

Determinants of Inflation in India: A Study of Compositional Shift in the Post Reform Period

Summary of Thesis

**Submitted to
Babasaheb Bhimrao Ambedkar University,
(A Central University)
Lucknow**

**BABASAHEB
BHIMRAO
AMBEDKAR
UNIVERSITY**



• LUCKNOW •
प्रज्ञा शील करुणा
ESTABLISHED 1996

**For the Award of Degree of
Doctor of Philosophy
In
Economics**

Supervisor
Dr. D K Yadav
Assistant Professor

Submitted by
Naveed Ahmad Lone

**Department of Economics
School for Ambedkar Studies
Babasaheb Bhimrao Ambedkar University
(A Central University)
Lucknow-226025 (U.P.), India.**

Enrolment No.: 841/12

Year 2016

Background

Inflation has long been a concept that perplexes not only policy makers, politicians but the layman too both in developed as well as in developing nations. Perhaps this is the one of the most serious macroeconomic problems confronting the world economy today. It is the inflation that affects the common man (majority of the population) on a daily basis and therein lies its power. It is generally agreed that inflation is socially unjust. As is well known, it brings in its trail serious and far-reaching consequences of economic, social and political nature. Its immediate effect is to shift real income against the vast majority of the population. Inflation makes it more impossible for people of moderate means to provide for their old age and by destroying the middle class it creates a dangerous gap between the completely property-less and the wealthy. (F.A Hayek 1972). Inflation also affects the general economic behaviour and the patterns of resource allocation. By distorting price relation and underlying general confidence, prolonged inflation tends to direct investments away from strictly productive sector and thus slackens growth. Furthermore, it encourages the speculation among the various economic units and discourages the private saving. Thus, any continuous rise in prices is dangerous because once we begin to rely on its stimulating effects; we shall be committed to a course that will leave us no choice but that between more inflation, on one hand, and paying for our mistakes by a recession or depression, on the other hand. Although a small amount of inflation can be viewed as having a benefit on the economy, since it gives room for the central bankers to stimulate the economy and for the business men to increase the wheels of commerce (Groshen and Schweitzer, 1997). Because many prices are sticky downwards and tend to creep upwards, the effort to attain a zero inflation rate (a constant price level) pushes other sectors with falling prices, profits and employment. Efforts to attain complete price stability can also lead to deflation since to set off positive inflation at some periods, negative inflation at some other periods are required. This is generally viewed negative by Keynesian because of downward adjustments in wages and output, and the difficulties faced in repaying nominal debt.

When inflation is more variable and less predictable the costs are very high particularly in the form of shoe leather costs, menu costs, relative price distortions, tax distortions, and so on¹. When inflation is low, there is a consensus that it should be kept low, so that the inflation is steady and predictable. When inflation is moderate or high, however, there is disagreement about the importance of reducing it; indeed, the cost of slightly greater inflation may appear small. As a result, inflation is variable and difficult to predict. Greater inflation variability increases uncertainty, lowers welfare, and increases the reluctance to undertake the projects. High inflation might be viewed by firms and individuals as a result of poor government performance. Inflation can also be viewed as a 'tax' since it reduces the purchasing power of the cash balances held by the private sector.

As it is clear that India is facing a high rate of inflation especially in the last few years and historically, from 1969 until 2012, India's inflation rate averaged 7.75 Percent. In the 2010-11 the average inflation rate was 9.55 percent as against the 3.8 percent in 2009-10, and again in 2011-12 it reached up to 8.79 percent. In the post-reform period the inflation has shown dramatic changes as in the early reform period it was very high, in the mid-reform period it was moderate, and again from last few years it has shown an increasing trend. Different policies or policy instruments were introduced by the government but all in vain. It does not only affect the sectoral allocation and distribution of the income but also accentuates the poverty (World Bank 1990). Inflation is desirable if it is moderate and undesirable when it crosses certain limits (threshold level), then it leads to mainly income inequality, poverty, diversion of sectoral investment, etc. In the post-reform period, the most important concern is not only that it has crossed the acceptable level but also became uncertain and uncontrollable. And, the situation has gone worse, because the mainstream theory of inflation, particularly from past few years, has failed to explain the inflationary behaviour. As monetarists postulate that long term inflation is always associated with money growth and that control of it is necessary and sufficient to control inflation (Friedman 1968). Monetary policy guided by this logic and a record of 13-times hike in repo rate in a single fiscal did not contain inflation. It means that the high liquidity is not the problem that caused the inflation. Then there must arise the question that, what accounts for the failure of inflation to respond to monetary tightening? The other

