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Prices of Onions: An Analysis

PURUSHOTTAM SHARMA, K C GUMMAGOLMATH, R C SHARMA

There was a substantial increase in onion production until 2008-09, resulting in a rise in market arrivals. However, due to unseasonal rains, the production of onions declined by about 20% in the three major growing states during 2009-10 and 2010-11. The recent sharp rise in the prices of onions can be attributed to a decline in kharif production on account of unseasonal rains at harvest time in the major onion producing states, a reduction in the minimum export price and consequent increase in exports during November 2010 and a holding back of stocks by traders.

The spectre of rising prices of food articles, vegetables in particular, is haunting Indian policymakers again. A little relief from inflation felt by the consumer during October and early November 2010 was temporary; the prices of onions and a few other vegetables shot up thereafter. The food inflation rate crossed the double-digit mark for the week ending on 11 December due to a sharp rise in the prices of onions, other vegetables and food-grains. With the astronomical rise in onion prices in the second and third weeks of December, there is a worrying situation that food inflation could rise further. It is not only onions, the price rise is observed in other vegetables such as tomatoes and cauliflowers which have shown increases of more than 82% during December 2010 over the November 2010 levels, while brinjal prices have gone up by 44% in the same period (National Horticultural Board (NHB), Bangalore).

India has the largest area under onions, 5.54 lakh hectares (2008-09), accounting for around 22.40% of the world onion area. In terms of production, India is second after China accounting for 19% of the global onion production. Besides India and China, the other major onion producing countries are Turkey, Pakistan, Brazil, us, Iran, Spain and Japan.

Data and Methodology

To understand consumer behaviour with respect to onion price changes in the wake of the sudden spurt, secondary statistics on area and production, market arrivals and prices, were collected from the websites of the National Horticultural Research and Development Foundation (NHRDF), NHB, Department of Agriculture and Cooperation, Ministry of Agriculture, AGMARKNET and the Food and Agriculture Organisation. Monthly wholesale and retail prices and arrivals for different markets were collected from January 2002 to December 2010. For Mumbai, Delhi and Bangalore markets, monthly retail prices were available from January.

In addition, primary data from wholesalers, retailers and consumers at different retail locations of Jaipur city was collected through personal interviews during the end of third week of December 2010. The retail locations visited for primary data collection were Johari Bazaar, Vaisali Nagar, C-Scheme, Tonk Phatak, Mansarovar, Malviya Nagar, Sanganer and Pratap Nagar.

Domestic Production

India produces all three varieties of onions – red, yellow and white. In some parts of the country, onions are grown in all the three seasons. In the northern part of the country, onion is usually grown in the winter (rabi) season. However, in the southern and western states of Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat and Maharashtra, it is grown in winter (rabi) as well as in the rainy (kharif) seasons. Currently kharif onion is gaining ground in the northern part of the country. Thus, onion is cultivated and is available to domestic consumers, as well as for export throughout the year. During the agricultural year 2008-09, onions were grown in an area of 8,34,000 hectares with a production of 1,35,65,000 tonnes in the country (Table 1, p 23). Although onions are cultivated almost all over the country, the major producing states are Maharashtra, Karnataka, Madhya Pradesh, Gujarat, Rajasthan, Andhra Pradesh, Uttar Pradesh, Orissa, and Tamil Nadu. Maharashtra is the leading producer of onions in the country contributing to 30% of total onion production followed by Karnataka (22%), Gujarat (10%), and Bihar (7%). In almost all important states growing onions, there was an increase in both area and production by twofold or more between 1998-99 and 2008-09. The increase in production is attributed to an improvement in yield as well. The improvement in yield was tremendous in states like Karnataka, Bihar and Rajasthan. It increased by four times in these three states and other states also witnessed considerable improvement in yield. It may be attributed to efforts put in by the state horticulture departments under the National Horticulture Mission which was launched in early 2000.

Due to unseasonal rains in 2009, both area under onions and production came

The views expressed in the paper are personal and do not reflect those of the organisation to which the authors are affiliated.

