

15

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Food Inflation in India *Diagnosis and Remedies**

Backdrop

Food inflation in India has been stubbornly high, hovering around double digits, for the last couple of years, especially since the United Progressive Alliance (UPA) II regime (2009-10 to 2013-14). In a country which has the largest mass of poor and malnourished people in the world (World Bank, 2013), and where an average household still spends about 45 per cent of its expenditure on food [National Sample Survey Organisation (NSSO), 2011 data], high rates of food inflation simply speaks of bad macroeconomic management. It acts as an implicit tax on the poor, especially those in the informal sector whose wages are not indexed to inflation, and who don't have much bargaining power *vis-à-vis* their employers.

It is not only poor economics, but also bad politics. Invariably, high rates of food inflation have unsettled the governments of the day in office, as people feel their savings are fast eroded and the basic necessities for existence are getting out of their hands. Each society has its own tolerance limits, and it appears that in the Indian context, that tolerance limit is around the double digit number of 10 per cent when it becomes a major socio-political issue. Sometimes, even a specific food commodity, especially onions, makes headlines in daily newspapers when its prices go up significantly. Onion is a curious case as it does not have close substitutes and it is consumed by more than 90 per cent population. Given somewhat inflexible demand, even a small drop in its

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production or supplies can cause large price spikes. That's what happened in October 2013, and the then government had to pay a heavy price, politically. Food inflation was a major issue in the election campaign of 2013-14 and UPA II finally lost elections, partly on this account.

The new National Democratic Alliance (NDA) government, that came in power in May 2014, had number of meetings under the Chairmanship of the Prime Minister on how to tame this unacceptably high rates of food inflation. Needless to say, it is one of the top priority agendas for the new government, and in this context, it has also taken a slew of measures: Cabinet decision to offload 15 million tonnes of grains from Food Corporation of India's (FCI) godowns, on top of allocations under the public distribution system (PDS), advising states to de-list fruits and vegetables from the Agriculture Produce Marketing Committee (APMC) Act, advising states to put onions and potatoes under the Essential Commodities Act, and raiding 'hoarders' of these commodities to tame their prices. Only time will show whether these measures bring some tangible results. For the time being, in July-August 2014, food inflation remains high, and price spikes have shifted from onions and potatoes to tomatoes.¹

This paper, however, is not just about onions and potatoes, but of deeper structural problems that afflict India's food inflation. Without a proper understanding of the nature and causes of food inflation, policy makers may be shooting in the dark without any tangible results. Accordingly, in the second section, we describe the nature and structure of food inflation over a somewhat longer period, say from 1995-96 onwards. This is followed by a diagnostics analysis in the third section where we try to test various hypotheses regarding what is driving food inflation in India. It is based on this critical analysis that we put forward a policy agenda to tame food prices in the fourth section. It is hoped that this will help the policy makers to have a better understanding of the issues involved in food inflation, and by following the key policy suggestions they can bring it down below 5 per cent at an early date and sustain it at those level.

