TRENDS AND DETERMINANTS OF INFLATION IN INDIA DURING 1993-94 TO 2010-2011

Dr. S.S.Jeyaraj

Accounting and Finance Lecturer, GXUN Business School
[Staffordshire university programme]
Guangxi University for Nationalities, Nanning, China

ABSTRACT

The last decade has witnessed a great deal of theoretical and empirical research on the relationships between inflation and prices of Primary Article, Fuel and Power and Manufactured Products and other foods commodities in India. The present study analyses changes in the price of Primary Article, Fuel and Power and Manufactured Products and other foods commodities in India from 1994-95 to 2010-11 by using WPI with base year 1993-94. The secondary data were collected for this period. The study also analyses the change in prices and seeks to discover major drivers of inflation. It examines other inefficiencies associated with noncompetitive pricing, which matter for estimating the cost of inflation. This paper analyzes the restrictions necessary to ensure that the policy rule used by the central bank does not introduce real indeterminacy into the economy. A robust conclusion is that to ensure determinacy, the monetary authority should follow a backward-looking rule where the nominal interest rate responds aggressively to past inflation rates. It concludes that the inflation has been driven mostly by price increase of primary goods. Ensuring good harvest, RBI effective monetary policy to reduce demand at reasonable level and measures taken by government of India to increase the supply may reduce inflation.
Key words:- Inflation Perceptions; Inflation Expectations; Inflation, Central Bank behaviour, Consumer Price Index.

1. INTRODUCTION

Inflation is defined as the continuous and persistent in the general price level, that is, on average all price must increase. However there are certain individual product prices that influence the economy so much that they lead to an increase in other product prices and subsequently feed into other prices thereby raising inflation. Over the past few years, prices of an item are increasing at an alarming rate, not only locally but also internationally, and this increase in prices is termed "economically" as Inflation. In India persistence of inflation has become a major source of concern to policy makers and Reserve Bank of India. High price is a threat to Indian economy because it not only brings about macro economic instability but also decrease the welfare of the people especially the poor household for whom food have a major share of total expenditure. Prices of goods act as an important role in determining the inflationary situation of a country. In India, inflation is calculated according to the Wholesale Price Index (WPI) on a weekly basis. Provisional WPI data is announced every Friday with a two-week lag. Final data is announced after an eight-week lag. Weights of the commodities are derived on the basis of the volume of the commodity traded in the domestic market. While Consumer Price Indices (CPI): Consumer Price Index for Agricultural Labourers (CPI-AL), Consumer Price Index for Rural Labourers (CPI-RL), Consumer Price Index for Industrial Workers (CPI-IW), Consumer Price Index for Urban Non-Manual Employees (CPI-UNME) may also be used to measure inflation, but the WPI is the Reserve Bank of India's preferred tool of measurement. Inflation rates as per CPI estimates are usually higher than the WPI. CPIs are compiled on the basis of the general standards and guidelines set by the International Labour Organisation (ILO). [1] The problem of inflation in India has been a perennial one. On the basis of WPI with base year 1993-94 inflation in India on a point to point basis was low during 1995-96 to 2003-04 (expect 2000-01). Inflationary pressure slowly started to build up from 2004-05. In the year 2008-09 the prices increased by 8.4 per cent and after which fell steeply. However in 2010-11 the upward trend resurfaced and headline inflation almost touched the double digit. All the components of WPI have made significant contribution to aggregate inflation in India. Due to new economic policy and development in secondary sector the contribution made by the Manufactured Non Food Product (MNFP) was very low during 1994-95 to 2010-11. During this period the price of Primary Non Food Article (PNFA) and Manufactured Food Product (MFP) fluctuated highly and their prices increased by 5.6 per cent and 4.6 per cent respectively. Fuel and Power (F&P) group have made substantial contribution to aggregate inflation. Ongoing geopolitical tension and increasing demand caused the fuel price to touch record heights. Most worrying fact is the movement of Primary Food Article (PFA) prices. After a fluctuation and remaining low, prices of food began to accelerate in 2005-06 and have continued to do so since then. In terms of duration this is the longest one since 1994-95. Another important characteristic of recent food inflation is that the price increase has happened to wider range of food items. Food article prices are seen to change at a rate faster than change in the Gross Domestic Product (GDP). These prices rising at an

increasing rate is a major contributor to high prices in India and current public discontent.[2] PFA in the WPI comprises of cereals, pulses, fruits, vegetables, milk, eggs, meat and fish, condiments and spices, and other food articles. The contributions made by different food articles have a striking feature that is the role played by key sources of protein. The dominant protein sources in Indian diet are pulses followed by milk, egg, meat and fish. As the levels of affluence increase, the demand for proteins is bound to increase overall; the form in which they are consumed will, of course, differ based on geography and socio-culture factors.[3]

What has caused food inflation?

