

Food Inflation: Contingent and Structural Factors

RAJIV KUMAR, PANKAJ VASHISHT, GUNAJIT KALITA

Food prices in the immediate future can be controlled only through large imports. Wheat stocks are adequate but rice stocks are not. There will be a fiscal cost because global prices are above domestic prices, but this will not be above 1 per cent of central government expenditure. This may be the best option since food inflation is now threatening to become generalised.

1 Introduction

The past two years have been challenging for the global economy not only because of the financial crisis but also because of the unprecedented volatility in world food prices. The first half of 2008 saw global food prices rising 41% over the previous year due to droughts and crop failures in several major food producing countries combined with a substantial diversion of foodgrains for ethanol production whose output increased by 32.3% in 2008 over 2007 in response to the steep hike in crude oil prices. However, there was a U-turn in the latter half of 2008, with global aggregate demand, including for foodgrains and fuel, declining sharply in the wake of the post-Lehman global recession.

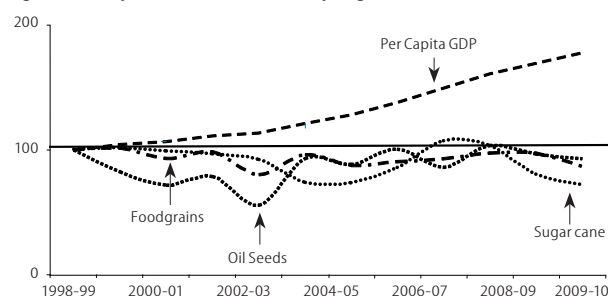
While food prices in India rose in line with global trends, they did not follow the trend downwards. In contrast, foodgrain prices in India increased even more sharply from mid-2009 onwards. This has largely been attributed to the drought and the resultant drop in kharif production. The price rise has been much sharper

and more sustained as compared with the last episode of drought-induced supply shock in 2002-03. Foodgrain prices increased only by 3-4% in 2002-03 as compared to a rise of 12-15% in the current period. We highlight the specific conditions that are responsible for this steep and sustained increase in foodgrain prices and suggest some remedial measures.

2 Gap in Domestic Demand and Supply

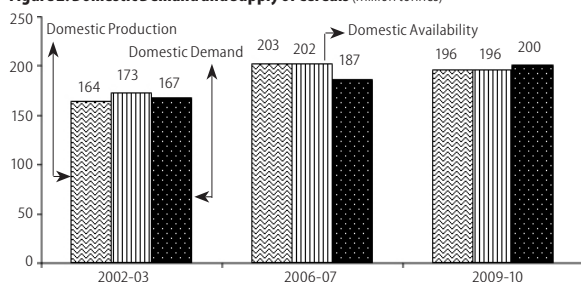
The decline in rainfall during the 2009 monsoon not only caused a reduction in the net area sown but has also adversely affected yields. Consequently, paddy and coarse cereals output is estimated to come down by more than 15% in 2009, compared to 2008. The production of sugar cane has declined by 9%. However, this decline is significantly less than the decline witnessed during 2002-03, when output of paddy and coarse cereals declined by more than 22%. Moreover, even in terms of per capita production of major agro-products, the current situation is far better than in 2002-03 (Figure 1). Hence, it is difficult to attribute the present price rise entirely to the drought.

Figure 1: Per Capita Production Index of Major Agricultural Products

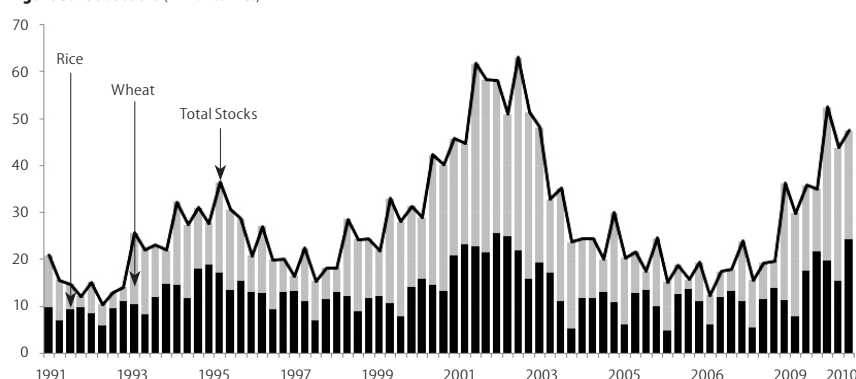


Source: Authors' estimates from *Agriculture at a Glance*, Department of Agriculture and Cooperation and *Handbook of Statistics on India Economy*.