¹For detailed empirical validation of the statement see Okun, 1971; Taylor, 1981

question which the study is going to tackle is that, is RBI lacking the real determinants which it should have to target? What is the alternate policy measure to tackle this problem? And the most important question is, is there any compositional shift in inflation determining factors? If there is any compositional shift in inflation determining factors, corresponding to those is there any policy change? Are all factors affecting in the same manner as they were in the earlier period?

Inflation is defined as the sustained increase in price level, eroding the purchasing power of income, increase the cost of living and lowering the real value of savings. And when the process of price rise transforms into acceleration, we need to worry as it imposes many socio- economic costs. It is also the cause of concern for public policy because of the associated costs, especially when a large part of the population has no hedge against inflation. The fundamental reason to pursue long-run price stability is that inflation is economically and socially costly. There is a wide recognition that price stability directly raises the economic well-being by increasing the efficiency of the monetary system and by reducing the uncertainty about the future. There are also macroeconomic benefits of the price stability. Cross-country evidence shows that the countries with lower rates of inflation tend to have higher long-term economic growth rates (Taylor, 1997).

It has been recognised that inflation is a possible outcome of rapid economic development. The factors underlying inflationary process are likely to be specific to the stage of development of an economy. This is because the determinants of the prices are likely to be closely related to this aspect. According to this view, inflation seems to come out of structural impediments. Therefore, what would be the inflation threshold level for the economy to keep the pace of development for long? Some of the studies reveal that the predominance of the cost push factors with a substantial part of cost push originating in international price movements, others hold the view that it is the excess demand pressures on the one hand and the less supply on the other side which fuel the inflation. On the other hand, if the supply of the food items is the factor responsible then the related point of concern is that the record food production, as in 2010-11 did not bring down the agricultural prices. If the problem of supply has been solved, but it doesn't make the change in inflation status in the economy then there may be other factors rather than the ultimate demand and supply that need to be

analysed, these may be administered prices which play a vital role, or it may be the financial inclusion which again leads to the monetarist logic of more money chasing fewer goods and inflation prevails. Is it not the compositional shift of the consumption of food commodities due to an increase of purchasing power of the low-income groups with the implementation of employment and income generating programmes? Or it may not be due to the increasing contribution of the service sector in the GDP that leads to increase in the urban incomes? Or are all the determinants of the inflation affecting the same way as they were affecting earlier, hence is also the main cause of concern. Another point of concern regarding inflation is the role of administered prices which have been considered responsible not only for the current surge of inflation but always whenever India faced especially double-digit inflation since 1956-57. But this research problem has not become the focal point of the researchers and the policy makers yet; there is a need for further research in this context.

Need for the study

The main purpose of this study is to examine the changing nature of major determinants of inflation in India. It also seems that if the major factors contributing the inflation are somehow same but, there is a shift in the compositional pattern of those determinants, and so there is need to understand this compositional shift. Based on this, it will be possible to know whether the inflation is monetary or real sector issue. This will help in determining (adopting) the best policy package that government can adapt, so that the targeting, controlling and achieving the price stability becomes easier. Inflation is considered to be a major economic problem in developing economies such as India. Thus, fighting against inflation and maintaining stable prices have become the main objective of the monetary authority. In the post-reform period, the inflation rate has played the hide and seek game scaled from a very low to a high level and crossed the unexpectedly acceptable levels and finally became out of control, especially in the last few years. Therefore, there is a need to take appropriate steps to maintain it within limits. Any prescription without a careful investigation of its causes might not be appropriate. A plentiful policy instruments have been used by monetary authorities to tackle this issue, but all in vain and academicians and researchers have done a lot of studies to provide a solution, but the above-cited studies either have the variable bias or have not selected the proper time