There are several factors which must be taken into account in order to explain what is happening to food prices in India. These factors can be categorized into demand-side and supply-side causes. In India, Economic growth and technology improvement should decrease the dependence on Agriculture monsoon. But poor investment in agriculture the dependence remains firm in India. Decline in rainfall is a main cause to get adversely affected the yields. India's growth is basically driven by mining, manufacture, construction and service sector. Agriculture records only low growth rate. Annual Growth in food grains (cereals & pulses) production in the country has declined. From 1994-95 to 2010-11 the growth rate was only 1.2 per cent. In the case of commercial crop like cotton and oil seeds, the production increased where as sugar and coffee registered very low growth rate. However production of fruits and vegetables showed a positive sign. It increased from 87,164 metric ton in 1991-92 to 2, 05,254 metric ton in 2009-10. With this supply shortage and falling output it is very difficult to meet the growing demand for food in India. This mismatch in supply and demand has led to an upward spiraling of prices in the above mentioned food items. On the other hand milk, egg, meat and fish production increased at impressive rate after 2000-01. But the prices of these items are also increased on account of increase in income levels; the consumption basket is getting diversified from carbohydrate dominated diet to include more proteins [4]. In India consumption of protein rich foods has increased in both rural and urban putting more pressure on demand, thereby deepening the rising price of these food items. Along with production, export is also a supply factor that determines the inflation. An increase in agriculture export will lead to diversion of food from domestic to export, therefore increasing the domestic price. The share of agriculture in total export in India has decreased due to regulation based on domestic demand. Share of agriculture in total export in 1996-97 was 20.33 per cent which decreased to 10.59 per cent in the year 2009-10. So less diversion of food has taken place and this trend should be maintained in order to keep the food inflation under control. Speculation and hoarding of agriculture commodities have increased to taking the advantage of rising prices which in turn has reduced the supply in the market placing more pressure on the prices of food. The volume of trade increased from Rs.16 lakh crores to Rs.36 lakh crores between 2005 and 2007 and the daily value of trade varies from Rs.13000 crores to Rs.15000 crores. This surge in volume also reflects the level of speculations transactions generated in these markets.[5] Traders and corporate house are befitted by this trade not the farmers. Because farmers find difficult in participating in these market. In July 2008 oil price reached the record peak of US $145 and affected the price of agriculture inputs. Farmers spend more for fertilizer (for which oil is a major input), crop drying, and transportation thereby raising production costs. At the processing, wholesale, and retail levels, the cost of transportation and operating packing houses, manufacturing plants and retail stores has increased. Some of these costs are passed on to consumers in the form of higher prices.[6] After examining the supply-side causes it is essential to analyses the demand-side elements embedded in the inflation in India. Among the demand side population is one of the important factors that determines the inflation. India's population in absolute terms has increased by 181 million during the decade 2001-2011. At present, a little more than one out of every six persons in the world is from India.[7] Increasing population is putting more pressure on food, feed supply and depleted stocks. After new economic reforms India is experiencing robust economic growth and thereby increasing the income of the people. Per-capita Net National Product at factor cost increased from Rs. 8,070 in 1994-95 to Rs. 19,175 in 2010-11. In India people spend larger portion of their income on food. With the rise in per-capita income people started to demand variety of food especially the protein rich. This high demand for food resulted in the increase of prices. As income increases there will be a change in the taste and preference of people. The decomposition of food inflation indicates that during the recent period the key drivers of food inflation are non-cereals. People are including more protein rich food in their diet. So prices of pulses, milk, egg, meat and fish are major contributors of food inflation in India and these are the main protein source in Indian diet. Production of meat and dairy products requires large amounts of grain in the form of livestock feed. In order to produce a single kilogram of beef, it may take as much as 7 kilograms of grain; hence as caloric intake shifts to more protein, more and more grain is demanded for the same amount of calories for human consumption.[8] Global food prices are increasing at high rate due to increasing demand for food from developing countries and for bio-fuels in developed countries. Changes in international prices are exerting a significant direct and indirect influence on domestic food prices through trade as well as through adjustment in domestic policies in order to keep some balance with global prices.[9] so increase in global food prices are also one of the reasons for high food inflation in India. One way to correct the mismatch of demand and supply is to maintain proper inventory. Except wheat, rice and sugar there is no arrangements in the country to carry large inventories of other food items. So the consumption to stock ratio is very low in India. On the other hand available stocks are not maintained properly. The data from Public Distribution System reveals that stocks held between 2002-03 and 2008-09 in the centre pool were very low. To make up this deficiency the Food Corporation of India (FCI) made special efforts

International Journal of Application or Innovation in Engineering & Management (IJAIEM)
Web Site: www.ijaiem.org Email: editor@ijaiem.org
Volume 3, Issue 11, November 2014   **ISSN 2319 - 4847**

to procure additional quantities in 2009 which expectedly resulted in a relative shortage of cereals in open markets, which in turn has pushed up prices.[10]

STATEMENT OF THE PROBLEM

The inflation in India has become a serious cause of concern and at the same time controlling it is a major challenge for policy makers and RBI. Prices fluctuated sharply during 1994-95 to 1998-99. Later from 1999-00 to 2004-05 the prices stayed low. However from 2006-07 onwards the prices started to increase and remains elevated. In terms of duration this is the longest since 1994-95 and wide range of products were involved than before. The prices of a variety of primary articles and products, namely, food grains, fruits and vegetables, egg, meat and fish, condiments and spices and tea and coffee, have been under pressure. Due to this, controlling inflation has also become very difficult. In India the persistence of inflation will bring social unrest because have major share in consumption basket of every Indians. Some people spend 80 per cent of their income to primary needs like food related. High prices will reduce the consumption resulting in malnutrition and hunger. In India poor and even the lower middle class people's income remain same so when price rises they find difficult to spend more on food, education and health which will likely to deteriorate the human capital. India was experiencing robust economic growth for the past few years and high prices have become an obstacle for it. The measures taken by the RBI to reduce the inflation has decreased the economic growth. Therefore, an attempt is made in the present paper to understand the major contributors of inflation. At the same time effort is taken to identify the supply and demand factors which cause inflation in India.

Review of Past Empirical Studies

Bindu [11] (1990) found that in the Indian economy inflation is more of the demand-pull type than the cost push type. As a result rise in prices contribute more to inflation rates than that of wages more influenced by the trade union movements and their bargaining power than by the employment rates. Moreover there is excess supply of labour due to the growing population resulting in the rising unemployment rates. As the three variables inflation, unemployment, wage rise influence of one variable on the other is very negligible and hence a trade-off between inflation and unemployment and between rate of change in money wage rate and rate of unemployment is not possible. Therefore the Philips curve is not irrelevant to the Indian contest. Barman, [12]*et.al* (1994) tested empirically the accuracy of forecasts of ARIMA model and five selected univariate non-linear time series models on data relating to wholesale price index and its subgroups. It has been found that some of the non-linear models generate forecast with satisfactory level of accuracy for lead periods up to 12 months. The study suggested that Self Exciting Threshold Auto regression (SETAR) model performs well for most of the series for lead periods above 3 months. Box Jenkins, Bilinear and state dependent model gave higher forecast accuracy for shorter lead periods up to 3-4 months. Bilinear model generates good forecasts even for higher lead periods. However, it is difficult to say that any single method performs uniformly better than others in all cases. Gaur [13] (1996), tried to highlight whether there is any relationship between price and wage pay. The study reflected the picture that wage/salary has been increasing on political /election considerations. Besides, strong unions are able to win their demand of increase in wage/salary. Pay commission do not consider the conditions of our country. They recommend pay revision in accordance with political guidance. This situation is unsound for stable economic development. Prices should be checked and controlled to achieve the target of "growth with stability". All the economic decisions should be based on rationality of economic laws. If political and emotional factors are included in national economic policy decisions the country as such is likely to suffer from such irrational decisions. Samanta and Mitra[14] (1998) in their study indicated that there has been some strong evidence of growing divergence between the wholesale and consumer prices (after adjusting for increasing level/ trend) in India since May 1995. They found that while data support the existence of a stable long-run relationship (co-integration) between the CPI Industrial Worker (CPIIW) and WPI during April 1991 to April 1995, the relationship is distorted thereafter. Even the short-run relationship is disturbed since May 1995. Khundarppam[15] (1999) in his study questions the argument that Government is indifferent to inflation since it improves the buoyancy of revenue more than it affects the elasticity of expenditure and narrows the fiscal gap employing a partial equilibrium framework for the period 1970-71 to 1997-98. The results indicate that inflation would enlarge the fiscal gap except in the unlikely case inflation enhancing growth. The best policy option when the fiscal gap overshoot the target is to keep inflation stable and activate discretionary fiscal actions. Malik and Chowdhury[16] (2001) used co-integration and error correction model to examine the relationship between inflation and GDP growth for four south Asian countries (Bangladesh, India, Pakistan and Sri lanka) and found two interesting results. First, inflation and economic growth are positively related. Second, the sensitivity of inflation to changes in growth rates is larger than that of growth to changes in inflation rates. These findings have important policy implication. Contrary to the policy advice of the international lending agencies, attempts to reduce inflation to very low level (or zero) are likely to adversely affect economic growth. However, attempts to achieve faster economic growth may over heat the economy to the extent that the inflation rate becomes unstable. Thus these economies are on knife edge. The challenge for them is to find a growth rate which is consistent with a stable inflation rate, rather than beat inflation first to take them to a path of faster economic growth. They need inflation for growth but too fast a growth rate may accelerate the inflation rate and take them downhill. Kirsten *et.al* [17] (2002) reports on a study that investigated the increase in food prices in South Africa. It is set against the scenario of an increasing inflation rate since September 2001. The June 2002 STATSSA (Statistics of South Africa) figures estimated the annual inflation rate (Consumer Price