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Table 1: State-wise Area and Production of Onions – Major States

States/UT	1996-97	2000-01	2008-09	2009-10	% Change over 2008-09
Area ('000 hectares)					
Maharashtra	95.5	118.1	250	200	-20.00
Karnataka	90.5	120.3	165.1	141.3	-14.42
Madhya Pradesh	23.6	19.4	53	57.3	8.11
Bihar	19.1	13.8	51.6	53	2.71
Rajasthan	24.4	24.6	41	45	9.76
Gujarat	16.5	6.4	57.6	43.4	-24.65
Andhra Pradesh	27.2	30.3	39	39	0.00
Tamil Nadu	24.9	30.9	32.3	35.3	9.29
Orissa	37.5	4.2	31.5	32.1	1.90
Uttar Pradesh	29.1	24.0	22.3	24.3	8.97
Haryana	4.5	12.2	18.8	18.4	-2.13
All India	404.00	450.00	834.00		
Production ('000 tonnes)					
Maharashtra	1,189.1	1,687.5	3,932.50	3,146.00	-20.00
Karnataka	508.7	665.4	3,031.80	2,266.20	-25.25
Gujarat	433.0	131.2	1,409.60	1,078.60	-23.48
Bihar	145.2	140.8	946.6	972	2.68
Madhya Pradesh	308.9	272.7	881.8	952.3	8.00
Rajasthan	206.2	165.1	369.1	742.5	101.16
Andhra Pradesh	369.2	536.5	662.6	662.6	0.00
Tamil Nadu	210.2	302.8	311.6	339.7	9.02
Haryana	60.7	153.9	347.9	330.3	-5.06
Uttar Pradesh	386.1	338.2	308	320.3	3.99
Orissa	295.4	24.4	289.6	298.8	3.18
All-India	4,180.00	4,721.1	13,655.00		
Yield (MT/ha)					
Gujarat	26.24	20.50	24.47	24.85	
Punjab	19.17	20.92	21.43	21.62	
Bihar	7.60	7.20	18.34	18.34	
Haryana	13.49	12.61	18.51	17.95	
Andhra Pradesh	13.57	17.71	16.99	16.99	
Madhya Pradesh	18.09	14.06	16.64	16.62	
Rajasthan	8.45	6.71	9.00	16.50	
Karnataka	5.60	5.53	18.36	16.04	
Maharashtra	12.45	14.29	15.73	15.73	
Uttar Pradesh	13.27	14.09	13.81	13.18	
All-India	10.35	10.49	16.26		

down in the important states of Maharashtra, Karnataka, Gujarat and Haryana in 2009-10. The magnitude of decline in production of onions was the highest in Gujarat (24%) followed by Maharashtra (20%) and Karnataka (14.42%). Recent reports suggested that the same situation repeated itself during 2010-11 season, resulting in reduction of onion production to the extent of 30-40% in different places. Samra et al (2006) reported that the crop suffered huge losses due to abnormal weather events during rabi 1997, kharif 1998 and kharif 2005 causing considerable losses to producers and consumers drawing the attention of the government to urgently take up remedial measures to overcome the crisis.

Trends in Exports

India is a traditional exporter of fresh onions (Mathur 2001). Soon after Independence in 1951-52 the country was exporting over 5,000 tonnes of onions worth Rs 106.69 lakh. Exports of onions started expanding rapidly during the 1960s and reached a high of 5,12,000 tonnes in 1996-97. There was substantial increase in per unit value of onion from Rs 1,733/tonne during 1981-82 to Rs 4,078/tonne during 1990-91. Over the years there has been a progressive increase in the exports of onion from India and touched a peak of 18,73,000 tonnes during 2009-10. The quantum had touched a level of 11,58,000 tonnes during the financial year of 2010-11 up to November 2010 (Table 3). The large export is also one of the reasons for sudden spurt in the prices of onion during December 2010.

