An Economic Analysis on Historic Inflation Rate in India

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Abstract
India's inflationary experience was a varied basket. There were some years the annual inflation rate reached a maximum of 40%, while other years were negative. Wholesale price index, differs in a wide range as the lowest value of -12.5% for the year 1952-53 and the highest amount of 38.3% for the year 1943-44. The highest value is due to the end of the world war-II. The years of high, inflation is mainly the impact of War, low agricultural production due to drought and oil price hike up in foreign countries. The inflation rate was below 6% for 38 years and above 6% for 40 years out of 78 years beginning from 1939-40 to 2016-2017. Suppose, it is assumed that India's bearable rate of Inflation is equal to or below 6%, then, India appears to be worst in controlling inflation. On the other hand, the rate of inflation above 6% to 15% was for 31years and above 15% for nine years. Therefore, many accept as accurate that India is to be an Inflation driven country. The severe economic setback in the Indian economy is inflation, which hinders the economic power of the people. Most of the people are still suffering due to increase in India. These major study aims to support the Government, and economists should generate better policies for the control the rise.
Keywords: inflation, GDP, WPI, CPI-IW, Economic reforms

Introduction

India's track record of inflation is right in the sense that it has never had to face the terror of hyperinflation. India's inflationary experience was a varied basket. There were some years the annual inflation rate reached a maximum of 40%, while other years were negative. The inflation rate was below 6% for 38 years and above 6% for 40 years out of 78 years beginning from 1939-40 to 2016-2017. Suppose, it is assumed that India's bearable rate of Inflation is equal to or below 6%, then, India appears to be worst in controlling inflation. On the other hand, the rate of inflation above 6% to 15% was for 31years and above 15% for nine years. Therefore, many accept as accurate that India is to be an Inflation driven country. They believe that Inflation is a permanent feature of the Indian economy. In the Indian economy, there was a relatively stable inflationary pressure from the beginning of the Second World War, partly, on the one hand, ever mounting demand and on the other hand, insufficient supply.

The expansion in demand is due to the rapid increase of population, rising money incomes, expansion in money supply, liquidity in the country, the increasing volume of black money and continuous rise in demand for advantages and services due to rapid economic development. Amount of product and service is increasing, but it is inadequate compared to the increase in demand. It is because of the collapse of the rainy season, the use of backward technology, the transport and power issues, the lack of virtual inputs and Political issues in the utilization of resources.

Review of Literature

The inflationary pressures have been investigated by different researchers for the different countries over different sample periods and provided conflicting evidence on the issue.

Abhiman Das et al., (2007) examined the Inflation, a rise in the general level of prices, is not an easy thing to measure. Many price statistics are possible to keep tabs on average rates. An index like the Wholesale Price Index tracks the prices of commodities sold in wholesale markets. Others, like the Consumer Price Indices, trace the expenses an average consumer pay for the goods or services they acquire. There are broader indexes, like the GDP deflator, which is based on gross domestic product. While each of the measures has its benefits as well as weaknesses, the selected standard of inflation should broadly capture the interplay of sufficient demand and supply forces in the economy. However, the recent period has witnessed growing evidence of some divergence in the annual movement of the general price indices and GDP deflator over the longer term. This paper addresses this point of why and how actions of GDP deflator diverge from other price indices in India. Besides conceptual variations, GDP deflator and price indices change on account of the distinct sectoral methodologies developed for converting GDP at current prices to GDP at constant prices. In particular, GDP deflator does not have a long-run equilibrium relation with WPI. Therefore, the utility of WPI as a standard of inflation in India seems to be limited.

Rajkumar A. Waingade (2011) examined to Indian economy have offered enough evidence to show that inflationary pressures have emanated from agricultural or food sector of the Indian economy. In the Indian context, it is said, that the natural calamities like flood or drought, and infrastructural bottlenecks in agriculture cause the production and thus the supply of agricultural/ food articles to fall short of demand, causing their prices to inch up. The price rise so began further momentum when organized labor succeeds in securing higher wages to compensate for the increase in their cost of living. This means increased industrial costs, which breed what is called cost-push inflation. So price rise begins in the agricultural or food sector whereby food prices rise on account of shortfall in production and get transmitted to non-food articles, resulting in inflation in the general level of prices. It thus can be said that the price level in India is mostly governed by agricultural production and to be specific by the food grains productions.

Rakesh Kumar (2013) studied the inflation dynamics after following new economic policy in the Indian economy by employing Restricted Vector Autoregressive technique. Inflation variable has a cointegrating relationship with other macroeconomic variables. Money supply turned out to be the most crucial variable in explaining the variation in inflation overtime, followed by import index variable. IIP has inflation discouraging effect. Besides, apart from the economic variables, moral suasion factor has also been proved to be important in controlling Indian inflation Cointegrating relationship among the variables has a significant bearing on the inflation dynamics. Moreover, increase bears a stable and correcting relationship with CPI and import index variables. However, such connection is unstable and explosive with money supply and IIP.