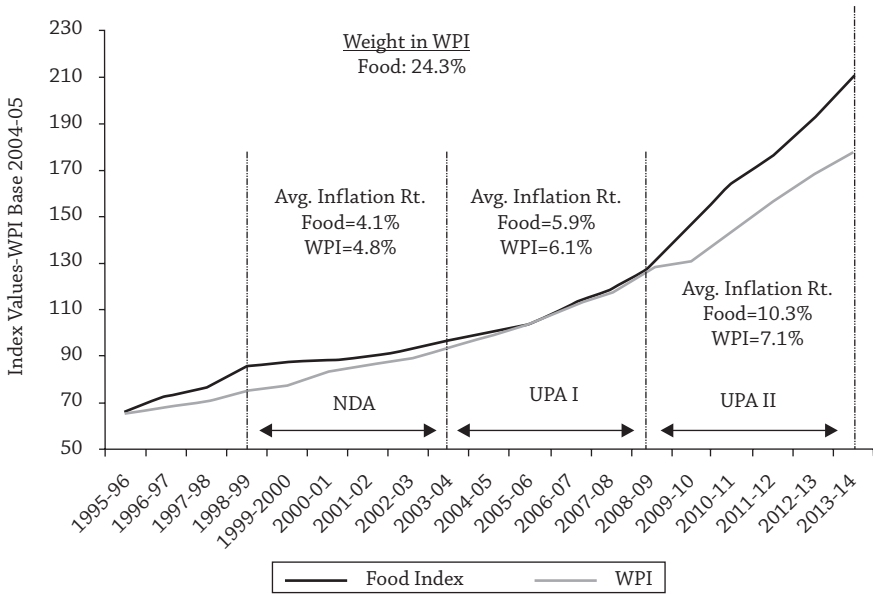
Nature and Structure of Food Inflation

It is interesting to observe in Figure 15.1 that during the NDA rule (1998-99 to 2003-04), the average rate of food inflation was 4.1 per cent, and it was a little below the overall inflation in the country

for all commodities. During the period of UPA I (2004-05 to 2008-09), the average food inflation rate accelerated to 5.9 per cent, but it still remained below the overall inflation in all commodities. However, during the UPA II period (2009-10 to 2013-14), things changed dramatically. Average food inflation galloped to 10.3 per cent, and it was also higher than the overall inflation for all commodities in the country. It is this period which smacks of gross mismanagement of macroeconomy, and as we will see in the following section, that this period also was pounded by price troubles coming from global factors. But before moving on to that, we should also note in Figures 15.1-15.3, the following features of Indian food inflation:

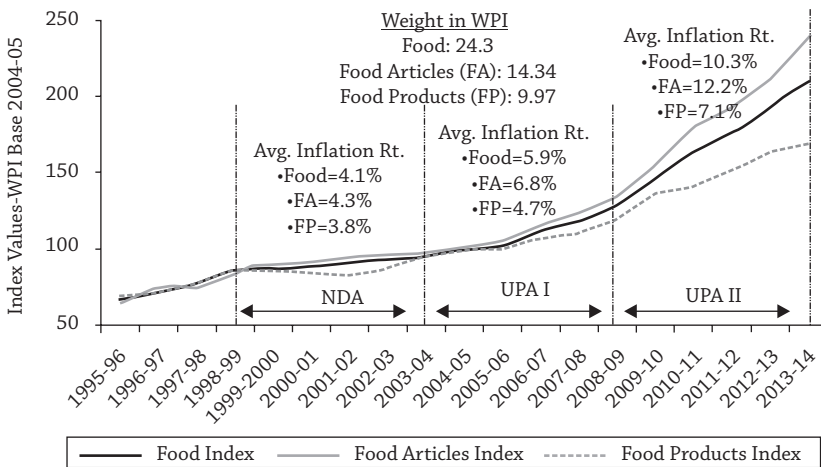
- Food inflation is composed of two segments: food articles and food products. Food articles are fresh and raw (largely unprocessed, e.g., cereals, pulses, oilseeds, fruits and vegetables, milk, eggs, meat, fish, etc.), and food products, which are processed (like edible oils, sugar, processed foods, etc.). The rate of inflation has been generally higher in food articles than in food products. This has important implications for developing food processing industry to contain food inflation.
- At least during the last three years, 2011-12 to 2013-14, more than 70 per cent of the food articles' inflation and more than 50 per cent of the total food inflation in the country has emanated from the high value segment of agriculture, namely fruits and vegetables, milk and milk products, and eggs, meat and fish. These are superior foods rich in vitamins and proteins, and their demand increases with rising incomes. The per capita consumption of cereals, on the other hand, decreases with rising incomes. Figure 15.3 only indicates that the demand pressure on high value agriculture (superior foods) is increasing faster than their supplies. As a result, the price indices of protein foods and fruits and vegetables have increased faster than cereals over this period (also see Gokarn, 2011). This has important implications for policy on diversification of agriculture as well as the need to build efficient value chains for perishables to save on large post-harvest losses.