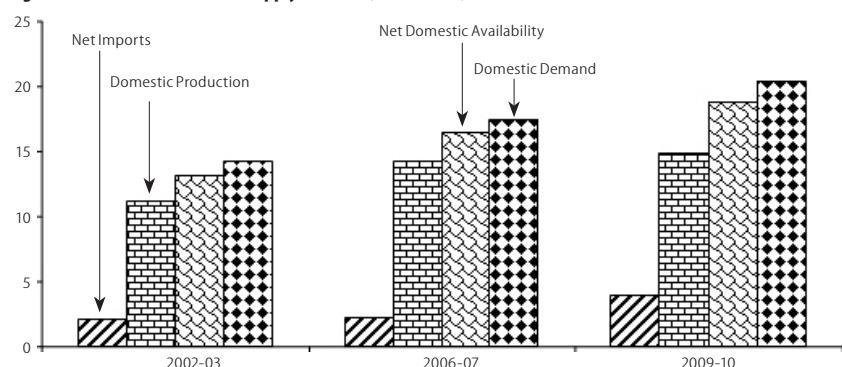
Rajiv Kumar (RKumar@icrier.res.in), Pankaj Vashisht (pankaj@icrier.res.in) and Gunajit Kalita (gkalita@icrier.res.in) are at the Indian Council for Research on International Economic Relations, New Delhi.

Figure 2: Domestic Demand and Supply of Cereals (million tonnes)

Source: Same as Figure 1.

Figure 3: Foodstocks (million tonnes)

Source: Department of Food and Public Distribution.

Figure 4: Domestic Demand and Supply of Pulses (million tonnes)

Source: Same as Figure 1.

Based on the estimates of the 59th round of National Sample Survey Organisation (NSSO) of household consumer expenditure, and taking indirect demand for foodgrains into account, at about 17% of total demand,¹ the total demand for cereals in 2003 can be estimated at around 167 million tonnes (mt). Following Bhalla (2001) and Mittal (2006) we use the expenditure elasticity of demand for cereals to project the demand for the current year. We make due adjustments to Mittal's estimates for the higher GDP growth rate and also use different elasticities for rural and urban demand for cereals. This yields a total cereal demand in 2009-10 of 200 mt. From Figure 2 it is evident that production fell short of potential demand by 3 mt in

2002-03 and by 4 mt in the current period. A shortfall of an additional one million tonnes is not likely to cause the steep price increase being experienced now.

The feature that differentiates the two episodes is the level of cereals

increased, they have fallen short of rising demand. Consequently, the gap between demand and supply has continuously increased from 1 mt in 2002-03 to 1.6 mt in 2009-10. The inability to raise the output of pulses over the past 10 years can be seen as one of the major policy failures in agriculture.

Following a decline in sugar cane production in 2007-08, domestic sugar production declined by 2 mt in 2008-09 over the previous year. Surprisingly, despite this production decline, sugar exports increased sharply in 2008-09. The decline in production along with larger exports reduced domestic availability, which fuelled inflation (Table 1). Consequently, sugar

Table 1: Domestic Demand and Supply of Sugar (million tonnes)

Year	Production	Opening Stocks	Exports	Domestic Supply	Domestic Demand
2002-03	18.56	10.66	1.14	28.09	19.65
2006-07	19.26	4.83	1.37	22.73	27.17
2007-08	28.30	3.64	2.52	29.41	28.70
2008-09	26.34	9.20	5.85	29.68	31.40
2009-10	24.00	8.10	na	32.10	33.62

Source: CMIE and authors own projections.

prices started rising from May 2008 onwards. The monsoon failure further aggravated the situation. Given an absolute decline of 9% in production of sugar cane in 2009-10, domestic availability of sugar is expected to decline further and prices are likely to remain firm.