Index excluding interest rates on mortgage bonds- CPIX) at 8.8 per cent with food inflation being the major contributor with an annual increase of 14 per cent. The high unemployment and poverty rate in South Africa has already leaded to concerns about the negative impact of these increases on the cost of living for the poorest. In study they showed that the sharp depreciation of the exchange rate towards the end of 2001 had a major impact on the producer price of maize – one of the key agricultural commodities because of its role as a staple food and as an input in the production of white and red meat and other animal products. Otero and Ramirez[18] (2003) in their study estimated an inflation model for Colombia in terms of disequilibria in the monetary sector, the foreign sector, and the labour sector. The model was also used to study the potential effect on inflation of the creation of an independent central bank, granted through the constitutional mandate of 1991. They found that the domestic factors were a far more power full influence on inflation than are external factors. Further they found that the creation of an independent central bank did change some of the parameters of the model, as the disequilibria in goods and monetary markets were found to have a larger effect on inflation before Central Bank Independence was granted. Gokal and Hanif[19] (2004) reviewed several economic theories to ascertain consensus on the inflation-growth relation. They also tested whether a meaningful relationship held in Fiji's case and found that the correlation showed only a weak negative link, while causality was showing to run from economic growth to inflation being imported, the influence of domestic factors (being unit labour cost and to a lesser extent the output gap) is limited. The study suggested some guidance to the policymakers on the importance of maintain low inflation, in order to faster higher economic growth. For its parts the Reserve Bank of Fiji will need to maintain monetary policy consistent with low inflation and inflation expectation. Srinivasa, *et.al* [20] (2005) estimated augmented Philips curve to examine the effects of supply shocks on inflation in India. Their results suggest that supply shocks only have a transitory effect on both headline and core measure of inflation. They argue that the crucial determinant of inflation is not supply shocks per se but how monetary policy responds to these shocks. They did not deny that supply failure may almost inevitable give rise to a temporary bout of inflation. The statistical evidence that they presented is consistent with the view that in the absence of monetary accommodation, the business cycle affects of negative supply shocks are fairly benign. Hence they concluded that inflation is a phenomenon of policy. Hodge [21] (2006) examined the relationship between inflation and growth in South Africa over both the medium to long term and the short run. The study found that there is a significant negative relationship between inflation and growth over the medium to long term. The other main finding were; over a five-year period, a one per cent point increase in a average annual inflation drags down the average annual growth rate in South Africa about a quarter of a percentage point. In the short-run there is limited scope to promote higher growth at the cost of higher inflation. Thus, for growth to be pulled substantially above its present low trend, inflation targeting in South Arica would have to be abandoned. However, this would be counterproductive over the longer term, once the negative relationship between inflation and growth manifests itself. Wegmark [22] (2007) in his study, the problem of monetary policy delegation is formulated as a two stage non-co-operative game between the government and the central bank. The solution to this policy game determines the optimal combination of central bank conservation and independence. The results show that the optimal institutional design always requires some degrees of central bank independence and that there is substitutability between central bank independence and conservatism. The result also shows that partial central bank independence can be optimal and that there are circumstances under which it is optimal for the Government to appoint a liberal central banker Kar and Sinha [23] (2007) estimated the determinants of Indian WPI inflation during 1971-2004. Current growth in money supply, income agricultural output and imports were the most important determinants of inflation. However, money supply alone was the most important contributing variable during 1981-2004. GDP growth and sectoral output had countered the inflation rate quite substantially. Exports growth had a switching role across the two sample periods. Dessus, *et.al* [24] (2008) in their study used a sample of 73 developing countries to estimate the change in the cost of alleviating urban poverty brought about by the recent increase in food prices. This cost is approximated by the change in the poverty deficit, that is, the variation in financial resources required no eliminated poverty under perfect targeting. The results show that, for most countries, the cost represents less than 0.1 per cent of gross domestic product. However in the most severely affected, it may exceed 3 per cent. In all countries, the change in the poverty deficit is mostly due to the negative real income effect of those households that were poor before the price shock, while the cost attributable to new households falling into poverty is negligible. Thus, in countries where transfer mechanisms with effective targeting already exist, the most cost effective strategy would be to scale up such programs rather than designing tools to identify the new poor. Janvry and Sadoulet [25] (2009) in their study showed that large farmers (with farm size of one hectare and more) would have gained as a group, and that the average gain is large for those who gain, but that 59 per cent of them in fact lose. The main category of poor households negatively affected by the rise in prices is rural (representing 77 per cent of all losing poor households), both farmers and non-farmers. This is contrary to conventional wisdom that looks at the urban poor as the main category to be sheltered from rising prices through safety net measures, and expects most farmers to gain. These rural households account for 79% of the aggregate welfare loss among the poor. This result is highly significant from a policy standpoint. Rural households are the main categories at risk. Yet, they are difficult to reach through the same instruments as the urban. This indicates how important it is to respond to a food crisis by raising the productivity of land and labour in small holder farming and facilitating access to even tiny plots of land for landless for rural households to produce more of their own food needs. Tiwari and Aviral [26]