Naresh Kanwar (2014) investigated the Inflation is as standard in the Indian economy as cold and flu in the winter season. It is, therefore, one of the biggest challenges for an economy like India which is on the path of development and growth and, inflation is like a caterpillar that eats away the organic cream of an economy. In this research paper, we are going to analysis the increase and its factors, the difficulties that it brings and will also summarize the inflation for independence, particularly the food increase and supply-side factors behind surging food prices and examine the demand. It will further describe the methods of measuring inflation, the different types of inflation, and what factors are responsible for the current high rate of increase in India.

Monica and Vignesh (2017) investigated the growing number in the developing countries are practicing inflation as it is a monetary policy framework. The Central bank of India is attempting to implement rise, targeting it to take into account the various experiences from other countries. This study provides an analysis of differences in inflation due to its implementation. This research explains that there is a significant effect on the implemented rise and variability of growth. It provides the best statistical explanation of inflation dynamics and CPI inflation as an inflation measure. This outcome also shows that Indian firms follow backward and forward-looking behavior. Both the real marginal cost and exchange rate pass-through play an essential role in inflation. India is more backward viewing in price setting behavior when compared to the UK and Australia, although the price rigidity is significantly higher in both countries. At the time of Inflation on average the Indian firms keeps the price fixed for a specific period mostly ranging from 9-10 months, and the rest of the Indian firms reset their prices at any given point of time as such Inflation is a state where the Value of Money falls and the Price increases.

Methodology

Statement of Problem

Standard and savings. Reduction in savings results in lower investment and capital formation. Inflation lowers the foreign direct investment as the rising cost of materials and inputs are less profitable to foreign investment. Uncertainty about prices and increase in product costs also reduce production. Inflation also results in a reduction of exports because the rise in domestic input prices makes the price of domestically produced products valuable in the international market. Also, inflation results in increased imports because of the higher rate of locally produced products results in increased demand for imports. The increase in imports and a decrease in exports caused by inflation, resulting in an adverse balance of payments in the country. Most importantly, inflation redistributes income from wage earners and fixed income groups to profit recipients and from creditors to debtors. This, in turn, increases the number of poor and on the other hand, increases the amount of costly and hence, it results in more inequality. The living standard of urban dweller is adversely affected by inflation in India. Most importantly, the rise in India may misallocate resources from productive to unproductive sectors. According to the fundamental concept of economics, excess of the money supply causes inflation primarily. This excess is dominant because when people allowed offering more money for goods, the number of products cannot be balanced with the amount of money that automatically raises the price of goods. The cost of goods rises, not only because the assets are scarcer than before because money is more abundant and less valued.

The severe economic setback in the Indian economy is inflation, which hinders the economic power of the people. Most of the people are still suffering due to increase in India. These major study aims to support the Government, and economists should generate better policies for the control the inflation.

Research Gap

However, No research work has attempted a review of the inflationary process in India for such a long period of 77 years. Therefore, the present research has taken the effort to study various aspects of inflation. The unique feature of this study is that the overall period of 77 years starting from 1939 to 2017 has been divided into four stages based on important major historical events happened during the study period to analyze the Inflation trend in India in the past and derive useful implications. The four steps are as stage I : Set up of RBI and its nationalization (From 1935 to 1949), stage II : RBI nationalization and Nationalization of Commercial Banks (From 1949 to 1969), stage III: Nationalization of Commercial banks and implementation of LPG or New Economic Policy (From1969 to 1991), stage IV: implementation of LPG or New Economic Policy and till data (From 1991 to 2017). This study has mainly focused on the followings.

Objective of the Study

To investigate the different economic reforms taken by the government of India that had actions which affect the trends in inflation in India since 1939.

Methodology and Data Sources

In the present paper, the historic inflation rate in India has been inspected. This study has used three macroeconomic variables, namely consumer price index (CPI-IW), Wholesale Price Index (WPI), and Gross Domestic Product deflator (GDP). The required data were collected from Annual Reports of Reserve Bank of India for the period from 1939-40 to 2016-17. This study has employed the Basic Descriptive Statistics (Mean and Standard Deviation), Correlation Coefficient. For data analysis, the researcher has made the use of SPSS-16.0 software.

Limitations of the Study

The present study is based on aggregate data, and it has the restriction of aggregate data. Taking the availability of the published data on macro aggregates, the study is limited up to the latest period 2016-2017. As the aggregate data for all variables under investigation is not available regionally and sector wise, the study is limited at the national level. As the study is entirely based on time series secondary data obtained from different published sources, authenticated sources have been chosen without any personal bias. However, the limitation is inherent to the secondary data are to be recognized.