Figure 15.1
Indian Inflation: Trends in WPI



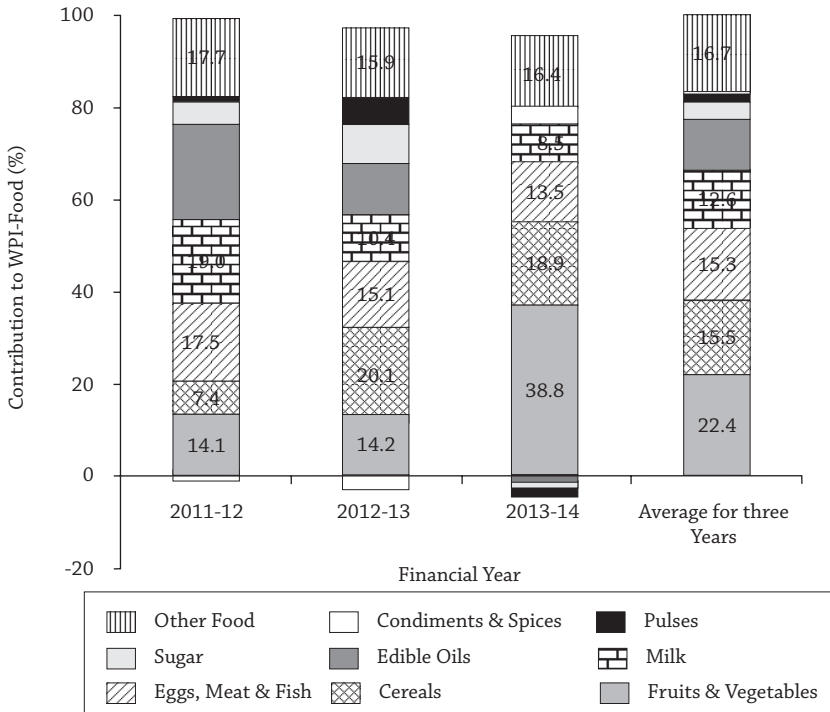
Source: Central Statistical Organisation (CSO).

Figure 15.2
Nature of Food Inflation (food articles and food products)



Source: CSO.

Figure 15.3
Contributors to Food Inflation



Source: CSO.

It may also be noted that lately the discussion on inflation, especially by RBI, has been talked about more in terms of consumer price index (CPI) rather than wholesale price index (WPI). This is in line with the international practice that most of the developed and emerging economies follow. In India, we had separate CPIs for agricultural labour and industrial workers. From 2011, however, India has also constructed a CPI-food for the country as a whole. The commodity weights in the CPI are based on consumption levels in the expenditure basket of an average household while the weights in WPI emanate from the production basket. The two differ quite significantly. For example, under the WPI series, food accounts for 24.3 per cent (food articles for 14.34% and food products 9.97%) in the production basket of the country for all commodities. In the CPI series, however, the weight of food is 49.7 per cent, way above that in WPI series. It is important to note this because

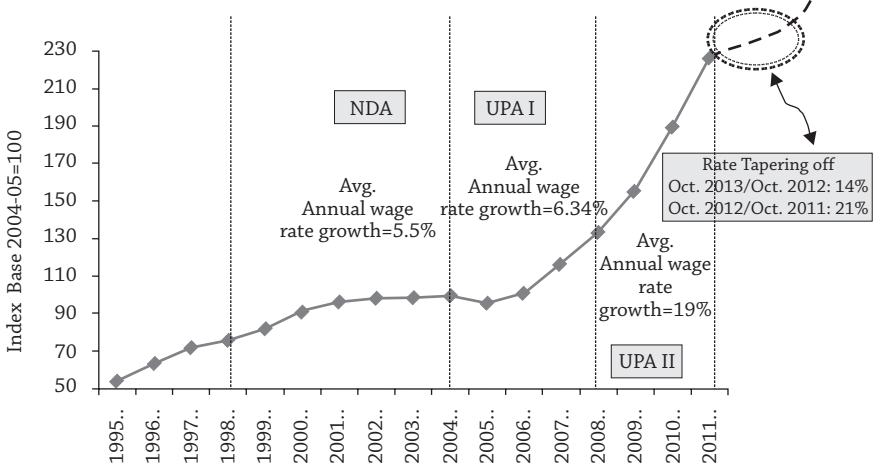
the rate of food inflation measured through CPI data is higher at 11.5 per cent than measured through WPI (8.7%), at least for the three-year average period of 2011-12 to 2013-14. However, since this new series of CPI-food starts from 2011-12 onwards, we will stick to WPI-food series for our longer term analysis of food inflation in India, but always keep in mind that food inflation for the consumer may be a little higher than being measured by WPI series. So the shoe may be pinching a little harder to the consumer than is revealed by inflation numbers based on WPI.