period to analyse the inflation process very well. The studies above cited seem to indicate that there is a need to develop a model to explain inflation in India, which could provide the solution to this long living problem. So there is the need to study the changing nature of determinants of inflation and also their compositional shift in determining the inflation in India. With this, the study is going to analyse the inflation process in the whole post-reform period, and most ravishing part is that this kind of study is the first initiative done till date. So against the backdrop, the study will be conducted with the following objectives;

1.3 Objectives of the Study

- To examine the changing nature of major factors responsible for inflation in the post-reform period.
- To examine the pattern of a compositional shift in inflation determining factors.
- To study the causes of the ineffectiveness of monetary policy in controlling recent double-digit inflation.

Hypotheses of the Study

The following hypotheses have been formulated as the basis for the study.

- There is a significant change in the nature of inflation determining factors in the post-reform period.
- There is a significant shift in the compositional pattern of inflation determining factors.
- There is policy ineffectiveness in terms of combating inflation, due to non-inclusion of changing nature and a compositional shift in inflation determining factors.

Methodology

The whole study is based on the secondary data and the time period of the study is from 1991 to 2013. In the study, we have used various statistical and econometric techniques to estimate the results. However, the detailed methodological pedagogy has been explained in the respective chapters. However, some general

overview is important here. As the study is based on secondary time series data we have to make use of Augmented Dickey-Fuller (ADF) test (1979) for checking the non-stationarity of the data. After that for checking the causality and the other relational aspects we have used the Autoregressive Distributive Lag models and Toda and Yama (1995) method of Granger causality also. Not only this but for checking the stability aspect we have made use of Change-Point Analyzer. We also have done some indexing in the form of input cost index², monetary condition index and monetary policy index³. The variables used in the study are inflation, food inflation, exchange rate, money supply (M3), oil prices, interest rates and the policy rates, input cost index, call money rates, etc.

Sources of Data: The whole study is based on secondary data. The main sources of data have been collected from various sources.

International Sources: World Bank Reports, IMF, etc.

National Sources; RBI bulletins, Ministry of Labour Bureau Reports, Ministry of Commerce and Industry, National Sample Survey Organisation, etc.

Other Secondary Sources; Books, Journals, Periodicals, available literature, the data source sites like www.indiastata.com, www.wicts.org, etc.

The study will simply tools like multiple regression models, autoregressive models, percentages ratio, bar grammes, and pie charts wherever required to analyse and interpret the data. All the analysis will be done by the statistical software Stata10 and Ms excel.

Major Findings

- There is a dramatic compositional shift in the components of food inflation. Factors having higher weightage are contributing less in the food inflation while those having lesser weightage in the food price index are contributing a lot. This dramatic shift must have policy implications, and that may be the

²For the detail of this refer to the chapter 3 of the thesis.

³For details refer to the chapter 6 of the thesis.

one major reason that the policy framing is unable to cope up with the surging of food inflation.

- In determining food inflation input cost index (ICI), the exchange rate (ER) is having significant causality while as the money supply is of having insignificant.
- The fuel commodities are serving as the gold hen for the government, as the government is earning huge amount of revenue from them.
- The deregulation of fuel prices has led to increase in instability of fuel prices and hence general price level. Given the scenario of fuel commodities sector, it seems illogical to go for both the complete deregulation and taking away the subsidies when more than 80% of the demand is fulfilled by imports.
- The fuel prices are more a fiscal policy issue than a monetary policy issue and the controlling inflation only through monetary policy is not a viable solution.
- In the case of money supply one of the evergreen determinants of inflation; it has been found that the determinants of the money supply by itself have gone through a dramatic shift. In the case of the proportion of time deposits have increased and hence a positive signal for the financial health of the economy, but what is pinching is the compositional shift in the determinants of 'H' where the dollar colonisation is going to throw away the policy from the hands of policy makers.
- Given the dramatic compositional shift in the proximate determinants of inflation, the monetary policy has been changed in due course to catch up the inflation. This monetary policy has trailed since 2006 when the new surge of inflation has occurred in the post-reform period. The major reason for this derailing seems the compositional shift in the determinants of inflation.