Results and Discussion

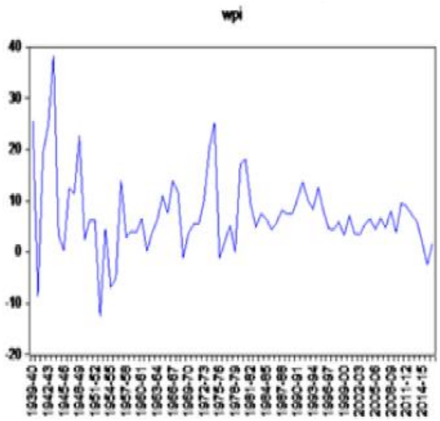
Measure of Inflation in India

Inflation is the rate of change in the general price level. For measuring the general price level, index numbers are created by taking a weighted average of price of individual goods and services. The weight allocated to each good or service reflects the relative importance of that good or service in the economy or the consumption basket of consumers and producers. The general price index so constructed indicated the overall magnitude of prices of goods and services. The comparison of a general price index over some time gives us the variety in the general price level, which is nothing but the rate of inflation. In India, there are mainly three types of measures of the general price level in particularly 1) wholesale price index(WPI), 2) consumer price level, and 3) GDP deflator. The rate of inflation can be contained in terms of any one of these three measures.

The WPI is the most widely used measure of Inflation rate in India. The WPI is available for all the commodities of major, sub and Individual groups. The primary benefit of the rule of Inflation is its availability at high frequencies of weekly basis with a gap of about two weeks, and thereby, it enables to monitor the price fluctuations continuously. It also helps the policymakers to take necessary measures to control the price fluctuations. The main disadvantage of this measure of Inflation is that it doesn't cover the services and non-commercial goods.

CPI reflects the cost of living conditions of a homogeneous group of consumers for which it is constructed and based on the retail price of commodities generally consumed by the group. Currently, four categories of CPI are available in India. They are CPI for industrial workers(CPI-IW), CPI for rural laborers (CPI-AL), CPI for urban non-manual employees (CPI-UM). Among the four, CPI-IW is very popular with better coverage, whereas CPI-AL and CPI-UE are meant to measure the impact of inflation on rural and urban poverty, respectively. The third measure of inflation, GDP deflator is derived from the national income accounts as a ratio of GDP at current prices to GDP at constant prices. The scope and coverage of the GDP deflator are more full than any other measure, for it encompasses the entire spectrum of economic activities including services. At the instant, the GDP deflator is available only annually with a long lag of over one year and hence has minimal use for the conduct of policy.

Chart 1 Growth of Wholesale Price Index (1950-51 To 2016-2017)



Source: Computed by Author

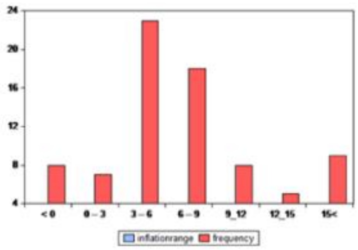
It indicates that Inflation, according to the wholesale price index, differs in a wide range as the lowest value of -12.5% for the year 1952-53 and the highest amount of 38.3% for the year 1943-44. The highest value is due to the end of the world war-II. The years of high, inflation is mainly the impact of War, low agricultural production due to drought and oil price hike up in foreign countries. The frequency distribution of the increase in India with various range for the period from 1939-40 to 2016-17 is given in table 1.

Table 1 Wpi Inflation - Frequency Distribution (1939-40 to 2016-17)

Distribution of Inflation Range (In%)	Frequency in Years	Percent
< 0	8	10.3
0 – 3	7	8.9
3 – 6	23	29.5
6 – 9	18	23.1
9 -12	8	10.3
12 -15	5	6.4
15<	9	11.5

Source: Computed by Author

Chart 2 Frequency Distribution of



Source: Computed by Author

It is seen from the table 2 that the range of Inflation rate between 3% to 6% has the highest frequency of 23 years for the entire period and 6% to 9% has the second highest incidence of 18 years. The inflation rate between 9% to 12%, 12% to 15% and above has a frequency of 23 years, and Below 3% has a frequency of 15 years. In the view of Inflation in India, It is a constant problem and is indicated by the fact that it has been above 6% for about 40 years in 78 years.

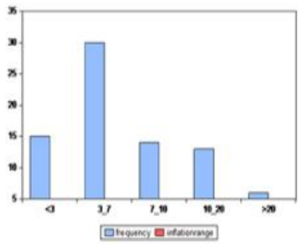
Table 2 Distribution of Inflation Range to Different Types of Inflation Category

Distribution of Inflation Range (In%)	Frequency in Years	Percent
Creeping inflation (<3)	15	19.2
Walking increase (3-7)	30	38.5
Trotting inflation (7-10)	14	17.9
Running inflation (10-20)	13	16.6
Hyperinflation (>20)	6	7.7

Source: Computed by Author

It is seen from the table 2 that the range of Inflation rate between 3% to 7% has the highest frequency of 30 years for the entire period and 7% to 10% has the second highest incidence of 14 years. The inflation rate between 10% to 20% and above 20 has a frequency of 19 years and below 3% has a frequency of 15 years.