(2010) attempted to investigate the direction of casualty between food prices and money supply in the static and dynamic framework. They found that narrow measure of money supply (M1) Granger causes food inflation while broad measure of money supply (M3) does not in the static framework. This implies that money supply (M1) is not neutral in determining food prices in the long run in the Indian context. From the dynamic framework of analysis they found that any one innovation in the broad measure of money supply (M3) will have positive impact on the food inflation for next three years. The study concluded that money supply is not neutral in determining food prices in the long run in the Indian context. Patnaik, et.al [27] (2011) in their study argued that Consumer Price Index for Industrial workers (CPI-IW) should take centre stage among the existing measures of inflation in India as headline inflation rate for the following reasons. First, (CPI) reflects the consumption bundle of households, and is thus more relevant than any other measure of inflation. Second, the CPI-IW also reflects prices of food as accurately as the other measures. Third, CPI-IW includes the price of services, which are not included in any other measure of inflation. Fourth, the CPI has a large share of non-tradeables this allow monetary policy to play a bigger role in influencing domestic non-tradeables prices. Thus macroeconomic analysis and policy thinking in India needs to move away from a focus on the (WPI) to CPI. Mooorthy and Kolhar [28] (2011), in their study used analytical arguments from relevant macroeconomic literature and evidence from late 1960s US data to examine whether the 1970s stagflation was due to the Organisation of Petroleum Exporting Countries (OPEC) price hike. They developed a two persons (rich and poor), two commodity (food and non-food) model to examine the impact of rising food prices on GDP, on measures of inflation, and on welfare, in the model. The study revealed that there is sustained divergence in India, in recent years, between the CPI versus the GDP deflator measures of inflation. It also highlighted a possible similar divergence between GDP and overall welfare. They found that previously neglected evidence indicates that stagflation (simultaneously rising unemployment and inflation) preceded the OPEC price hike. Further, indicated that when food prices rise, the GDP deflator falls relative to the CPI.

Objectives of the study
This study is carried out to analyse and explain the price changes and factor causing food inflation in India.
1. To analyse the trends in inflation over the past years.
2. To identify the major drivers of headline inflation.
3. To examine the demand and supply side factors behind surging prices.

Scope of the Study
The present study covers a period of 16 years from 1993-1994 to 2010-2011 for analyses changes in the price of Primary Article, Fuel and Power and Manufactured Products and other foods commodities in India from 1994-95 to 2010-11 by using WPI with base year 1993-94. The secondary data were collected for this period. It examines the trend in headline inflation and attempts to identify the major drivers of inflation. The study also analyses the change in prices and seeks to discover major drivers of inflation.

Limitations of the study
The present study analysed the trend and major drivers of inflation especially the inflation in India. Taking the availability of the published data on macro aggregates the study is limited up to the latest period of 2010-11. Aggregate data were taken at national so the study is limited to the national level. As the study is entirely based on time series secondary data obtained from different published sources, authenticated source have been chosen without any personal bias. However the limitation interests to the secondary data are to be recognized.

2.METHODOLOGY

The study is both descriptive and analytical in nature. The study is based on secondary data collected from reports of the RBI and other sources like Report of Office of Economic Advisor, Ministry of Commercial Industries, Report of Office of Registrar General and Census Commissioner, Reserve Bank of India Bulletin, National Sample Survey Organisation Reports, Directorate of Economics and Statistics, Department of Agriculture and Co-operation, Report on National Horticulture and Report of Department of Animal Husbandry, Diary and Fisheries.

Statistical tool used
The data are analyzed through by using simple statistical tools like percentage; growth rate and compound average growth rate were used to analyze the data. Pictorial representation was used at appropriate places. Weighted contribution method was used to examine the main drivers of inflation. Year over Year growth rate was determined in respect of major groups. Each major group's growth rate was multiplied by its weights. It gave the percentage of each major group that contributes towards the percentage growth rate of all commodities.

International Journal of Application or Innovation in Engineering & Management (IJAIEM)
Web Site: www.ijaiem.org Email: editor@ijaiem.org
Volume 3, Issue 11, November 2014   **ISSN 2319 - 4847**

3. RESULTS AND DISCUSSION

This table deals with the revision of weights of WPI for all commodities, the major contributors of food inflation and the causes of food inflation in India.

TABLE- 1: Revised WPI with Weights (2004-05=100).

Major Groups/Groups	2004-05	1993-94
All Commodities	100.0	100.0
I Primary Article	20.1	22.0
A) Food Article	14.3	15.4
B) Non-Food Article	4.3	6.1
C) Minerals	1.5	0.5
II Fuel and Power	14.9	14.2
A) Coal	2.1	1.8
B) Minerals	9.4	7.0
C) Electricity	3.5	5.5
III Manufactured Products	65.0	63.8
A) Food Products	10.0	11.5
B) Beverages, Tobacco & Tobacco Products	1.8	1.3
C) Textiles	7.3	9.8
D) Wood and Wood Products	0.6	0.2
E) Paper and Paper Products	2.0	2.0
F) Leather and Leather Products	0.8	1.0
G) Rubber and plastic Products	3.0	2.4
H) Chemicals and Chemicals Products	12.0	11.0
I) Non-Metallic and Mineral Products	2.6	2.5
J) Basic Metals, Alloys and Metal Products	10.8	8.3
L) Machinery and Machine Tools	8.9	8.4
M) Transport Equipment and Parts	5.2	4.3

Source: Office of the Economic Adviser, Ministry of Commerce & Industry (http://eaindustry.nic.in/)

The Table 1 indicates the revision of Wholesale Price Index (WPI) from 1993-94 to 2004-05.The new series of WPI is based on the recommendation of the Working Group headed by Planning Commission member Abijit Sen. The table facilitates the comparison of weights of two base year. All commodities (AC) are divided under three groups namely Primary Article (PA), Fuel and Power (F&P) and Manufactured Products (MP). These major groups are again divided into Groups and Sub-Group. In the revised weights (2004-05=100) Primary article weights decreased from 22.0 per cent to 20.1per cent. The weight for manufactured and fuel and power increased by 1.2 per cent and 0.7 per cent respectively. The point to be noted is that the combined weight of food (primary food articles and manufactured food items) in the WPI has come down to 24 per cent and 26.9 per cent in the old base 1993-94. This appears to be inconsistent because food have major share in consumption basket of Indians.

TABLE- 2: WPI and its Growth Rate of All Commodities (Base Year-1993-94)

Sl. No	Year	All Commodities	Growth Rate
	(1)	(2)	(3)
1	1994-95	112.6	-
2	1995-96	121.6	8.0
3	1996-97	127.2	4.6
4	1997-98	132.8	4.4
5	1998-99	140.7	5.9
6	1999-00	145.3	3.3
7	2000-01	155.7	7.2
8	2001-02	161.3	3.6
9	2002-03	166.8	3.4
10	2003-04	175.9	5.5
11	2004-05	187.3	6.5
12	2005-06	195.6	4.4
13	2006-07	206.2	5.4
14	2007-08	215.7	4.6
15	2008-09	233.9	8.4
16	2009-10	242.9	3.8
17	2010-11*	267.1	10.0
18	CAGR	-	5.2

International Journal of Application or Innovation in Engineering & Management (IJAIEM)
Web Site: www.ijaiem.org Email: editor@ijaiem.org
Volume 3, Issue 11, November 2014   **ISSN 2319 - 4847**

Note: *2010-11 WPI was spliced to 1993-94 base year.   Source: Office of the Economic Adviser, Ministry of Commerce & Industry (http://eaindustry.nic.in/) Table 2 furnishes the WPI and annual year percentage growth rate of headline inflation in India. It points out the changes in headline inflation from the year the 1994-95 to 2010-11. Table supplies the information about the movement of prices of AC during the study period. In the year 1994-95 the WPI was 112.6 which increased to 267.1 in the year 2010-11. Calculated compound average growth rate (CAGR) of headline inflation was 5.2 per cent.   Figure 1 shows growth rate of WPI during the study period. Beginning of the study period inflation in India fluctuated at lower rate between 8 per cent and 3.3 per cent. From the year 2008-09 the inflation growth rate was 8.4 per cent which suddenly dipped to 3.8 per cent in the year 2009-10, but again headline inflation began to accelerate in the second half of 2009-10 and reached at the highest in the year 2010-11 with growth rate of 10 per cent. To conclude the WPI growth rate of AC showed a fluctuated trend.