Hoarding combined with speculation is one of the main causes of surge in food prices. An abnormal difference between retail and wholesale prices can indicate the extent of hoarding. The gap between the two on account of logistics costs, margins and transactions costs is expected to remain constant over time with any sharp difference reflecting an increase in hoarding. The mark-up in retail prices over wholesale price went up from around 8% in December 2008 to 12% in December 2009

stocks while going into the drought. In April 2002, just prior the drought, stocks were at their historically highest level of 63 mt (Figure 3). This stock not only worked as a disincentive for hoarding but was also used effectively by the government to augment market availability. In contrast, in July 2009, just prior to the recent drought, stocks were 52 mt, appreciably lower than in 2002. This led the government agencies to procure more actively and also appear to have restrained it from undertaking open market operations.

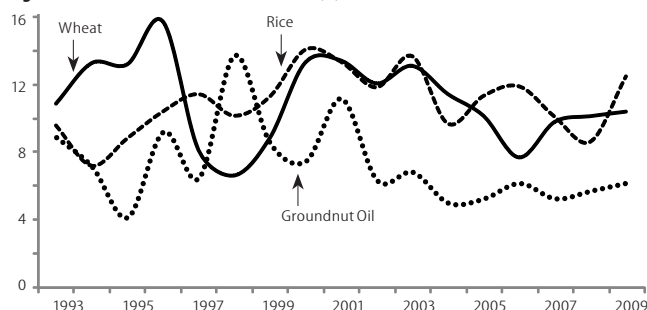
In the case of pulses, India has consistently faced shortages and its dependence on imports is well established (Figure 4). Though domestic production as well as the imports of pulses have consistently

Style Sheet for Authors

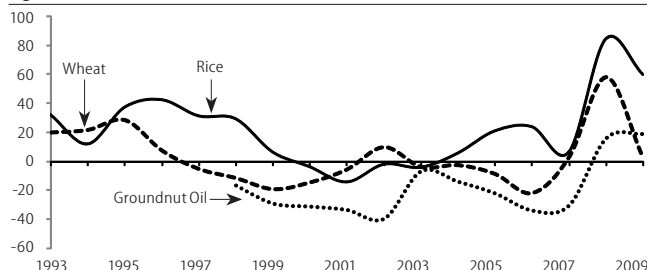
While preparing their articles for submission, contributors are requested to follow EPW's style sheet.

The style sheet is posted on EPW's web site at <http://epw.in/epw/user/styletocontributors.jsp>

It will help immensely for faster processing and error-free editing if writers follow the guidelines in style sheet, especially with regard to citation and preparation of references.

Figure 5: Retail Price over Wholesale Price (%)

Source: Ministry of Consumer Affairs, Food and Public Distribution, International Rice Research Institute.

Figure 6: International Prices over Domestic Wholesale Prices (%)

Source: Same as Figure 5.

in case of rice. In comparison it had increased up to 14% in 2002-03!

Similarly, for wheat, the retail mark-up over wholesale price was around 13% in 2002-03 and in 2008-09 it is lower at 10%. It seems that speculative activity and hoarding is at least partially responsible for the presently high food prices (Figure 5).

3 International Prices

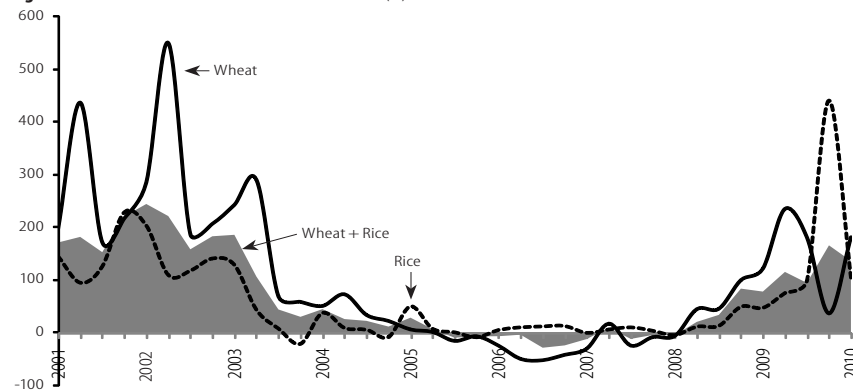
Global food prices nearly doubled between June 2007 and June 2008. They fell very sharply after that and were back to the June 2007 level by February 2009. But thereafter they have increased by almost an average of 12% between February 2009 and December 2009 across all food commodities. The rise in agricultural raw materials prices has been much sharper at nearly 36% in the nine months between April and December 2009.