Drivers of Food Inflation: The Diagnosis

Undergraduate economic theory tells us that prices are an outcome of supply and demand. Supply curve is basically a marginal cost curve and demand is represented by marginal revenue curve. Switching from theoretical to empirical and real world, we may not have easily available data to construct the two curves accurately and see what is driving food inflation in India. But we have some proxies closer to that data sets that we can use to test the hypothesis of food inflation in India. The hypothesis that we put forward is that high food inflation is a result of three factors: (i) rising farm wages (Damodaran, 2012), which significantly affect the marginal cost curve of supplies of agricultural products as farm wages account for roughly 35-40 per cent of overall paid costs of farmers; (ii) rising global prices of food transmitting to Indian economy with a little lag. Global prices influence the cost of supplies when those commodities are imported, but also indicate marginal revenues (demand curve) when they are exported; (iii) loose fiscal and monetary policies which pump more money driving the demand in the system by raising nominal incomes of people much faster than the real economy (goods and services) would permit (Jadhav, 1990; 1994). This leads to typical dictum of 'too much money chasing too few goods', leading to high inflation in the country. In fact a paper by Rangarajan and Sheel (2013) has correlated the protracted fiscal stimulus with the present inflationary trends and has highlighted how such a trend has rendered monetary policy, as a tool for stimulating growth in the present pressing times, ineffective.

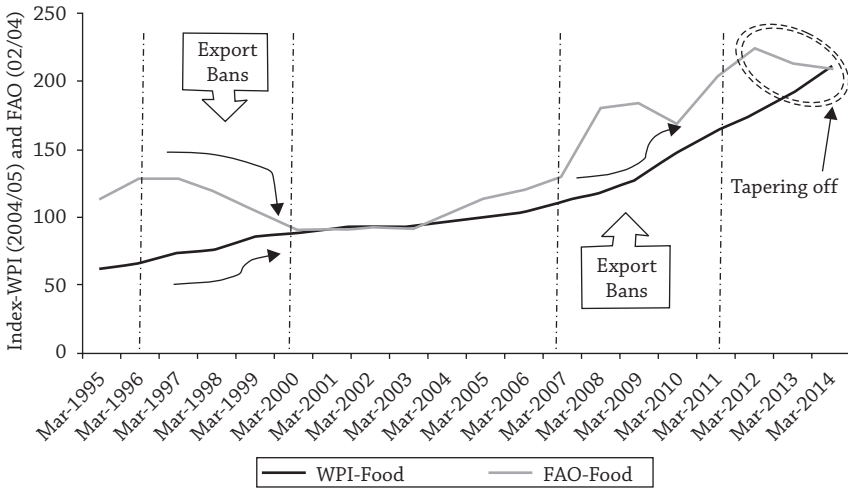
Figures 15.4-15.6 give the behaviour of these variables since 1995-96.

Figure 15.4
Rising Farm Wages

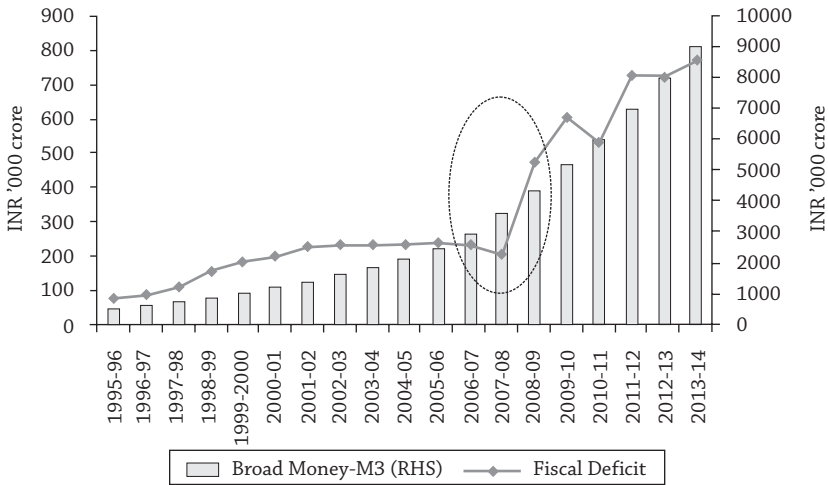


Source: Labour Bureau, Shimla and CACP.