Policy Prescriptions

- RBI should develop such an index of price measurement which should overcome all the major limitations of the existing indices, by accommodating the quality and quantity changes of all important products, so that it reflects real changes in cost of living of households.

- As in the case of food price the share of protein rich components is increasing over the period of time, so there is need of reexamining the weightage of different items in the index of price measurement accordingly.
- As food inflation is mainly supply side problem, there is a need to make use technology to reduce the cost of production and increase the supply of necessary food items in which we are not self sufficient. Along with that inefficiency of supply chain system is another big problem in this direction, which need to be strengthen. In all these endeavours monetary policy have very limited role and role of Government through fiscal policy is very important.
- The deregulation of fuel prices has led to increase instability in the fuel prices and through that to the general prices. Having more than 80% of dependence on imports, deregulating the fuel prices is illogical. Hence it is recommended to roll back the present complete deregulation policy of fuel prices, which is based on Parikh committee report. For ensuring the financial health of oil companies Government need to review its tax policy of fuel products.
- There is also need to develop alternative sources of energy like wind and solar energy, so that in future we can reduce our dependence on petroleum products for our energy requirement.
- As in the post reform period, role of foreign exchange reserve is increasing in deciding the value of H , which is an external factor and could not be controlled by policy maker. In this context, only thing which could be done to strengthen the internal money supply management system, and for that purpose Government security market need to be developed, which is still in its infancy stage.
- There is also need to develop banking technology like the e-banking, plastic money, ATM, mobile banking etc. at the grass root level, particularly in rural areas to strengthen the control of RBI on money supply, as these factors are major determinants of money multiplier (m) and by which black money can also be controlled.
- Given the compositional shift in the determinants of inflation, there is a need to consider these shifts in designing of monetary policy to make it effective in controlling inflation.

Limitations of the Study

Our study comes up with some important findings, but much remains to be done. And also the fact is that along with the findings we have posed the questions that remained unanswered however very important, in order to understand the phenomenon thoroughly. Although these posed questions is in itself a great success of the study, as they are making way for new research. The major limitations of the study areas:

- In understanding the nature and pattern of determinants of inflation we were unable to take into account the important factors that are the structural factors. The fact that the structural factors are playing an important role in declining prices either in the form of transport or in the form of good storage facilities. For example, on the one side, some states have an abundance of food grains and other are unable get two-time meals, in the abundant states the prices are so low in that farmers, are not willing to sell their produce, and in other states, prices are so high that common man is unable to buy the same commodity. If there would have been well-developed infrastructure and transport facility, then the bias, as well as the price rise, would have been in control. However, we could not consider the same factor into our study because of non-availability of the data set.
- Another important factor, especially in the Indian context, is that had not been included in the study are non-economic factors e.g. caste, religion, culture etc. As we know in the Indian context, the division of land is based on the basis of caste that too is with unfair distribution. That lead to the phenomenon that those who want to work don't have land those who have land does not work and their lands remains barren. Hence causes a major loss of the production and productivity of the economy. This factor also has not been taken into account because of non-availability of data set.
- Hoarding and corruption (black economy) are also the important factors playing its role and are in debate in all walks of life, but the biggest challenge for taking them into account is again the problem of the data set.
- The ultimate determinants of money supply c , r , t are ultimately determined by behavioural factors and these behavioural factors haven't been taken into account because of non-availability relevant and accurate data set.
- Finally, this study done in case of India may not have universal applicability