Figure 6 shows that in the case of rice,² despite a recent decline, international

prices remain 61% higher than the domestic wholesale price. In the case of wheat³ international prices were 58% higher than domestic wholesale price in the first half of 2008, but the gap virtually closed by December 2009.

As indicated in Table 1, there was a surge in sugar exports during 2007-08 and 2008-09. Exports had doubled each year during these two years. This rise in exports defies explanation because unit value realisation⁴

from exports, without taking the subsidy available for exports, is lower than from selling in domestic markets.⁵ In a time when domestic production fell and available domestic price was higher than global price, doubling of export for two successive years is inexplicable and shows a rather ironical use of government subsidies.

Figure 7: Actual Stock over Minimum Buffer Norms (%)

Source: Department of Food and Public Distribution – various annual reports.

4 Is Destocking an Option?

During an inflationary spiral, as is currently being experienced, the central pool of cereals can be used to reduce the supply-demand mismatch. A minimum norm for buffer stock of cereals is set by the department of food and public distribution at the beginning of each quarter. Figure 7 shows that between 2005 and 2008, stocks held in the central pool were below the buffer stock norms. To make up this deficiency the Food Corporation of India (FCI) made special efforts 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.

Table 2 reveals that in 2009-10 (April to December), procurement of wheat was 25.4 mt, nearly 8% above for the same period last year when it was 22.9 mt. In the kharif crop 22.9 mt of rice was procured. During 2009-10, when according to the first advanced estimates, rice production has declined by 15%, there has been a 4% increase in the rice procurement. This has also contributed to rise in rice price in open markets.

The central pool stocks of wheat and rice were reported to be 47.4 mt at the end of January-2010 with rice and wheat stocks being 24.3 mt and 23.1 mt respectively.

Table 2: Offtake and Procurement of Wheat and Rice (million tonnes)

	Offtake				Procurement under Central Pool		
	Rice under TPDS	Wheat under TPDS	Other Welfare Schemes (Rice+Wheat)	Open Sales/Exports	Total	Rice	Wheat
2002-03	10.56	9.78	11.38	18.12	49.85	15.8	19.0
2003-04	13.39	10.81	13.50	11.64	49.33	22.9	15.8
2008-09	22.20	12.60	3.40	1.20	39.40	32.8	22.7
2008-09 (April-December)	14.90	8.10	2.00	0.10	25.10	22.1	22.7
2009-10 (April-December)	18.10	14.40	2.90	0.50	35.90	22.9	25.4

Source: Department of Food and Public Distribution and Food Corporation of India.

Assuming the offtake to remain constant as in the past months, 18 mt will be needed until November 2010, when the next rice procurement season will start. With a minimum buffer stock requirement for rice of 12.2 mt for the next quarter and obligations of the public distribution system and all welfare schemes, there is simply not enough rice available for

open market sales. This perhaps explains the government's reluctance to push more rice into the open market and bring down prices.

For wheat the situation is different with a stock of 23.1 mt in January 2010 and next rabi procurement season starting in April. It is, therefore, quite inexplicable that the government had only conducted open market sales of 0.5 mt of rice and wheat together between April and December 2009 (Table 2, p 18). In sharp contrast, 10 mt of foodgrains were sold in the open market in 2002-03. While there is arguable limited substitutability between rice and wheat, selling available stocks of wheat would have presumably helped contain prices.

5 Conclusions and Policy Recommendations

The declining per capita availability of cereals, pulses and oilseeds, referred to above, points to the need for focused policy attention on improving the state of Indian agriculture. Policy must be directed towards attracting more private investment, bringing in new technology and raising yields. The key would be to perhaps move away from the current system of subsidies and other government interventions that are evidently not achieving the desired results in securing food security and raising farmers' incomes. We have to also consider extending the Mother Dairy model to cereals whereby the disadvantages of fragmented small-scale peasant production can be overcome by encouraging cooperatives or even private corporations to collect, process and distribute agro-products using the latest technologies and modern practices. In short, the second green revolution needs to be ushered in urgently but on the basis of innovative thinking and not business as usual. But these are long-term concerns, while immediate steps are needed to bring down food prices as quickly as possible.