TABLE-3: WPI and its Growth rate of All Commodities and Major Groups.

Sl. No	Year	PFA	GR	PNFA	GR	F&P	GR	MFP	GR	MNFP	GR	AC	GR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	1994-95	112.8	-	124.2	-	108.9	-	114.1	-	110.8	-	112.6	-
2	1995-96	122.2	8.3	135.4	9.0	114.5	5.1	117.8	3.2	122.8	10.8	121.6	8.0
3	1996-97	137.3	12.4	134.2	-0.9	126.4	10.4	124.9	6.0	125.2	2.0	127.2	4.6
4	1997-98	141.4	3.0	137.5	2.5	143.8	13.8	134.6	7.8	130.6	4.3	132.8	4.4
5	1998-99	150.4	12.7	151.8	10.4	148.5	3.3	149.7	11.2	138.5	6.0	140.7	5.9
6	1999-00	165.5	3.8	143.0	-5.8	162.0	9.1	151.3	1.1	143.6	3.7	145.3	3.3
7	2000-01	170.5	3.0	146.5	2.4	208.1	28.5	145.7	-3.7	147.7	2.9	155.7	7.2
8	2001-02	176.1	3.3	152.9	4.4	226.7	8.9	145.4	-0.2	150.6	2.0	161.3	3.6
9	2002-03	179.2	1.8	165.4	8.2	239.2	5.5	153.0	5.2	153.0	1.6	166.8	3.4
10	2003-04	181.5	1.3	186.3	12.6	254.5	6.4	166.7	9.0	158.7	3.7	175.9	5.5
11	2004-05	186.3	2.6	187.6	0.7	280.2	10.1	174.9	4.9	166.7	5.0	187.3	6.5
12	2005-06	195.3	4.8	179.1	-4.5	306.8	9.5	176.8	1.1	174.5	4.7	195.6	4.4
13	2006-07	210.5	7.8	188.2	5.1	323.9	5.6	182.5	3.2	183.4	5.1	206.2	5.4
14	2007-08	222.0	5.5	211.9	12.6	327.0	1.0	190.2	4.2	193.6	5.6	215.7	4.6
15	2008-09	239.9	8.1	235.8	11.3	351.4	7.5	209.3	10.0	206.8	6.8	233.9	8.4
16	2009-10	275.1	14,7	246.8	4.7	343.1	-2.4	244.3	16.7	208.6	0.9	242.9	3.8
17	2010-11*	334.6	21.6	311.2	26.1	415.5	21.1	246.8	1.0	219.4	5.2	267.1	10.0
18	CAGR	-	6.6	-	5.6	-	8.2	-	4.6	-	4.1	-	5.2

Note: PFA- Primary Food Article   PNFA- Primary Non-Food Article   F&P- Fuel and Power   MFP- Manufactured Food Products   MNFP- Manufactured Non- Food Products AC- All commodities   GR- Growth Rate*2010-11 WPI was spliced to 1993-94 base year Source: Office of the Economic Adviser, Ministry of Commerce & Industry As given in the table 3 AC includes PFA, PNFA, F&P, MFP and MNFP. The table explains the change in prices of these groups during the study period. WPI of each group is taken from 1994-95 to 2010-11 and its growth rate is calculated. From the Table-3 it is observed that the growth rate of PFA showed fluctuating trend up to the year 2003-04 and started to increase from 2004-05 and attained double digit growth rates during 2009-10 and 2010-11. In the year 1995-96 the growth rate was 8.3 per cent and 21.6 per cent in the year 2010-11 there by registering 13.3 per cent increase in the growth rate. The calculated CAGR is 6.6 per cent. The PNFA growth rate was varying in the study period. During the years 1996-97, 1999-00 and 2005-06 PNFA was cheap. In the year 2010-11 the growth rate was 26.1 per cent which is the highest in 16 years. The measured CAGR is 5.6 per cent. F& P attained the highest growth rate in the year 2000-01 with 28.5 per cent. The main reason for high growth rate was Y2K problem and growing U.S and world economies. The lowest growth rate was recorded in the year 2009-10 with -2.4 per cent due to

International Journal of Application or Innovation in Engineering & Management (IJAIEM)
Web Site: www.ijaiem.org Email: editor@ijaiem.org
Volume 3, Issue 11, November 2014   **ISSN 2319 - 4847**