Chart 3 Frequency Distribution Of Wholesale Price Index Compared With Different Category of Inflation Ranges



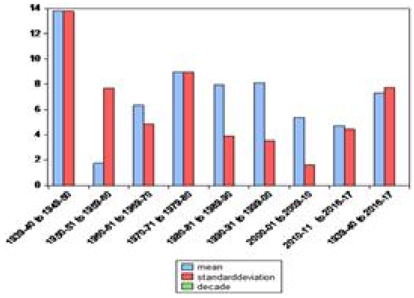
Source: Computed by Author

Table 3 Decade Wise WPI Inflation Rate (Annual Average)

Years	Mean
1939-40 to 1949-50	13.82 (13.78)
1950-51 to 1959-60	1.74 (7.70)
1960-61 to 1969-70	6.35(4.88)
1970-71 to 1979-80	8.98 (8.97)
1980-81 to 1989-90	7.97 (3.89)
1990-91 to 1999-00	8.13 (3.56)
2000-01 to 2009-10	5.39 (1.63)
2010-11 to 2016-17	4.73 (4.43)
Long-term Trend 1939-40 to 2016-17	7.32 (7.78)

Source: Computed by Author

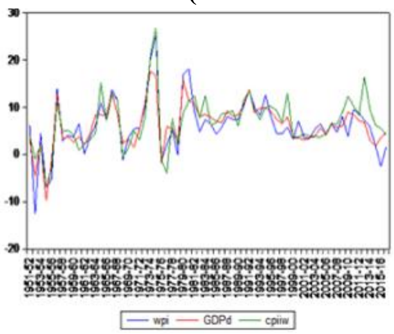
Chart 4 Decade Wise Wholesale Inflation Rate



Source: Computed by Author

By considering decadal average inflation rates, it is seen from the table 3 that the decade of the 1940s was the highest at 13.82% while the decade of 1950s was the lowest at 1.74%. This sudden decline from 13.82% to 1.74% was due to prices of controlled commodities like food grains, cloth, yarn, pig iron and steel, prohibition of futures trading in several products to check the speculation, imposition of export duties on some of the articles exported, reduction in government expenditure, regulation of credit facilities so as to control speculative hoarding of stock of essential commodities, introduction of national savings campaign as also substantial tax reliefs and other concessions to individuals and industries with a view to encourage investment. Then, the average inflation rate scrambled to 6.34% during the 1960s, and further, it rose up to 8.90% during 1970s. During the decades of the 1980s and 1990s, the average inflation rate was around 8%. During the decade of the 2000s and 2010s, the average inflation rate has declined to 5.39 % and 5.23%. The overall average inflation for the whole decades from 1939-40 to 2016-17 is at 7.32.

Chart 5 Growth Rate of Alternative Indicators of Inflation Rates (1950-51 to 2016-17)



Alternative Indicators of Inflation in India

Apart from the WPI, there are two more inflation indices that are constructed and used in India. Though, the WPI is the preferred choice of both academicians and policymakers, for its advantages such as extensive coverage, significant frequency and data availability with a lag of just two weeks, the other two indices, A look at the table reveals that the inflation rate based on all the three indices has been unpredictable, particularly during the earlier decades. The WPI inflation, during 78 years, has moved in the range of -12.5% and 38.3%. Here a comparison of increase based on all the three indices is attempted for 78 years. For CPI-IW and GDP deflator, the data available is for the last 66 years, respectively.

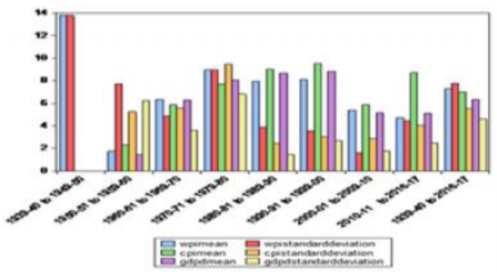
Table 6 Comparison Between Behaviour of Average Inflation Rates and its Stranded Deviation

Period	WPI	CPI-IW	GDP d
1940-50	13.82 (13.78)	0	0
1950-60	1.74 (7.70)	2.34 (5.25)	1.45 (6.24)
1960-70	6.35 (4.88)	5.89 (5.57)	6.31 (3.61)
1970-80	8.98 (8.96)	7.72 (9.48)	8.05 (6.82)
1980-90	7.97 (3.89)	9.04 (2.43)	8.68 (1.48)
1990-00	8.13 (3.56)	9.52 (3.03)	8.84 (2.66)
2000-10	5.38 (1.63)	5.87 (2.88)	5.16 (1.78)
2010-17	4.73 (4.43)	8.70 (4.07)	5.12 (2.47)
Long-term Trend 1939-2017	7.32* (7.79)	7.01** (5.50)	6.35** (4.61)

*1939-2016 **1950-2016

Source: Computed by Author

Chart 6 Stage Wise Average Rate of Inflation



It is understood from the above table that during the decade of 1950-60, the average consumer price index (CPI) rate was at 2.34 percent, which is more than that of Wholesale price index at 1.7 and GDP deflator at 1.5. By comparing the previous decade with 1960-70, all three price indicators denote an increase in the average rate of inflation, and at the same time, The average consumer price index (CPI) rate was at 5.89 which is lower than that of WPI at 6.35 and GDP deflator at 6.31. From the decades 1970-80 to 1990-2000, it is observed that there is a gradual increase in all the three price indicators except the decade of 1980-90 during which the WPI rate decreased to some extent of 1 percent when compared to the previous decade.