Figure 15.5
Global Price Transmission to Indian Prices



Source: FAO and CSO.

Figure 15.6*Loose Fiscal and Monetary Policies*

Source: Planning Commission.

Each one of these needs some explanation. As may be observed, Figure 15.4 gives the nominal farm wage index for male workers from 1995-96 to 2013-14, with 2004-05 as 100. It is constructed from state level data on farm wages for five different operations, and then weighted by the number of workers in each state to get an all India picture.² The trend in nominal wage index shows that during the first 10 years, from 1995-96 to 2005-06, the growth in farm wage index was very gradual and meager, but started accelerating from 2006-07 onwards. On a five yearly basis, especially during the UPA II period (2009-10 to 2013-14), nominal farm wages grew by a phenomenal average rate of growth of 19 per cent. This is more than triple the rate registered in earlier periods of NDA and UPA I. This is almost unprecedented in Indian history. In another paper, we have shown that this is more the result of ‘pull’ factors of development, especially in construction and overall GDP, than the ‘push’ factors emanating from Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) (see Gulati *et al.*, 2013). It is also for the first time that Indian rural labor force shrank for the first time in absolute numbers during 2004-2011. This may have also put pressure on farm wages. Whatever the exact reasons behind these rising farm wages is, suffice it to say that it was raising the cost of production

in agriculture and prices of agri-products had to incorporate these rising labor costs as the productivity gains were not able to offset these rising costs.

The second factor influencing domestic food inflation is the global food price vector. The FAO food price index (with 2002-04=100) stood at 210 in 2013. Interestingly, Indian food price index (2004-05=100) also equaled 210 in 2013. This shows a remarkable convergence in global and domestic food prices. It may be noted from Figure 15.5, that transmission of global prices to Indian prices is not immediate, especially from 2007-08 onwards. This is because Indian trade policy had been quite restrictive. When global food prices erupted in 2007-08, India put a ban on exports of wheat and rice. This kept our food inflation relatively low in 2007-08, but very soon domestic prices had to be raised *via* minimum support prices (MSPs). Gradually over years, despite export controls, India could not insulate its domestic prices from what was happening in global markets. It only indicates that India is very well integrated with global markets, and sooner or later, its prices converge to global levels. It may also be noted that after 2007-08, global prices are on a different plain altogether, and so are now domestic prices. It has been a period of high global food inflation, which is reflected in India too, though with a little lag.

The third factor, namely loose fiscal and monetary policies, is reflected in Figure 15.6. It is interesting to observe that in 2008-09, fiscal deficit increased by 132 per cent in a single year over 2007-08. This was partly due to a synchronised 'global fiscal stimulus' that G-20 countries (including India) had decided to give to the global economy to avert any possibility of economic recession, which was much feared in 2008. This led to rising money supply (M3), which was growing at around 16-18 per cent per annum during the last five years or so. No wonder, with overall GDP decelerating after 2011, these loose fiscal and monetary policies were putting pressure on commodity prices, particularly food as much of fiscal deficit was financing consumption expenditures.

An econometric analysis to test the hypothesis that the three factors together explain the Indian food inflation gives following results: almost 99 per cent variation in domestic food prices over the period 1995-96 to 2013-14 can be explained by the three factors as eluded above. All the coefficients of explanatory variables have right signs and statistically significant. We have also carried out the Granger's causality test and those results are also very much in order.