economic slowdown. However in 2010-11 the growth rate was 21.1 per cent. There is chance for further increase in growth rate due to rise in oil price because of geopolitical tension in MENA (Middle East and North Africa). CAGR of F&P is 8.2 per cent. In the case of MFP 16.7 per cent was the highest growth rate in the year 2009-10 and lowest -3.7 per cent in the year 2000-01.PFA and F&P are the main inputs for MFP. So whenever prices of PFA and F&P rise it will increase the prices of MFP. In the year 1998-99 the growth rate of MFP was 11.2 per cent, in the same year PFA growth rate was 12.7 percent and in the year 2008-09 MFP growth rate was 10.0 and F&P was having 7.5 percent. During 2008-09 and 2009-10 MFP was above the PFA growth rate due to persistent of high food inflation and rise in oil prices. However in the year 2010-11 the growth rate decreased to 1.0 per cent. The calculated CAGR is 4.6 per cent. When compare to other major groups the variations in the prices MNFP was less. In the year 1995-96 growth rate was 10.8 per cent which gradually decreased to 1.6 per cent in the year 2002-03. From 2003-04 there was increase in the price, in the year 2008-09 it was 6.8 per cent. In the year 2009-10 the growth rate was 0.9 per cent which was lowest in seventeen years. The CAGR was 4.1 percent with CV 62.1. The new economic policy and development in the secondary sector are the major reasons for the low growth of MNFP. From the table it can be conclude that in the beginning of the study period prices of all the group was at high. But later from 1999-00 to 2004-05 the prices declined. Again from 2005-06 onwards prices started to increase. Out of five group F&P and PFA is having high CAGR so they are the major contributors to the headline inflation in India. The Figure 2 explains that among the major groups PNFA was highly fluctuating followed by F&P and MFP. There was no much variation in the case of MNFP. From 2003-04 onwards the growth rate of PFA was increasing at alarming rate. This shows the persistent of food inflation in India. In the year 2010-11 except MFP all others major groups prices increased which pulled the headline inflation to double digit.
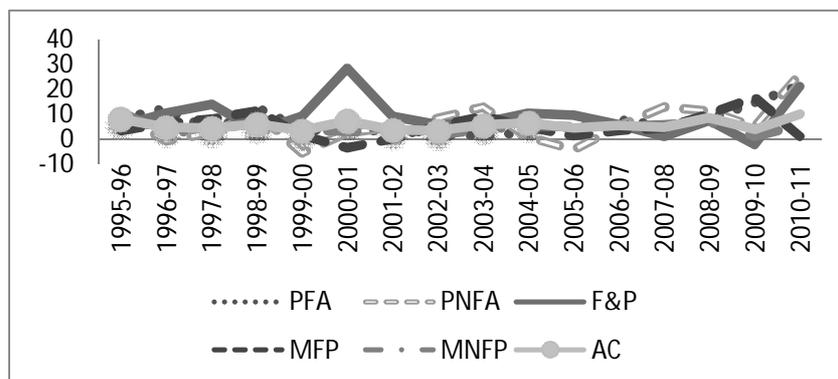

Diagram- 1: Percentage Growth Rate of All Commodities and Major Groups.

The diagram-1 describes the Percentage Growth Rate of All Commodities and Major Groups from 1995-96 to 2010-11. There are a number of important patterns in the graph.

TABLE- 4: Contributors of Inflation in India

Sl. No	Year	Primary Food Article (Wgts-15.4)	Primary Non-Food Article (Wgts-6.1)	Fuel and Power (Wgts-14.2)	Manufactured Food Article (Wgts-11.5)	Manufactured Non-Food Article (Wgts-52.2)	All Commodities (Wgts-100) (3+4+....+7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1995-96	1.3	0.6	0.7	0.4	5.6	8.5
2	1996-97	1.9	-0.1	1.5	0.7	1.0	5.1
3	1997-98	0.5	0.2	2.0	0.9	2.2	5.7
4	1998-99	2.0	0.6	0.5	1.3	3.2	7.6
5	1999-00	0.6	-0.4	1.3	0.1	1.9	3.6
6	2000-01	0.5	0.1	4.0	-0.4	1.5	5.7
7	2001-02	0.5	0.3	1.3	0.0	1.0	3.1
8	2002-03	0.3	0.5	0.8	0.6	0.8	3.0
9	2003-04	0.2	0.8	0.9	1.0	1.9	4.9
10	2004-05	0.4	0.0	1.4	0.6	2.6	5.6
11	2005-06	0.7	-0.3	1.3	0.1	2.4	4.5
12	2006-07	1.2	0.3	0.8	0.4	2.7	5.5
13	2007-08	0.8	0.8	0.1	0.5	2.9	5.2
14	2008-09	1.2	0.7	1.1	1.2	3.6	7.9
15	2009-10	2.3	0.3	-0.3	1.9	0.5	4.6
16	2010-11	3.3	1.6	3.0	0.1	2.7	10.8

Source: Researcher calculation Table 4 indicates major drivers of inflation in India. It provides the percentage of each major group that contributes towards the percentage growth rate of all commodities. With the help of the table it is easy to identify which group has contributed more to the head line inflation in India. In the year 2003-04, 0.2 per cent was the lowest share of PFA towards the total inflation growth. From here onwards the share increased and reached at 3.3 per cent in the year 2010-11. The share of PNFA to total inflation was not much significant. Only in the year 2010-11 share went above 1 per cent. F&P are the major contributors to the headline inflation. 4.0 per cent was the highest in the year 2000-01 and -0.3 per cent was lowest in the year 2009-10. After 1.3 per cent in 1998-99 contribution of MFA increased in recent years. In 2008-09 and 2009-10 the share was 1.2 per cent and 1.9 per cent respectively. From 1995-96 the share MNFP started to decrease. During 1996-97 to 2010-11 the share of MNFP hovered below 4 per cent. When comparing the weights and per cent share to total growth rate MNFP contributes very less towards total inflation. So MNFP is not a major contributor to inflation. The table reveals that the major drivers of inflation are PFA and F&P. Especially in the end of the study period the share of PFA has increased.
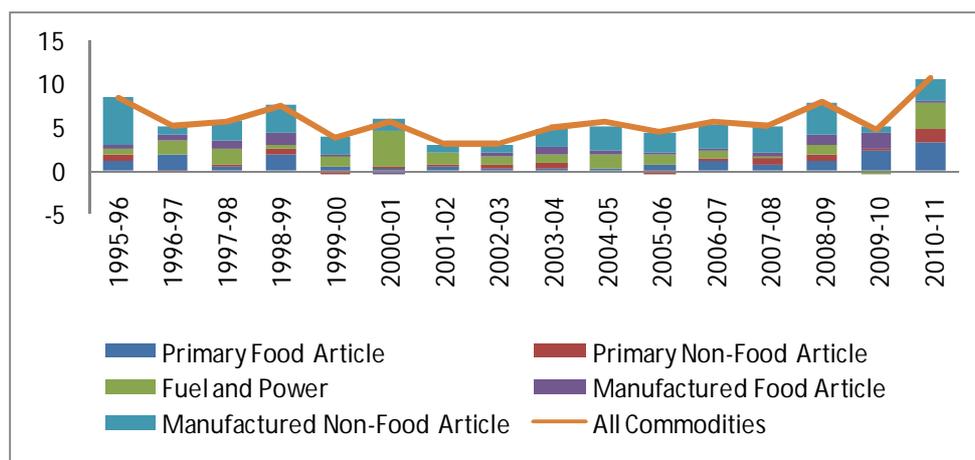

Diagram-2: Drivers of Inflation in India

The diagram-2 describes the major drivers of inflation from 1995-96 to 2010-11. There are a number of important patterns in the graph. The contribution of PFA to overall inflation is steadily increasing from 2004-05. Even though the crude oil prices were increasing gradually the contribution of F&P to inflation was variable. Over the years the share of PNFA was very low but it was striking to note that its contribution increased in the year 2010. The area of MNFP was somewhat steady after 1995-96. However during 2007-08 and 2008-09, as the overall inflation increased so did this component. In the case of MFP share of contribution to total inflation varies. In the year 2009-10 area of MFP was very high and in 2000-01 was below the zero line. So it is clear that food prices are the major drivers of high inflation in India.