While comparing the first decade of the 20th century with the previous decade, it is seen that there is around 3 percent fall in all the three price indicators. During the 20th century of 10s for the first six years, The average consumer price index increased to a great extent of 2.83 percent, and it is seen that there is no such significant increase in the other two price indicators like as WPI and GDP. The average inflation rates on three indices have been worked out for the period from 1939 to 2017, and the inflation rate derived by WPI is 7.32 percent. On the other hand, the price of inflation calculated by CPI and GDP for the period from 1950 to 2017 is 7.01 and 6.35.

Between 1940 and 50, the standard deviation of WPI Inflation rate is 13.78 percent that is the highest percentage compared with other decades, and it is clear that the most top percent is due to high fluctuations in the price level. During the decade from 1950-60 to 2000-2010, there is a moderate decline in the standard deviation of WPI inflation rate except the decade 1970-80, which is increased to 8.96 percent from 4.88 percent of the decade 1960-70. Two oil price shocks were primarily responsible for the change in inflation rate based on all the three indices during the decade of 1970. During the last seven years, from 2010 to 2017, the standard deviation of WPI inflation rate raised to 4.43 percent from 1.63 percent of the decade 2000-10. During the overall period of 78 years starting from 1939 to 2016, the standard deviation of GDP is low compared with the other two indicators, and it indicates that the fluctuation in the GDP is not too high. If a comparison is made of the inflation rate based on all the three indices, then the GDP deflator inflation is found lowest. This is perhaps because of the full coverage of GDP deflator, having included into it the services, whose values tend to be relatively stable.

During the decade from 1950-60 to 2000-2010, there is a modest decline in the standard deviation of WPI inflation rate except the decade 1970-80, which is increased to 8.96 percent from 4.88 percent of the decade 1960-70. During the last seven years, from 2010 to 2017, the standard deviation of WPI inflation rate raised to 4.43 percent from 1.63 percent of the decade 2000-10. In the case of CPI-IW and GDP, The highest fluctuation recorded for the decade is the 1970s for which the standard deviation worked out are to be 9.48 and 6.82. This fluctuation in inflation rate in all the three indicators is mainly because of the two price hike in the oil market during the decade of the 1970s. During the decade of 1970-80, the standard deviation worked out is highest, which indicates the most top fluctuation in the average inflation rate of CPI. During the decade of 1990-00 and 2010-17, there is a bit of an increase in standard deviation. On the other hand, during the decade of 1980-90 and 2000-10, there is a bit of decline in the standard deviation.

Table 7 Correlation Between Alternative Indicators

Period	WPI & CPI-IW	CPI-IW& GDP d	GDPd & WPI
1950-60	0.86 (.003)	0.96 (.000)	0.90 (.001)
1960-70	0.88 (.001)	0.85 (.002)	0.90(.000)
1970-80	0.93 (.000)	0.81(.004)	0.94(.000)

1980-90	0.53 (.011)	0.64 (.004)	0.86 (.002)
1990-00	0.63 (.05)	0.79 (.006)	0.88 (.001)
2000-10	0.01 (.985)	0.89 (.001)	0.09 (.798)
2010-17	0.65 (.111)	0.52 (.234)	0.74 (.068)
1939-2017	.81 (.000)	.82 (.000)	.89 (.000)

Source: Computed by Author

During the decade of 1950-60, It is found that the correlation between CPI-IW and GDPd is around 0.96 indicating a close relationship between the two. Further, it is found that the relationship between GDPd and WPI and between WPI and CPI-IW is around 0.90 and 0.86 implying a close relationship between them. By comparing the decades 1950-60 and 1960-70, It is found that the correlation between CPI-IW and GDPd is declined from 0.96 to 0.85 whereas the relationship between WPI and CPI-IW is increased from 0.86 to 0.88 and the relationship between GDPd and WPI is stable at 0.90.

While comparing the decades 1960-70 and 1970-80, it is found that the correlation between CPI-IW and GDP d is declined from 0.85 to 0.81 and on the other hand, the relationship between WPI and CPI-IW as well as GDP and WPI is found increased from 0.88 to 0.93 and 0.90 to 0.94. During the decade 1980-90, the correlation relationship between all the three price indicators found declined, and in the decade 1990-00, It is found increased. During the decade 2000-10, It is found that the correlation between CPI and GDP is 0.86 at 1 percent level of significance, whereas the correlation between WPI and CPI as well as GDP and WPI is insignificant. The period from 2010 to 2017, It is found that there exists no correlation relationship between three price indicators. It is found that the correlation between WPI and GDP is 0.74 at 5 percent level of significance, whereas the correlation between WPI and CPI as well as GDP and CPI is insignificant. During the overall period of 78 years starting from 1950 to 2017, It is seen that the correlation between WPI and GDP indicates a close relationship at 0.89. In the case of CPI-IW and GDP as well as WPI and CPI-IW indicate a close relationship at 0.82 and 0.81 respectively, which have a close relationship followed by WPI and GDP.

Historical Analysis of Inflation

In this paper, the overall period of 78 years starting from 1939 to 2017 has been divided into four stages based on important historical events that happened during the study period to analyze the Inflation trend in India in the past and derive useful implications.

