic performance has led to a huge under-reporting of price inflation through CPI, relative to moves in commodity prices. Almost nobody believes that the CPI is accurately measuring the inflation rate.

Does the CPI Measure Inflation?

The CPI does not measure inflation accurately. It provides a totally distorted measure of inflation that is swayed by changes in living standards within the consumption basket. During periods of falling living standards, it under-reports the rate of price inflation. During periods of rising living standards, it over-reports the rate of price inflation. In order to measures price changes across a constant standard of living, it is useful to measure the price movement of physical commodities (where quality does not vary). An ounce of gold is still an ounce of gold & a barrel of oil is still a barrel of oil, regardless of any changes in living standards. For this reason, I use commodity prices as my measure of inflation.

Why the CPI Does NOT Measure Inflation ?

The CPI is a cost of living indicator, calculated with a basket of goods that VARIES over time. As it is attempting to measure price changes in a typical consumption basket, it does not compare price changes across a like-for-like basket of goods over time. As living standards fall, people switch into lower quality goods. This then affects the composition of

goods within the CPI basket as consumption patterns have changed. The deterioration of goods within the CPI basket causes a downward bias, as the comparison within the basket is not like-for-like over time. The same effect is in place during periods of rising living standards. People switch into higher quality goods as their incomes increase and this changes the CPI consumption basket. The improvement of quality within the CPI basket causes a large upside bias within the CPI number over time, relative to the true rate of price inflation. The CPI measure is TOTALLY UNSUITED to measure price changes across a CONSTANT STANDARD OF LIVING. All it does is measure price change across a variable basket of goods, for the average consumer. This makes it a totally invalid measure of price inflation for investment purposes.

Anti-Inflationary Policy

Fiscal policy, monetary policy and supply-side policy.

- **Monetary Measures**

Credit control is one of the significant monetary measures strategies. The central bank of the nation follows a number of ways to control the quantity and quality of credit. For this cause, it raises the bank rates sells securities in the open market, raises the reserve ratio and follows a number selective credit control measures such as raising margin requirements and regulating consumer credit.

But one of the monetary measures is to demonetize currency of higher denominations. Such measures are usually followed when there is more of black money in the nation.

The most tremendous monetary measure is the issue of new currency in place of the old ones. Under this operation, one new currency note is negotiated for a number of currency notes of the old ones. The value of bank deposits is also set respectively.

- **Fiscal Measures**

Fiscal measures such as slashing down unwanted expenditure, rise in taxes, rise in savings, surplus budgeting and public debt.

Similar to monetary measures fiscal measures alone cannot help in controlling inflation and they should be surrogated by monetary, non-monetary and non-fiscal measures.

- **Other Measures**

The other types of measures are those which aim at increasing aggregate supply and reducing aggregate demand directly.

To Increase Production

. The Following Measures Should be Adopted to Increase Production

- One of the foremost measures to control inflation is to increase the production of essential consumer goods like food, clothing, kerosene oil, sugar, vegetable oils, etc.

- If there is need, raw materials for such products may be imported on preferential basis to increase the production of essential commodities.

Government and Central Bank Anti-Inflationary Measures

- Decrease of budget deficit

- Loan restriction

- Price and wage freeze

CONCLUSIONS

Finally, inflation is a sign that an economy is growing. In some situations, little inflation (or even deflation) can be just as bad as high inflation. The lack of inflation may be an indication that the economy is weakening. As you can see, it's not so easy to label inflation as either good or bad - it depends on the overall economy as well as our personal situation.

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