Impact of Gross Domestic Product on Inflation in India

Ghanathe Ramesh, Chegu Jyothi

***Abstract*— Inflation is a sustained increase in the general price level of goods and services in an economy over a period of time. Inflation has long been the common man's concern about economic activity. Inflation is the most immediate economic parameter to be associated with the increase in price; it has its long and far reaching effects on the society and social concerns. In the global market the currencies those applying the monetary strategies in the international level are less vulnerable to the effects of global inflation than the currencies of the poorer and developing nations. So in respect of obtaining a better view of the effects and influence of inflation on the society we need to take mainly the experience of poor and developing nations. Inflation will affect on countries gross domestic product. This paper analyses the effects of inflation on our country's gross domestic product that emerged in the recent past 10 years.**

***Index Terms*— Inflation, Economy, Gross Domestic Product**

I. INTRODUCTION

For many years the relationship between economic growth and inflation has been one of the most widely researched topics in macroeconomics. In economics, inflation is defined as the increase in the level of prices and economic growth and is usually defined as the Gross Domestic Product (GDP). It measures the market values of a country's final goods in a specified period: *GDP = Consumption + Investment + Government Expenditure + Exports – Imports.*

An increase in inflation means that prices have risen. With an increase in inflation, there is a decline in the purchasing power of money, which reduces consumption and therefore GDP decreases. High inflation can make investments less desirable, since it creates uncertainty for the future and it can also affect the balance of payments because exports become more expensive. As a result, GDP is decreases further. So it appears that GDP is negatively related to inflation. However, there are studies indicating that there may also be a positive relationship. The Phillips curve, for example, shows that high inflation is consistent with low rates of unemployment, implying that there is a positive impact on economic growth.

In this paper I examine empirically the relationship between inflation and economic growth (GDP) in the India.

Manuscript received April 23, 2017

Ghanathe Ramesh, Associate Professor, Varhaman College Of Engineering, Shamshabad, Telangana

Chegu Jyothi, Varhaman College Of Engineering, Shamshabad, Telangana

II. REVIEW OF LITERATURE

Saymeh and Orabi observed the influence rate of interest, inflation rate and GDP on real economic growth in Jordan for the period from 2000 to 2010 using financial econometrics. Johansen cointegration test results confirmed that all the variables were associated in the long-run. Moreover, regression test results illustrated that interest rate and inflation rates had a shock on economic growth rate.

Semuel and Nurina examined the influence of inflation rate, rates of interest and exchange rates on gross domestic product in Indonesia based on monthly time series data between 2005 (June) and 2013 (December) using statistical techniques. The results demonstrated that there was a noteworthy negative association between interest rates and GDP as well as an important positive association between exchange rates and the GDP, whereas inflation was not a momentous persuade on GDP.

III. REASONS FOR INFLATION

Increase in money supply:

Over the last few years the rate of increase in money supply has varied between 15 and 18 per cent, whereas the national output has increased at an annual average rate of only 4 per cent. Hence the rate of increase in output has not been sufficient to absorb the rising quantity of money in the economy. Inflation is the obvious result.

Deficit financing:

When the government is unable to raise adequate revenue for its expenditure, it resorts to deficit financing. During the sixth and seventh Plans, massive doses of deficit financing had been resorted to. It was Rs. 15,684 crores in the sixth Plan and Rs. 36,000 crores in the seventh Plan.

Increase in government expenditure:

Government expenditure in India during the recent years has been rising very fast. What is more disturbing, proportion of non-development expenditure increased rapidly, being about 40 per cent of total government expenditure. Non-development expenditure does not create real goods; it only creates purchasing power and hence leads to inflation.

Not only the above mentioned factors on the Demand side cause inflation, factors on the Supply side also add fuel to the flame of inflation.

Inadequate agricultural and industrial growth:

Agricultural and industrial growth in our country has been much below what we had targeted for. Over the four decades period, food grains output has increased and-.i.e. of 3.2 per cent per annum.

But there are years of crop failure due to droughts. In the years of scarcity of food grains not only the prices of food articles increased, the general price level also rose.

Failure of crops always encouraged big wholesale dealers to indulge in hoarding which accentuated scarcity conditions and pushed up the price level.
Performance of the industrial sector, particularly in the period 1965 to 1985, has not been satisfactory. Over the 15 years period from 1970 to 1985, industrial production increased at a modest rate of 4.7 per cent per annum.
Our industrial structure, developed on the basis of heavy industry-led growth, is not suitable to meet the current demand for consumer goods.