The four stages are as follows:

Stage I: Set up of RBI and its nationalization (From 1935 to 1949)

Stage II: RBI nationalization and Nationalization of Commercial Banks (From 1949 to 1969)

Stage III: Nationalization of Commercial banks and implementation of LPG or New Economic Policy (From1969 to 1991)

Stage IV: implementation of LPG or New Economic Policy and till data (From 1991 to 2017)

Table 8 Comparison Of Average Inflation Along With Volatility Rates Based On Different Stages

Period	WPI	Maxi	Min	CPI-IW	Maxi	Min	GDP- D	Maxi	Min
Stage I	14.9(13.96)	38.30	-8.60	0	0	0	0	0	0
Stage II	3.98(6.72)	14.00	-12.50	4.37(5.69)	15.20	-6.60	4.05(5.63)	13.20	-9.70
Stage III	8.34(6.65)	25.20	-1.10	8.21(6.65)	26.80	-3.80	8.24(4.74)	17.80	-1.60
Stage IV	6.23(3.48)	13.70	-2.48	7.96(3.55)	16.41	3.40	6.51(2.88)	13.80	1.80
1939-2017	7.32*(7.79)	38.30	-12.50	7.01**(5.50)	26.80	-6.60	6.35**(4.61)	17.80	-9.70

Source: Computed by Author

Table 8 shows that during the first stage, WPI inflation is the highest in average terms at 14.9, and the maximum and minimum value of the increase in this stage is 38.30 and -8.60. During the second stage, inflation of three indices viz., WPI, CPI-IW and GDP deflator is around 4 % in annual average, and the maximum and minimum value of the increase in this stage is for WPI 14.00 and -12.50, for CPI-IW 15.20 and-6.60, and GDP deflator13.20 and -9.70. During the third stage, inflation of three indices viz., WPI, CPI-IW and GDP deflator is around 8 %, doubled of earlier stage due to two oil price shocks from OPEC countries and unrestricted deficit financing by the India government, in an annual average term and the maximum and minimum value of inflation in this stage is for WPI 25.20 and -1.10, for CPI-IW 26.80 and-3.80, and GDP deflator17.80 and -1.60.

During the fourth stage, the WPI was the lowest inflation rate around 6.23 in standard terms compared based on three indices and the minimum and maximum inflation rate in this stage is as 13.70 and -2.48 respectively. The second lowest inflation rate is GDP around 6.35, and the minimum and maximum inflation rate are as13.80 and 1.80, respectively. The CPI-IW is the highest inflation rate around 7.96 compared with the two other indices, and it's maximum, and the minimum inflation rate is as 16.41 and 3.40. In this, stage no negative inflation in CPI-IW and GDP except WPI. The overall comparison ranging from 1939 to 2017, it is found that the average increase derived from WPI is higher (7.32) to some extent than other two indices viz., CPI-IW, and GDP. In the case of CPI-IW and GDP, ranging from 1951 to 2017, It is found that CPI-IW is a little higher than GDP.

Continuous Banking and Economic reforms with a view to moderation in Inflation volatility have been observed with standard deviation quotient, and it is found that usual deviation quotient of WPI falls from 13.96 during the first stage, 6.72 during the second stage, 6.66 during the third stage and 3.48 during the fourth stage of the study. In the case of variation in inflation rate is concerned with WPI, during the study period, inflation seems to have varied too much, particularly in the first stage, the standard deviation accounted for 13.96. In the case of GDP and WPI, usual deviation quotient falls. However, there is a slight rise CPI-IW in the third stage 6.65 when compared with the second stage 5.69 and fourth stage 3.55. On the other hand, during the period from 1951 to 2017, the GDP is seen to be less volatile than the other two indices viz WPI and CPI-IW based on Inflation measures.

During the study period of 82 years from 1935 to 2017, India had experienced both good and bad alternatively that was evident from the record of inflation and the analysis of the same presented in this chapter. Due to World War II and the way of financing it, the first phase (1939- 1949) attains the highest inflation of 15% in average terms. The second phase (1949-1969) witnessed considerable moderation in average inflation to 4% mainly on account of the absence of any adverse international development. During the third phase (1969-1991), the inflation trend of the previous step is reversed, and the average inflation reached up to 8.3%. The main reasons behind the upturn in inflation trend are two oil price hikes as also the continuous recourse to deficit financing. During the fourth phase (1991-2017) the good time returns once again, and the average inflation comes down to 6.23%, on account of the proper assessment and control of the inflationary situation and timely steps from the RBI and the government.