$\text{Log Food (WPI) Index} = -0.176 + 0.27 \text{ Log FAO Food Index (T-1)} + 0.26 \text{ Log Farm Wage (nominal) Index T} + 0.21 \text{ Log Fiscal deficit (T-1)}$ <p style="text-align: center;">(3.9) (2.1)</p> <p style="text-align: center;">(3.2)</p>
$\text{Log Food (WPI) Index} = 0.046 + 0.34 \text{ Log Farm Wage (nominal) Index T} + 0.16 \text{ Log M3 (T-1)} + 0.13 \text{ Log FAO Food Index (T-1)}$ <p style="text-align: center;">(5.8) (6)</p> <p style="text-align: center;">(3.7)</p>

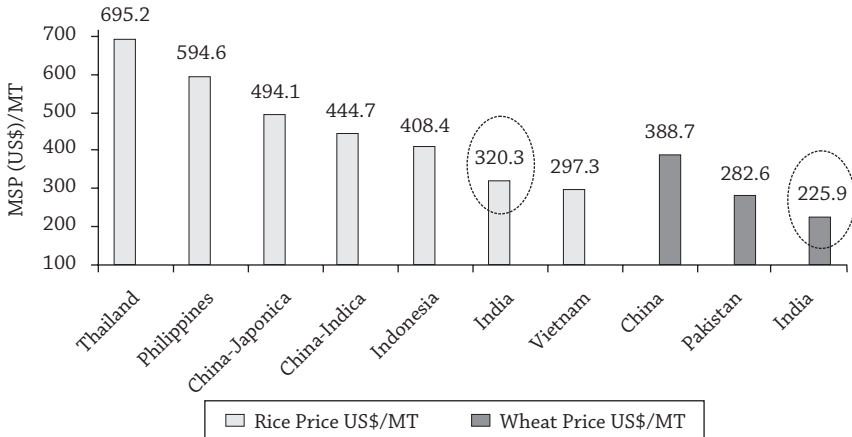
The regression coefficients are elasticity values. The values in the parenthesis are the respective t-values.

In nutshell, our econometric results show that Indian food inflation during medium to long term has been driven by rising farm wages, rising global food prices, and loose fiscal and monetary policies. And these results are statistically quite robust.

Some argue that the rising food inflation is attributable to the recent hikes in the MSP (there was an annual average 20% increase in the MSPs of both rice and wheat in the two years 2007-08 and 2008-09). However, it is not as simple as it may appear to the eyes. First, MSPs are declared for 23 crops and is effective for mainly wheat and rice, and that too only in selected few states, namely Punjab, Haryana, Andhra Pradesh, Chhattisgarh and Madhya Pradesh. In the rest of the country, market prices often go below MSP.

Second, in an open economy environment, simple rules of pricing require the MSPs to be closer to export parity prices or fob (free on board) in commodities in which we are surplus and net exporters and closer to import parity prices or cif (cost, insurance and freight) in commodities that we are importing. If one compared the country's wheat and rice MSPs with our comparator countries in south and south-east Asia, we find that we are at a relatively lower band than these countries (Figure 15.7). Pakistan's MSP for wheat hovers around \$283/tonne and China offers around \$388.7/tonne, against our wheat MSP of less than \$226/tonne. Similarly, our rice MSP (\$320.3/tonne) is closer to Vietnam's MSP (\$ 297/tonne) and way below that of China, which ranges between \$ 444.7/tonne to \$494.1/tonne for Indica and Japonica rice (Gulati and Saini, 2013).

Figure 15.7
Comparison of Indian Rice and Wheat MSPs with South and South-east Asian Countries



Note: For wheat, the prices are for 2013-14 crop year to be harvested in 2014-15. For Rice, the crop and the marketing year are 2013-14. In countries other than China, the MSPs are given for paddy, which have been converted into rice prices by dividing the respective values by 0.66, which is the conversion factor of paddy into rice. For Philippines, the MSP is the buying price for individual farmers. The respective prices for FAs/FOs/FGs is US\$ 610.9 For China, the prices are for late and semi-late rice. The exchange rate used for currency conversion is as on 23 December 2013.

The MSPs in India are calculated on the basis of demand and supply forces of the crop, its costs of production, and crop price trends in both the domestic and international markets. Other inputs used in the determination of MSP are inter-crop price parity, terms of trade between agriculture and non-agriculture products, and the likely implications of the thus suggested MSP on the consumer of the product.