Rise in administered prices:
In our economy a large part of the market is regulated by government action. There are a number of important commodities, both agricultural and industrial, for which the price level is administered by the government.
The government keeps on raising prices from time to time in order to cover up losses in the public sector. This policy leads to cost-push inflation.
The upward revision of administered prices of coal, iron and steel, electricity and fertilisers were made at regular intervals. Once the administered prices are raised, it is a signal for other price to go up.

Rising import prices:
Inflation has been a global phenomenon. International inflation gets imported into the country through major imports like fertilisers, edible oil, steel, cement, chemicals, and machinery. Increase in the import price of petroleum has been most spectacular and its contribution to domestic price rise is very high.
Rising taxes:
To raise additional financial resources, government is depending more and more on indirect taxes such as excise duties and sales tax. These taxes invariably raise the price level.

IV. IMPACT OF INFLATION

Inflation affects both the economy of a country and its social conditions, as well as the political and moral lives of its inhabitants. However, the economic effects of inflation are stated and described below:
Price inflation has immense effect on the Time Value of Money (TVM). This acts as a principal component of the rates of interest, which forms the basis of all TVM calculations. The real or estimated changes occurring in the rates of inflation lead to changes in the rates of interest as well.
Inflation exerts impact on the treasury of a nation as well. In United States of America, Treasury Inflation-protected Securities (TIPS) ensures safety to the American government, assuring the public that they will get back their money. However, the rates of interest charged by TIPS are less compared to the standard Treasury notes.
The most immediate effect of inflation is the decrease in the purchasing power of dollar and its depreciation. Inflation influences the investments of a country. The Inflation-protected Securities (IPSs) may act as a guard against the loss in the purchasing power of the fixed-income investments (like fixed allowances and bonds), which may occur during inflation.
Inflation changes the allocation of income. This exerts maximum effect on the lenders than the borrowers at the time of persisting inflation, because the loans sanctioned previously are paid back later in the form of inflated dollars.

V. OBJECTIVES OF THE STUDY

The main objective of the study is to analyse the impact of gross domestic product on inflation in Indian from the year 2008 to 2017.

VI. RESEARCH METHODOLOGY

The study is based on secondary data. Inflation and growth rate is collected from World Economic Outlook for the period of ten years from 2008 to 2017.

Tools Used``
Karl Pearson's Correlation Coefficient is used to study the relationship between inflation and
Gross domestic product.
Karl Pearson's Correlation Coefficient

YEAR	GDP (x)	INFLATION(y)	X2	Y2	XY
2008	3.89	9.7	15.13	94.09	37.73
2009	8.48	14.97	71.91	224.1	126.95
2010	10.26	9.47	105.27	89.68	97.16
2011	6.64	6.49	44.09	42.12	43.09
2012	5.62	11.17	31.58	124.77	62.77
2013	6.64	9.13	44.09	83.36	60.62
2014	7.24	5.86	52.42	34.34	42.42
2015	7.56	6.32	57.15	39.94	47.78
2016	7.62	2.23	58.06	4.97	16.99
2017	7.61	2.24	57.91	5.01	17.05
N=10	**71.56**	**77.58**	**537.61**	**742.38**	**552.56**

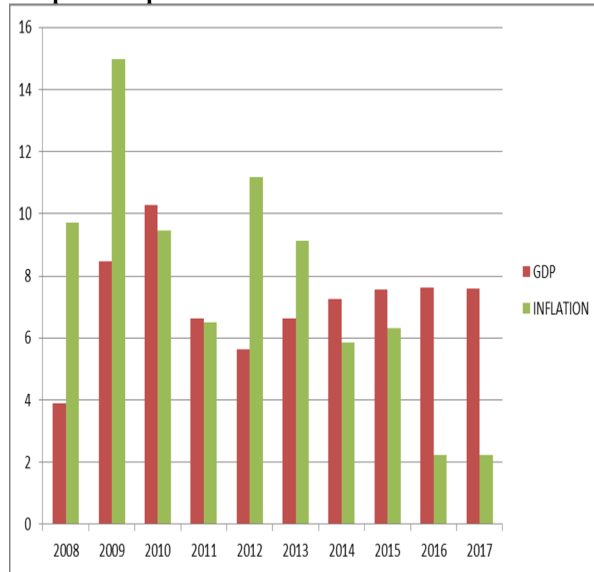
Source: www.statitsta.com, world economic outlook

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[n\Sigma x^2 - (\Sigma x)^2][n\Sigma y^2 - (\Sigma y)^2]}}$$

R=10*552.56-(71.56*77.58)

√10*537.61-(71.56)2 (10*742.38-(77.58)2
R= **-0.0434**
Karl Pearson's Correlation Coefficient between gross domestic product and inflation is **-0.0434**
According to the Karl Pearson's Correlation Coefficient gross domestic product, inflation always in negative relation means if gross domestic product decreases inflation increases or gross domestic product increases inflation decreases.