Table 9 Correlation Between Alternative Indicators

Period	WPI & CPI-IW	CPI-IW& GDP d	GDP d & WPI
Stage I	0	0	0
Stage II	0.86*(.000)	0.89*(.000)	0.92*(.000)
Stage III	0.87*(.000)	0.82*(.000)	0.90*(.000)
Stage IV	0.53*(.004)	0.70*(.000)	0.76*(.000)
(1951-2017)	0.81*(.000)	0.82*(.000)	0.89*(.000)

* Correlation is significant at the 0.01 level (2-tailed)
Source: Computed by Author

During the second stage, It is found that the correlation between WPI and GDP is around 0.92 indicating a close relationship between the two. Further, it is found that the association between GDP and CPI-IW and between WPI and CPI-IW is around 0.89 and 0.86, implying a close relationship between them. By comparing the second stage and third stage, It is found that the correlation between WPI and GDP as well as GDP and CPI-IW is declined from 0.92 to 0.90 and 0.89 to 0.82. The relationship between WPI and CPI-IW is increased from 0.86 to 0.87. In the case of comparison between the third stage and fourth stage, it is found that there is a high decline in the correlation in all the paired indices. WPI and CPI-IW are found to be the steepest decline when compared with the other two-paired indices in the correlation relationship.

Findings, Suggestions, and Conclusion

The analysis of the growth of inflation rate using compound growth rate, descriptive statistics and Correlation Coefficient revealed that as

- The inflation rate was below 6% for 38 years and above 6% for 40 years out of 78 years beginning from 1939-40 to 2016-2017. Suppose, it is assumed that India's bearable rate of Inflation is equal to or below 6%, then, India appears to be worst in controlling inflation. On the other hand, the price of an increase above 6% to 15% was for 31years and above 15% for nine years. Therefore, many accept as real that India is to be an Inflation driven country.
- It indicates that Inflation, according to the wholesale price index, differs in a wide range as the lowest value of -12.5% for the year 1952-53 and the highest value of 38.3% for the year 1943-44. During the period of 78 years, inflation peaked and remained above 20% in the years of 1939-40, 1942-43,1943-44, 1948-49, 1973-74 and 1974-75 with the inflation rates of 25.6%,24.6%, 38.3%, 22.6% 20.02% and 25.1%, respectively. The highest value is due to the end of the world war-II. The years of high inflation is mainly because of the impact of War, low agricultural production due to drought and oil price hike up in foreign countries.
- The range of Inflation rate between 3% to 6% has the highest frequency of 23 years for the entire period, and 6% to 9% has the second highest incidence of 18 years. The inflation rate between 9% to 12%, 12% to 15% and above has a frequency of 23 years, and Below 3% has a frequency of 15 years.
- During the decade of the 1940s, the average inflation rate was the highest at 13.82% while during the decade of 1950s was the lowest at 1.74%. This sudden decline from 13.82% to 1.74% was due to prices of controlled commodities, introduction of national savings campaign, substantial tax reliefs, regulation of credit facilities, discourage speculative hoarding of stock of essential products, Prohibition of futures trading in commodities to check the speculation, imposition of export duties on some of the articles exported and reduction in government expense. Then, the common inflation movement clambered to 6.34% during the 1960s, and further, it rose up to 8.90% during 1970s. During the decades of the 1980s and 1990s, the average inflation movement was around 8%. During the decade of the 2000s and 2010s, the average inflation rate has declined to 5.39 % and 5.23%. The overall average inflation for the whole decades from 1939-40 to 2016-17 is at 7.32.
- During the overall period of 78 years starting from 1950 to 2017, It is seen that the correlation between WPI and GDP indicates a close relationship at 0.89. In the case of CPI-IW and GDP as well as WPI and CPI-IW indicate a close relationship at 0.82 and 0.81 respectively, which have a close relationship followed by WPI and GDP.
- During the first stage, WPI inflation is the highest in average terms at 14.9, and the maximum and minimum value of the increase in this stage is 38.30 and -8.60.
- During the second stage, inflation of three indices viz., WPI, CPI-IW and GDP deflator is around 4 % in annual average, and the maximum and minimum value of the increase in this stage is for WPI 14.00 and -12.50, for CPI-IW 15.20 and-6.60, and GDP deflator13.20 and -9.70.
- During the third stage, inflation of three indices viz., WPI, CPI-IW and GDP deflator is around 8 %, doubled of earlier stage due to two oil price shocks from OPEC countries and unrestricted deficit financing by the government of India, in an annual average term and the maximum and minimum value of inflation in this stage is for WPI 25.20 and -1.10, for CPI-IW 26.80 and-3.80, and GDP deflator17.80 and -1.60.
- During the fourth stage, the WPI was the lowest inflation rate around 6.23 in average terms compared based on three indices and the minimum, and maximum inflation rate in this stage is 13.70 and -2.48 respectively. The second lowest inflation rate is GDP around 6.35, and the minimum and maximum inflation rate are 13.80 and 1.80 respectively. The CPI-IW is the highest inflation rate around 7.96 compared with the two other indices, and its maximum and the minimum

inflation rate is 16.41 and 3.40. In this, stage no negative inflation in CPI-IW and GDP except WPI.