Thus the fact that the costs of production for most of the crops have escalated sharply in the last three years, primarily led by labor costs has to be accounted for while understanding the hikes in MSPs. Labor costs, for example, have risen by 74 per cent in the second half of 2011 over second half of 2008 at the all-India level. In Andhra Pradesh, they have increased by 88 per cent and in Tamil Nadu by 94 per cent. DAP prices have almost doubled in a single year. The overall cost of production of paddy at the all-India level for the 2012-13 crop is likely to be 53 per cent higher than in 2008-09, and the MSP increase for paddy during

2008-09 to 2011-12 has so far been just 20 per cent (CACP, Kharif Price Policy Report, 2013-14).

While arguing about the ill-effects of the hiked MSPs on the economy, analysts fail to acknowledge the production impact of such price hikes. Higher MSPs result in a higher supply response which, in turn, dampens price rise; crops with MSPs, by this logic, have seen lower inflation than those without MSPs.

We next proceed to utilise the analysis to bring out policy actions to rein in food inflation.

Remedies: Policy Options

First low hanging fruit is to expedite the liquidation of grains stocks from FCI godowns to open market. Although government has taken a decision in this regard, but implementation process needs to be geared up pro-actively taking into account the market conditions. For example, if government is offering wheat that is two years old, with poor quality, it cannot expect to fetch ₹ 1500/quintal rate from open market. In such cases, there should be appropriate discounts in the price. The bottom line being that the grains should reach people's stomachs rather than rot in FCI godowns. This would help contain food inflation.

Second, as the above analysis shows, one needs to contain the rising farm wages leading to higher costs in agriculture. Although, much of this is due to overall development process, which is very desirable, a part of it can be contained to some extent provided one is ready to restructure MGNREGA to apply also to farm operations. At present, there is a provision in the MGNREGA Act that workers can work on the farms of SC/ST small and marginal farmers. This can be amended to include all farms say up to 4 hectares, wherein half of the payment (say ₹ 100/day) is made by the farmer and another ₹ 100/day comes from MGNREGA account of the government. This way, the labor cost of production in agriculture can be contained, and labor productivity can be ensured on farms as private farmers will not pay unless MGNREGA workers perform properly. Operationally, however, it is a daunting task to implement it without leakages. But this can still be perhaps better than the current system of MGNREGA, which operates more like a dole, and where no proper assessment is available about the type of assets are being created. In any case, lately, the rise in wage labor costs is slowing down as the overall development process has slowed down in the last two years.

Third, as far as the influence of global prices is concerned, there is a silver lining. After touching a peak in February 2011, global food prices are moderating. If India reduces high import duties on various food products, it can moderate food inflation at home. Of interest would be to note that most of the fruits and vegetables attract duties above 30 per cent (potatoes, tomatoes are 30%, garlic at 100% and apples at 50%). Only import duty on onions is currently at zero. We would suggest bringing down import duties on all these fruits and vegetables to say 10 per cent. Similarly, skimmed milk powder, beyond in-quota tariff, attracts 60 per cent duty and chicken legs (cut pieces) attract 100 per cent duty. All these can be brought down significantly to give some relief to domestic prices.

Fourth, fiscal deficit must be contained to some rational levels. Fiscal Responsibility and Budget Management Act (FRBMA) of 2003 had laid down 3 per cent of GDP as the prudent level of fiscal deficit. In 2008-09, fiscal deficit of the centre crossed 6 per cent of GDP and if one adds to it the deficit of states, it was approaching almost 9 per cent of GDP. This is gross mismanagement of macroeconomy. Three subsidies: fuel, food and fertilisers, along with loan waivers and expanded MGNREGA were responsible for this state of affairs. These need to be pruned and made much effective. It is well known that there are large leakages and inefficiencies in the delivery of these subsidies to the targeted groups. The best way these can be handled is to transfer the money to targeted beneficiaries through Aadhaar (UID) route directly to their bank accounts. But this requires that every family has at least one bank account. The government is aware of this and its bold move towards financial inclusion through Pradhan Mantri Jan-Dhan Yojna (PMJDY) is a step in the right direction. It can be a game changer if cash transfers are affected at an early date. This will reduce the leakages and subsidy bills, thereby containing the fiscal deficit, and thus help relieve the pressure on food prices emanating from high fiscal deficit.