4. MAJOR FINDINGS

The following are the major findings of the study It was found that in the revised weights (2004-05=100) Primary article weights decreased from 22.0 per cent to 20.1per cent. The present study found that in the revised WPI the weight for manufactured and fuel and power increased by 1.2 per cent and 0.7 per cent respectively. The combined weight of food (Primary Food Articles and Manufactured Food items) in the revised WPI has come down to 24 per cent from 26.9 per cent in the old base 1993-94. Beginning of the study period inflation in India fluctuated at lower rate between 8 per cent and 3.3 per cent. From the year 2008-09 the inflation growth rate was 8.4 per cent which suddenly dipped to 3.8 per cent in the year 2009-10, but again headline inflation began to accelerate in the second half of 2009-10 and reached at the highest in the year 2010-11 with growth rate of 10 per cent. It was observed from the analysis of WPI of all commodities that the inflation in India was highly variable during the study period. In the beginning of the study period prices of all the group was at high. But later from 1999-00 to 2004-05 the prices declined. Again from 2005-06 onwards prices started to increase. Among the major groups of WPI, Primary Non Food Article fluctuated highly followed by Fuel and Power and Manufactured Food Product. From 2003-04 onwards the growth rate of Primary Food Article was increasing at alarming rate. There was no much variation in the case of Manufactured Non Food Product. It was found that in the year 2010-11 except Manufactured Food Product all other major group prices increased which pulled the headline inflation to double digit. The contribution of Primary Food Article to overall inflation steadily increased from 2004-05. Even though the crude oil prices increased gradually the contribution of Fuel and Power to inflation was variable. Over the years the share of Primary Non Food Article was very low but it was striking to note that its contribution increased in the year 2010-11. The share Manufactured Non Food Product was somewhat steady after 1995-96. However during 2007-08 and 2008-09, as the overall inflation increased so did this

component. In the case of Manufactured Food Product share of contribution to total inflation varies. In the year 2009-10 share of Manufactured Food Product was very high and in 2000-01 was very low. So using weighted contribution method it was found that food prices are the major drivers of high inflation in India. From the trend analysis it was found that in the years 1998-99 and 2009-10 the food prices was at maximum. Especially during the year 2009-10 it registered highest food inflation. The persistent of food inflation can be seen from 2005-06 onwards. Before 2005-06 the prices of food fluctuated. In the beginning of the study period prices of all the group was at high. But later from 1999-00 to 2004-05 the prices declined. Again from 2005-06 onwards prices started to increase. Among the major groups of WPI, Primary Non Food Article fluctuated highly followed by Fuel and Power and Manufactured Food Product. From 2003-04 onwards the growth rate of Primary Food Article was increasing at alarming rate. There was no much variation in the case of Manufactured Non Food Product. It was found that in the year 2010-11 except Manufactured Food Product all other major group prices increased which pulled the headline inflation to double digit. The contribution of Primary Food Article to overall inflation steadily increased from 2004-05. Even though the crude oil prices increased gradually the contribution of Fuel and Power to inflation was variable. Over the years the share of Primary Non Food Article was very low but it was striking to note that its contribution increased in the year 2010-11. The share Manufactured Non Food Product was somewhat steady after 1995-96. However during 2007-08 and 2008-09, as the overall inflation increased so did this component. In the case of Manufactured Food Product share of contribution to total inflation varies. In the year 2009-10 share of Manufactured Food Product was very high and in 2000-01 was very low. So using weighted contribution method it was found that food prices are the major drivers of high inflation in India. It is revealed that during 2004-05 to 2007-08 the real Monthly Per Capita consumer Expenditure (base year 1987-88) was estimated to grow by 8.0 per cent for rural India and by 11.4 per cent for urban India, further it is seen that increase in income resulting in more consumption and expenditure.

5.VSUGGESTION

The study suggested that the Primary Food Article should be given more weight to get a better picture about food inflation because food items have major share in the Indian diet. Government should take effective measures to reduce the population focusing on small family norms. India has achieved robust economic growth after new economic policy which increased the demand for variety of food products. Measures should be taken to increase the supply to meet the demand. It is suggested that to meet the growing demand for food products government should go for second green revolution by using innovative thinking. To increase the agriculture productivity low cost inputs like bio-fertilizer, organic farming and good quality of seeds should be used. Wages of agriculture labourers are increasing due to shortage of supply. By using more machines, labour cost can be reduced. To use the machine effectively in agriculture collective farming should be encouraged. Regulated agriculture markets should be developed to ensure better price for produce of farmers and to avoid the middleman exploitation. Policy must be directed towards attracting more private investment in agriculture, bringing in new technology and raising yields. Due to increase in per- capita income demand for protein rich foods has increased. To meet the growing demand government should go for a new revolution leading to protein rich food items. One of the major causes of inflation is drought and during this time proper food management should be carried out that is maintaining buffer stock and timely release. Revolution should take place in support of the agriculture that is to improve the infrastructure facilities, warehousing, processing and distribution Minimum Support Price and procurement scheme is provided only to wheat and rice. Measures should be taken to eradicate the hoarding, profiteering and intermediaries to check the retail price rise. Government of India and RBI should develop a mechanism to detect early signal of inflation and can control it before getting generalised.

6.CONCLUSION

Inflation is a sustained increase in the general level of prices for goods and services. When inflation goes up, there is a decline in the purchasing power of money. Many dollars chasing too few goods, cost-push inflation develops because the higher cost of production factors decreases in aggregate supply in the economy. When there is unanticipated inflation, creditors lose, people on a fixed-income lose, uncertainty reduces spending and exporters aren't as competitive. Central banks set short-term nominal interest rates, which then form the basis for other interest rates charged by banks and financial institutions. Nominal interest rates may be held at artificially low levels after a major recession to stimulate economic activity through low real interest rates. A necessary condition for such stimulus measures is that inflation should not be a present or near-term threat. Conversely, during inflationary times, central banks may overestimate the inflation level and keep nominal interest rates too high. The resulting elevated level of real interest rates may have serious economic repercussions and real interest rates are the growth rate of purchasing power derived from an investment. Food inflation is the major problem faced by Indian economy. It is becoming difficult to control it because rise in price is felt on the entire food product. Rich people are successful in containing the high food prices forcing poor to reduce the consumption of food. The poor and the vulnerable sections of people spend almost

entire income on food and they are affected more by food inflation. In the present study it was found that the inflation has been driven mostly by price increase of primary goods. Ensuring good harvest, RBI effective monetary policy to reduce demand at reasonable level and measures taken by government of India to increase the supply may reduce inflation.

REFERENCES

[1] Srinivasan Sandhya, "Futures Trading in Agricultural Commodities: Is the Government ban on commodities trading logical?", Working Paper No. 193, Summer Research Internship Programme, Centre for Civil Society, May-July 2008, PP.10-11.