However it is apparent from Table 2 that although there has been an increasing trend in the quantum and value of exports of onions from the country, the exports are subject to wide fluctuations from year to year. This may be attributed to the fact that the exports of onions have not been free but are canalised through National Agricultural Cooperative Marketing Federation (NAFED) and now through some other agencies. Such agencies are protecting the domestic consumer and producer from unduly high prices and gluts as well. The cause of fluctuations in the exports may be due to the occasional restriction put on exports (Sudhir 2004), keeping in mind the domestic requirement. No doubt, exports of onion have fetched the country valuable foreign exchange and at the same time have given high price per tonne to the producer. The profitability and the potential offered by the exports of onion are evident from the fact that, on a national basis, the area, production and yield of onion have steadily increased by almost two and a half times between 1980-81 and 2008-09 (Table 1).

Table 2: Exports of Onions from India

Year	Qty (MT)	Value (Rs Lakh)	Price (Rs/Tonne)	Source
1951-52	56,986	106.69	187.22	NAFED
1961-62	1,14,023	291.3	255.47	DGCIS
1971-72	54,866	227.56	414.76	DGCIS
1981-82	1,69,771	2,943.81	1,733.99	DGCIS
1990-91	2,89,380	11,803.00	4,078.72	DGCIS
1991-92	4,06,135	16,296.86	4,012.67	NAFED
1996-97	5,12,879	33,163.40	6,466.13	NAFED
2001-02	5,06,924	41,140.53	8,115.72	NAFED
2008-09	17,83,820	2,24,312.30	12,578.63	NAFED
2009-10	18,73,002	2,83,428.50	15,132.31	NAFED
2010-11 (up to Nov 10)	11,58,698	1,52,115.60	13,128.15	NAFED

A policy decision was taken on 2 November to reduce the minimum export price (MEP) of onions to encourage exports, in expectation of a drop in the prices of onions during the kharif harvest. On the contrary, unseasonal rains in Maharashtra and Karnataka damaged the kharif crop, resulting in lower arrivals. This resulted in a spurt in onion prices leading to a decision to increase the MEP on 15 November to curb exports.

To increase the supply of onions in the domestic market, another decision was taken on 20 December to significantly increase the MEP and the exports of onion were banned until 15 January 2011 due to the sudden spurt in prices. Further, on the next day an export ban until further orders was imposed by the directorate general of foreign trade.

Exports of onions from India are regulated and permitted only through certain designated canalising agencies. One of the prime agencies is the NAFED, which is the sole agency for exports of onion from India.

NAFED intervenes in the domestic marketing whenever there is glut and prices reach uneconomical levels for onion. Prices prevailing in major markets all over

Table 3: Month-wise Exports of Onions during 2010-11

Month	Qty (MT)	Value (Rs Lakh)	Price (Rs/Tonne)
April	1,73,845	20,337.20	11,698.47
May	1,54,356	14,194.57	9,196.00
June	1,58,283	15,234.73	9,624.99
July	1,79,554	17,179.71	9,567.99
August	144,860	15,475.39	10,683.00
September	1,16,167	19,416.14	16,713.99
October	98,370	18,907.73	19,221.03
November	1,33,263	31,370.11	23,540.00
Total	11,58,698	1,52,115.60	

Source: NAFED.

the country are reviewed every day in this process. Procurement prices of onions are decided by NAFED on the basis of the cost of production, and procurement is initiated in the markets and from the farmers directly. In the event of a large rise in prices, the commodities are sold at a controlled price to the consumers through its outlets of other agencies.

Seasonality in Arrivals and Prices

Depending on the production of onion, there is a seasonality in arrivals and prices every year. The changes in arrivals may occur due to a rise or fall in production, poor storage, early harvesting, lack of retention power by growers and exports. Keeping in view the recent spurt in the price of onion, the seasonality of arrivals and prices were analysed for different markets for a period from 2002 up to the latest month for which data was available in 2010.

Jaipur Market

The seasonal behaviour of the arrivals and prices of onions in major markets of the country were calculated and are depicted in Table 4. Onions are grown in both rabi and kharif seasons and can be stored for a longer period compared to other vegetables except potato. Hence, the arrivals of onions take place throughout the year across country. The highest arrivals were during April-July in the Jaipur market and the prices were lowest in these months. The value of arrivals started declining from October onwards and the trend continued up to March. It is also interesting to note that since onion is grown in the rabi season in Rajasthan,

the values of arrivals were maximum during April-May.