The money supply route, i.e., containing supplies of M3 by keeping interest rates high may not be the best bet as high interest rates hit growth adversely. The real root cause is fiscal deficit and focus should be to contain that.

Fifth, there could be many other measures such as freeing fruits and vegetables from APMC Act, incentivising organised retail to buy directly from farmers' organisations, bypassing the *mandi* system, developing more food processing industry, developing cold storages and efficient

value chains, all of which can help stabilise prices at lower levels. Some of these measures can be taken quickly, but most of them will take time to deliver.

Finally, to conclude, unless strong measures are taken on the lines delineated above, ranging from trade policies to reining in fiscal deficits, food prices are likely to remain volatile and somewhat high.

Notes

1. Newspapers have often highlighted the problems of price spikes in fresh vegetables, which are consumed by masses, and rightly so (see, e.g., Gulati and Saini, 2014).
2. For details see Ashok Gulati *et al.*, 2013.

References

- Agricultural Statistics at a Glance 2012 and 2013*. Controller of publications, Government of India. Delhi
- Damodaran, H. (2012). "An Alternative 'Theory' of Inflation". *The Hindu*. June 12. Link: <http://www.thehindubusinessline.com/opinion/columns/harish-damodaran/an-alternative-theory-of-inflation/article3520362.ece>
- Economic Survey (2012-13). Agriculture and Food Management. Chapter 8. Controller of publications, Delhi: Government of India.
- Gokarn, S. (2011). "Food Inflation: This Time it is Different". Kale Memorial Lecture delivered at the Gokhale Institute of Politics and Economics, Pune, December 9. Link: http://www.rbi.org.in/scripts/BS_SpeechesView.aspx?Id=638
- Gulati, Ashok and S. Saini (2013). "Taming Food Inflation in India", *Discussion Paper* No. 4, CACP, Ministry of Agriculture, Government of India
- . (2013). "Bringing Food Inflation Below 6 per cent", *The Financial Express*. July 3, 2014. Link: <http://www.financialexpress.com/news/column-bringing-food-inflation-below-6-/1211353/0>
- . (2014). "Of Onion Tears and Potato Fears". *Times of India*, July 3, 2014. Link: <http://timesofindia.indiatimes.com/business/india-business/Food-inflation-Of-onion-tears-and-potato-fears/articleshow/37660140.cms>
- Gulati, Ashok, S. Jain and N. Satija (2013). "Rising Farm Wages in India: The Pull and the Push factors", *Discussion Paper* No. 5, CACP, Ministry of Agriculture, GoI.
- Jadhav, Narendra and Balwant Singh (1990). "Fiscal Monetary Dynamics in India: An Econometric Model", *Economic and Political Weekly* 25(3).
- Kharif and Rabi Report 2013-14 and 2012-13*, Commission for Agricultural Costs and Prices, Department of Agriculture Cooperation, Ministry of Agriculture. Government of India. New Delhi.
- NSSO (2013). Key Indicators of Household Consumer Expenditure in India, 2011-12 (July 2011-June 2012), vol. KI of 68th round. National Sample Survey Office, Ministry of Statistics & Programme Implementation, Government of India.
- Rangarajan, C. and Alok Sheel (2013). "Growth or Austerity: The Policy Dilemma, Money & Finance", *ICRA Bulletin*, February 2013.

World Bank (2013). "State of the Poor: Where are the Poor and Where are they Poorest?" Draft by P. Olinto and H. Uematsu, Poverty Reduction and Equity Department. The World Bank.

Data Source

Central Statistical Office, Ministry of Statistics & Programme Implementation, Government of India. Link: http://eaindustry.nic.in/download_data_0405.asp. Accessed on 20 August, 2014.

Food and Agriculture Organisation (FAO). Link: <http://www.fao.org/worldfoodsituation/foodpricesindex/en/>. Accessed on 20 August 2014.

Planning Commission Data Tables. Link: <http://planningcommission.nic.in/data/datatable/index.php?data=datatab>. Accessed on 1 August 2014.

Labour Bureau, Shimla. Government of India. Link: <http://labourbureau.nic.in/schemes.html>. Accessed on 1 August 2014.