[2] The price of Protien, Inaugural Address by Subir Gokarm, Deputy Governor, Reserve Bank of India at Special Conference in honour of Dr.Kirit Parikh at IGIDR, Mumbai on October 26, 2010.

[3] The price of Protien, Inaugural Address by Subir Gokarm, Deputy Governor, Reserve Bank of India at Special Conference in honour of Dr.Kirit Parikh at IGIDR, Mumbai on October 26, 2010.

[4] Focus: Food Inflation in India, Economy mirror, Corporate Planning and Economic Studies Department. Issue No. 17, 31st December 2010, P.1.

[5] Linu Mathew Philip, "High Food Prices in India: Factors, Consequences and Mitigation", Study report, Centre for Trade and Development, 2008, PP.8-9.

[6] Capehart Tom and Richardson Joe, "Food Price Inflation: Causes and Impacts", CRS Report for Congress, Order Code RS22859, April 10, 2008, P.3.

[7] Provisional Population Totals Paper 1 of 2011 India Series 1, Size, Growth rate and Distribution of Population, Office of the Registrar General and Census commissioner, India, P.38.

[8] Food Prices and Inflation in Developing Asia: Is Poverty Reduction Coming to an End?, Economics and Research Department, special report, Asian Development Bank, April 2008, P. 6.

[9] Chand Ramesh, "Understanding the Nature and Causes of Food Inflation", Economic and Political Weekly, vol-14, No 9, Feb 27, 2010, P. 11.

[10] Kumar Rajiv, Vashisht Pankaj and Kalita Gunjit, "Food Inflation: Contingent and Structured Functions", Economic and Political Weekly, Vol- XLV, No-10, March 6, 2010, P.18.

[11] Bindu Hima.D, "Inflation and Unemployment in India During 1970-1984: The Relevance of Philips curve", Department of Economics, Stilla Maris College, Madras, December 1990, PP. 115-116.

[12] Barman R.B, Madhusoodanan T.P and Samanta G.P, "Dynamics of Inflation in India and their Modeling by Time Series Analysis", Reserve Bank of India occasional papers, Vol-15, No-2, June 1994, PP. 103-123.

[13] Gaur G.L, "Is Pay Rise Leading to Price Rise", Economic Affairs, Vol-41, Qr.2, June 1996, PP. 199-122.

[14] Samanta G.P and Mitra Sharmishtha, "Recent Divergence Between Wholesale and Consumer Prices in India – A Statistical Exploration", Reserve bank of India occasional papers, Vol-19, No-4, December 1998, PP. 329-343.

[15] Khundrappam Jeevan Kumar, "Why should Government be Indifferent to Inflation ", Reserve Bank of India occasional to Paper, Vol-20, No- 3, winter 1999, PP. 415-427.

[16] Malik Girijasankar and Chowdhury Anis, "Inflation and Economic Growth: Evidence from Four South Asian Countries", Asia-Pacific Development Journal, Vol-8, No-1, 2001, PP. 123-135.

[17] J.F. Kirsten, N. Vink, D. Scheepers, F. Meyer, M. Calcaterra and L. Jenkins, "The political economy of food price inflation in South Africa ", Working Paper 2002-02, Department of Agricultural Economics, University of Pretoria, South Africa, 2002, PP. 3-11.

[18] Otero Jesus and Manual Remirez "Inflation before and after Central Bank Independence: The case of Colombia", Journal of development economics, Vol-79, No-1, Feb-2006, PP. 168-180.

[19] Gokal Vikesh and Hanif Subrina, "Relationship between Inflation and Economic Growth", working paper No 2004/04, Reserve Bank of Fiji, 2004, PP. 1-44.

[20] Srinivasan Naveen, Mahambare Vidya and Ramachandran, "Modeling Inflation in India: A Critique of the Structuralist Approach", Journal of Quantitative Economics, Vol-4, No-2, July-2006, PP. 45-57.

[21] Hodge D, "Inflation and Growth in South Africa", Cambridge Journal of Economics, Vol-30, No-2, March -2006, PP. 163-178.

[22] Weymark Diana, "Inflation Government Transfers and Optimal Central Bank Independence", European Economic Review, Vol-51, No-2, Feb 2007, PP. 297-311.

[23] Kar Sujata and Sinha Surajit, "Determinants of Indian WPI Inflation", The Indian Economic journal, Vo-57, No-3, Oct –Dec 2009, PP. 72-88.

[24] Dessus Sebestien, Herrera Santiago and Hoyos Rafael de, "The Impact of Food Inflation on Urban Poverty and its Monetary Cost: Some Back-of-the Envelope Calculations", Policy research working paper No–WPS4666, The world bank, Development Economics vice presidency, July 2008, PP. 1-23.

[25] Janvry Alain De and Sadoulet Elisabeth, "The Impact of Rising Food Prices on Household Welfare in India", University of California at Berkeley, March 2009, PP. 1-15.

[26] Tiwari, and Aviral, "Impact of supply of money on food prices in India: A causality analysis", MPRA Paper No. 24679, Munich Personal RePEc Archive, 09. June 2010, PP. 1-16.

[27] Patnaik IIa, Shah Ajay and Veronese Giovanni, "How should Inflation Be Measured in India?", Economic and Political Weekly, Vol-XLVI, No-16, April 16, 2011, P.55-63.

[28] Vivek Moorthy and Shrikant Kolhar, "Rising food inflation and India's monetary policy", Indian Growth and Development Review, Vol. 4, Iss: 1, 2011, PP. 73 – 94.

Appreviations

MNFP	- Manufactured Non Food Product
WPI	- wholesale price index
CPI	- Consumer Price Indices
CPI-AL	- Consumer Price Index for Agricultural Labourers
PNFA	- Primary Non Food Article
MFP	- Manufactured Food Product
F&P	- Fuel and Power
PFA	- Primary Food Article
CPI-IW	- Consumer Price Index for Industrial Workers
CPI-UNME	- Consumer Price Index for Urban Non-Manual Employees
GDP	- Gross Domestic Product
ILO	- International Labour Organisation

AUTHOR

Dr. S. S Jeyaraj and I have received my M.com degree from Madurai Kamaraj University, Madurai in 1996. I have been awarded his Ph.D degree on the title of "Occupational stress among the teachers of the higher secondary schools in Madurai district, Tamil Nadu", by Madurai Kamaraj University, Madurai in the year 2011. Also I earned my M.Phil degree from Madurai Kamaraj University, Madurai, in 2001, thesis on the title of "Job satisfaction of workers. A study with reference to Sri Meenakshi Spinning Mills Ltd, Madurai". I have published my research articles both in national and international journals and also attended various workshops and seminars. Currently, I am working in Guangxi University for Nationalities, as a lecturer in Accounting and Finance at Nanning, China.