Delhi Market

The largest arrivals were during June-July and November-December in the Delhi market and surprisingly the market prices were highest during the months of high arrivals (November-December). Arrivals and prices started declining marginally from January until May. However, prices were higher during June and July, despite an increase in the values of arrivals in the corresponding period.

Bangalore and Other Markets

A peculiar situation could be observed from the trend in arrivals and prices of onions in the Bangalore market. The values of arrivals started increasing from September and touched a peak during October. Similarly, prices started increasing during August and the trend continued up to January. This situation was noticed mainly due to the entry of more traders for purchase with higher arrivals from different parts of country. Another reason might be that the rising trend in prices persuaded farmers and traders to bring more and more produce to the market.

Trends in arrivals and prices of onions in different markets for November and December 2010 are presented in Figures 1a to 1f. It is evident from the figures that during the third week of December, prices of onions skyrocketed and the arrivals reduced drastically. The selected markets are mainly consuming markets and receive secondary arrivals in sizeable amounts. The pattern of reduction in arrivals in this

Table 5: Volatility of Prices and Arrivals of Onions in Jaipur Market

Month	CV Wholesale Price	CV Arrivals	CV Retail Price	Wholesale to Retail Price Markup
November 2008	12.66	24.08	14.75	170.77
December 2008	4.53	24.82	5.77	175.91
November 2009	10.43	36.27	12.37	168.87
December 2009	11.75	22.82	8.57	165.59
November 2010	8.15	33.79	7.46	158.68
December 2010	43.72	27.10	39.46	159.29

particular period (third week of December 2010) might be due to retaining of stocks by onion traders.

Retail versus Wholesale Prices

An analysis of the retail markup between wholesale and retail prices (November-December of 2008, 2009 and 2010) in Jaipur revealed that the retail markup was as high as 176% during December 2008 and 160% during the same month of 2010. Traders opined that retailers are responsible for the exorbitant rise in the price of onions. This higher markup of retailers seems to give credence to the opinion of the traders. The tendency of the retailers who were observed reveals that despite a decline in wholesale prices on a particular day, the retailers sold onions at the previous day's prices. To prove this, a survey was conducted in different markets in different localities of Jaipur between 24-26 December 2010. It was found that, an average quality of onion purchased from a wholesaler for Rs 20-25 a kg was sold at Rs 30-50 in retail. While the wholesale price of excellent quality onions was around Rs 38 a kg it was sold at Rs 60-70 in retail.

On the other hand, as opined by the traders, it was also observed that, due to the rising trend in prices, farmers have

Table 4: Seasonal Index of Arrivals and Wholesale Prices in Major Markets (2002-10)

Months	Jaipur		Delhi		Bangalore		Chennai		Mumbai		Bhopal	
	Arrival	Prices	Arrivals	Prices	Arrivals	Prices	Arrivals	Prices	Arrivals	Prices	Arrivals	Prices
January	79.97	105.0	93.79	99.14	92.35	108.34	123.41	109.6	94.40	100.16	92.36	111.80
February	71.53	99.3	89.48	87.45	77.64	88.61	84.89	92.6	76.05	85.97	101.89	101.83
March	78.06	85.2	96.70	74.75	63.83	66.79	93.79	76.8	124.81	67.60	89.71	79.97
April	110.80	67.1	92.52	65.30	70.46	59.16	97.72	68.3	79.69	58.98	101.58	62.07
May	141.66	56.2	95.33	59.27	80.91	63.34	107.67	64.7	81.53	66.56	186.21	50.47
June	124.01	62.8	111.32	74.05	73.17	78.83	96.95	79.5	76.75	84.37	155.79	66.54
July	124.07	76.6	102.07	86.72	65.89	89.86	105.15	84.1	73.80	84.01	95.71	93.51
August	100.70	99.3	86.06	98.74	68.91	102.92	88.04	93.3	82.74	97.40	74.41	95.56
September	113.17	126.1	85.04	116.07	102.16	107.24	98.84	102.4	74.86	113.62	74.04	118.50
October	94.12	152.2	84.16	138.07	210.97	130.83	89.11	129.1	94.15	138.64	68.41	151.11
November	82.07	136.0	132.68	167.18	161.75	148.46	107.78	149.9	109.81	155.62	67.57	145.61
December	79.85	134.0	130.85	133.25	131.97	155.62	106.65	149.7	231.42	147.08	92.32	123.03

Sources: (1) Websites of National Horticulture Board and AGMARKNET.