Graphical representation



The above graph shows that the inflation and gross domestic product is always fluctuating in India. There is no continuous growth in Indian gross domestic product whereas bar diagram shows that inflation rate is decreasing from 2012 to 2017, which is good side to the Indian economy.

VII. MEASURES FOR CONTROLLING INFLATION

1. Monetary Measures:

The government of a country takes several measures and formulates policies to control economic activities. Monetary policy is one of the most commonly used measures taken by the government to control inflation.

In monetary policy, the central bank increases rate of interest on borrowings for commercial banks. As a result, commercial banks increase their rate of interests on credit for the public. In such a situation, individuals prefer to save money instead of investing in new ventures.

This would reduce money supply in the market, which, in turn, controls inflation. Apart from this, the central bank reduces the credit creation capacity of commercial banks to control inflation.

The monetary policy of a country involves the following:

(a) Rise in Bank Rate:

Refers to one of the most widely used measure taken by the central bank to control inflation.

The bank rate is the rate at which the commercial bank gets a rediscount on loans and advances by the central bank. The increase in the bank rate results in the rise of rate of interest on loans for the public. This leads to the reduction in total spending of individuals.

The main reasons for reduction in total expenditure of individuals are as follows;

(i) Making the borrowing of money costlier:

Refers to the fact that with the rise in the bank rate by the central bank increases the interest rate on loans and advances by commercial banks. This makes the borrowing of money expensive for general public.

Consequently, individuals postpone their investment plans and wait for fall in interest rates in future. The reduction in investments results in the decreases in the total spending and helps in controlling inflation.

(ii) Creating adverse situations for businesses:

Implies that increase in bank rate has a psychological impact on some of the businesspersons. They consider this situation adverse for carrying out their business activities. Therefore, they reduce their spending and investment.

(iii) Increasing the propensity to save:

Refers to one of the most important reason for reduction in total expenditure of individuals. It is a well-known fact that individuals generally prefer to save money in inflationary conditions. As a result, the total expenditure of individuals on consumption and investment decreases.

(b) Direct Control on Credit Creation:

The central bank directly reduces the credit control capacity of commercial banks by using the following methods**:**

(i) Performing Open Market Operations (OMO):

Refers to one of the important method used by the central bank to reduce the credit creation capacity of commercial banks. The central bank issues government securities to commercial banks and certain private businesses.

(ii) **Changing Reserve Ratios:**

Involves increase or decrease in reserve ratios by the central bank to reduce the credit creation capacity of commercial banks.

2. Fiscal Measures:

The two main components of fiscal policy are government revenue and government expenditure. In fiscal policy, the government controls inflation either by reducing private spending or by decreasing government expenditure, or by using both.

3. Price Control:

In this method, inflation is suppressed by price control, but cannot be controlled for the long term. In such a case, the basic inflationary pressure in the economy is not exhibited in the form of rise in prices for a short time. Such inflation is termed as suppressed inflation.

CONCLUSION

Compared with other developing countries, India with a good economic condition. Nowadays Indian Gross Domestic Product is increasing and inflation rate decreasing. Government of India also doing very great job regarding inflation and Gross Domestic product, when observe with last decade lot of change we can see in development of Indian economy, and government also should implement some easy policies to entrepreneurs in India to start a new companies in our nation. And government should implement strict monetary policies and fiscal policies in India.

REFERENCES

[1]Trivedi M.L, Jhinghan. M. L (2009), Managerial Economics, Theory and Applications, Tata McGraw Hill, New Delhi.

[2]Mithani. D. M (2009), Principles of Economics, Himalaya Publishing House.

[3]Saymeh, A. A. F. and Orabi, M. M. A. (2013). The Effect of Interest Rate, Inflation Rate, GDP, on Real Economic Growth Rate in Jordan. *Asian Economic and Financial Review*, 3(3), 341-354.

[4]Semuel, H. and Nurina, S. (2015). Analysis of the Effect of Inflation, Interest Rates, and Exchange Rates on Gross Domestic Product (GDP) in Indonesia. Proceedings of the International Conference on Global Business, Economics,
[5]Finance and Social Sciences (GB15_Thai Conference), Bangkok, Thailand, 20-22 February 2015 Paper ID: T507, 1-13
[6]Abel, Andrew; Bernanke, Ben (2005). Macroeconomics (5th ed.). Pearson
[7]Petersen Craig. H (2009), Managerial Economics, 4 th edition, Pearson Education