- The overall comparison ranging from 1939 to 2017, it is found that the average inflation derived from WPI is higher (7.32) to some extent than other two indices viz., CPI-IW, and GDP. In the case of CPI-IW and GDP, ranging from 1951 to 2017, It is found that CPI-IW is a little higher than GDP.
- Continuous Banking and Economic reforms with a view to moderation in Inflation was examined with standard deviation quotient and found that usual deviation quotient of WPI falls from 13.96 during the first stage, 6.72 during the second stage, 6.66 during the third stage and 3.48 during the fourth stage of the study.
- In the case of variation in inflation rate is concerned with WPI, during the study period, inflation seems to have varied too much, particularly in the first stage, the standard deviation accounted for 13.96. In the case of GDP and WPI, usual deviation quotient falls. However, there is a slight rise CPI-IW in the third stage 6.65 when compared with the second stage 5.69 and fourth stage 3.55. On the other hand, during the period from 1951 to 2017, the GDP is seen to be less volatile than the other two indices viz WPI and CPI-IW based on Inflation measures.
- During the second stage, It is found that the correlation between WPI and GDP is around 0.92 indicating a close relationship between the two. Further, it is found that the association between GDP and CPI-IW and between WPI and CPI-IW is around 0.89 and 0.86, respectively implying a close relationship between them.
- By comparing the second stage and third stage, It is found that the correlation between WPI and GDP as well as GDP and CPI-IW, there is a decline from 0.92 to 0.90 and 0.89 to 0.82 respectively. The relationship between WPI and CPI-IW is increased from 0.86 to 0.87.
- In the case of comparison between the third stage and fourth stage, it is found that there is a high decline in the correlation in all the paired indices. WPI and CPI-IW are found to be the steepest decline when compared with the other two-paired indices in the correlation relationship.

Though the monetary policy was tightened and other measures such as price controls and control on speculation and hoarding were employed, it was the fiscal indiscipline primarily reflected in a high and unsustainable level of economic and revenue deficits that appears to have caused the inflation to stay high. The recent past has, however, seen the success coming to the govt.'s way, with continuous monitoring of the situation and timely action by the RBI and adherence to fiscal rules by the govt. Have helped achieve reasonable control over inflation.

The recent past has, however, seen the success coming to the govt.'s way, with continuous monitoring of the situation and timely action by the RBI and adherence to fiscal rules by the govt. Have helped achieve reasonable control over inflation. Monetary policy should be relied upon mainly to keep in check the core inflation, which is free from supply-side shocks. Better regulation of money supply and liquidity for the attainment of the objectives of price stability requires the central bank to be free from fiscal dominance and less burdened with the task of achieving too many goals. This will help the central bank to establish its credibility as an inflation fighter and to move gradually towards inflation targeting, which nowadays appears to be a sensible policy option.

References

Abhiman Das and Manjusha Senapati. "GDP Deflator Vis-À-Vis Other Price Indices in India: An Exploratory Study." *The Journal of Income and Wealth*, vol. 29, no. 1, 2007, pp 3-20.

Arunachalam, P and KC Sankaranarayanan. "Liberalization and Inflation in India." *Yojana*, vol. 42, no. 11, 1998, pp. 7-9.

Awasthi, SK. "Is It Sellers' Inflation in India", *Yojana*, vol. 24, no. 13, 1980, pp. 26-27.

Batura, Neha. "Understanding Recent Trends in Inflation", *Economic and Political Weekly*, vol. 43, no. 24, 2008, pp. 108-111.

Bhinda, PC and Choudhary, CM. "Inflation Cause and Consequences." *Yojana*, vol. 28, no. 3, 1984, pp. 8-19.

Chakravarthy, Sukhamoy. "Our Fight Sagainst

Inflation", *Yojana*, vol. 51, 2007, pp. 47-48.

Choudhari, Saumitra. "Managing Inflation in Incredible India", *Yojana*, vol. 51, 2007, pp. 20-21.

Deaton, Angus. "Price Trends in India and Their Implications for Measuring Poverty", *Economic and Political Weekly*, vol. 43, no. 6, 2008, pp. 43-49.

Dhar, TN. "The Price Perspective", *Yojana*, vol. 16, no. 18, 1972, pp. 755-758.

Mahajan, Dhanashri Jayant. *"Inflation in India", 'Indian Economy after a Decade of Reforms."* Sanveda Prakashan, 2003.

Misra, SK and Puri,VK. "Price Trends and Inflationin 'Indian Economy', *Himalaya Publishing House*, Mumbai, 2006.

Monica Mahbubani and Vignesh Chandramouli. "An empirical study on the causes and impacts on inflation in India." *International Journal of Applied Research*, vol. 3, no. 4, 2017, pp. 42-46.

Naresh Kanwar. "Inflation and the Indian Economy." *IOSR Journal of Business and Management*, vol. 16, no. 1, 2014, pp. 28-34.

Rajkumar, A. Waingade. "A Disaggregated Analysis of Inflation in India." *ETHOS*, vol. 4, no. 2, 2011, pp. 51-61.

Rakesh Kumar. "A Study of Inflation Dynamics in India: A Cointegrated Autoregressive Approach." *IOSR Journal of Humanities and Social Science*, vol. 8, no. 1, 2013, pp. 65-72.

Rao, VK et al. "Inflation & India's Economic Crisis", *Vikas Publishing House Pvt. Ltd*, 1973.

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