The structural reason for the food price rise seems to be the rising gap between per capita incomes, the resultant rise in demand for food products and the stagnant or declining per capita availability of these commodities. With rising incomes, the better-off have been successful in

chasing prices to meet their demand, forcing the prices to rise and driving the poor to make do with lower consumption.

In the short term, greater amount of food products can be made available in the market by reducing post harvest losses and waste. This will be achieved by allowing the entry of private retailers who will modernise the supply chain for meeting their procurement requirements. Thus, while it may sound paradoxical, the second green revolution can start outside the agriculture sector by modernising the supply chains including logistics, warehousing and handling.⁶ But far more needs to happen. Private retailers who procure directly from the farmers offer them up to 30% higher farm gate prices and also in some cases help with the supply of new seeds and irrigation technologies, etc.⁷ Thus, the government will do well to encourage the entry of modern retail, both domestic and foreign, if it wants to modernise agriculture, raise yields and make greater supplies available in the markets. This will also cut the layers of intermediaries who currently appropriate a very large and disproportionate share of value addition and discourage private investment in agriculture.

In the more immediate context, food prices can be brought down and inflationary expectations weakened only by augmenting supplies through imports as existing rice stocks will not suffice to increase supplies in the market. With global prices already above domestic prices this will necessarily imply a fiscal cost. Taking

all factors into account, it can be broadly estimated that importing 6 mt of rice will cost about Rs 6,000 crore or just above \$1 billion. This works out to roughly 0.67% of total central government revenue expenditure in 2009-10. These can be augmented by releasing existing wheat stocks which will be replenished in April with the incoming rabi crop. This would appear to be a reasonable way forward to tackle food price inflation which is now threatening to become far more generalised and posing a threat to macro-economic stability.

NOTES

- 1 Courtesy estimates of Praduman Kumar (1998).
- 2 Five per cent broken, milled, fob Bangkok Rice.
- 3 Canadian No 1 Western Red Spring 13.5%, in store Thunder Bay, domestic, from 1985 St Lawrence export.
- 4 Total value of export divided by total quantity of export.
- 5 Sugar medium grade (Delhi).
- 6 This is already happening to a limited with chains procuring directly from the farmers and building a modern logistics and supply chain.
- 7 See Joseph and Soundararajan (2009) for details of the survey reports.

REFERENCES

- Bhalla, G S (2001): "Demand and Supply of Food and Feed Grains by 2020" in M D Asthana and Pedro Medrano (ed.), *Towards Hunger-Free India* (New Delhi: Manohar).
- Joseph Mathew and Nirupama Soundararajan (2009): *Retail in India*, Academic Foundation.
- Kumar, Praduman (1998): "Food Demand and Supply Projections for India", Agricultural Economics Policy Paper 98-01, Indian Agricultural Research Institute, New Delhi, India.
- Mittal, Surabhi (2006): "Structural Shift in Demand for Food: Projection 2020", ICRIER Working Paper 184, ICRIER, New Delhi.

EPW Packing

Subscribers of EPW would have noticed that we now pack the weekly copy in a plastic cover.

This followed complaints by a number of subscribers that in the original half-sleeve made out of paper, the week's issue would often arrive damaged (during the monsoon) or dog-eared (if the issue was a large one) or even that the folded copy was not easy to read during the first week after receipt. The growing number of subscriptions also meant that EPW's staff was increasingly finding it difficult to manually pack the issue in the old wrapper in time to meet the postal deadline.

In the search for alternatives EPW's first choice was to post the issue in a large paper envelope. However, the cost of posting in such a format was prohibitive.

After considerable thought EPW finally decided to send out subscriber's copies in a plastic cover. These covers are prepared from *recycled* plastic and are also *reusable*.

Since the switch, most subscribers appear satisfied with the current form of delivery. But a few readers have complained that we are contributing to environmental abuse.

EPW is open to revisiting the decision taken a year ago and welcomes concrete suggestions from subscribers about the mode of packing. Please do write to us at packing@epw.in about what we should be doing.