(2) For December 2010, data is up to 22 December.

(3) Seasonality Index calculated as used in S S Acharya and N L Agarwal (1994), *Agricultural Prices-Analysis and Policy*, Oxford-IBH: New Delhi.

Arrivals and Prices of Onion during November and December 2010

Figure 1a: Jaipur

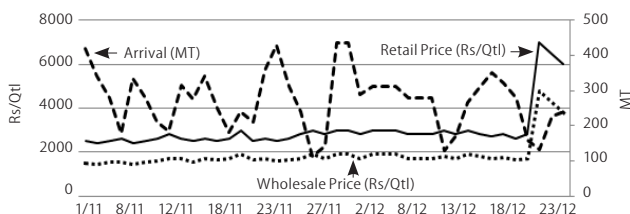


Figure 1c: Delhi

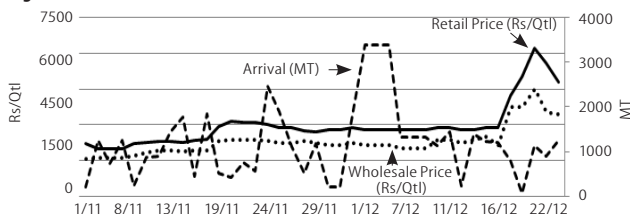
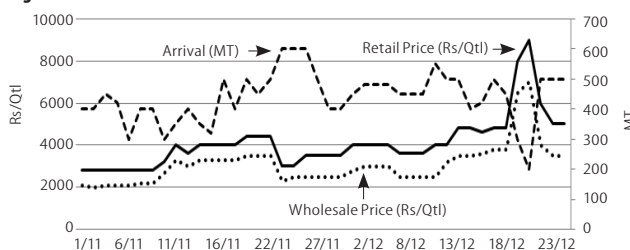


Figure 1e: Chennai



resorted to an early harvest with high moisture content leading to weight-loss, for further sale. To make up for this loss, wholesalers and semi-wholesalers have resorted to sale of onions at a higher price.

Volatility of Prices and Arrivals in Jaipur

To measure volatility, the coefficient of variation was calculated for arrivals and prices of onion in the Jaipur market. It is revealed from Table 5 that the variability in daily arrivals ranged between 22.82 in December 2009 and 36.27 in November 2009 depicting no definite pattern in variability. While the magnitude of variability in daily wholesale and retail prices were low until November 2010, they increased to 43.72 and 39.46 in December 2010, respectively, indicating high volatility within a short span of time. It is interesting to note that the retail markup was more than 150%, indicating that the retailer sold the onions at double the wholesale price. In other words, retailers are earning a 40% margin over wholesale prices after meeting about 10% mandi and other charges borne by them. This is also evident from the observation of the researcher from the field. Good quality onions were sold at Rs 3,800/

quintal (Rs 38/kg). While on the same day, the retail price of such quality onions was around Rs 60-70 a kg in Jaipur city.

Conclusions

A time series analysis of trends in area and production of onions revealed that there is significant increase in onion production resulting in a rise in market arrivals. However, due to unseasonal rains, the production of onions declined by about 20% in three major growing states during 2009-10 and 2010-11. To some extent, this reduction in production was offset by marginally higher production in other states like Rajasthan and MP. The magnitude of decline in production did not affect arrivals in the market very much.

The astronomical increase in the prices of onions was a result of hoarding of the stocks in anticipation of a rise in the price and higher retailers markup. The rise in prices was also partly due to the reduction in MEP and consequent increase in exports during November 2010. Moreover, the crop situation was not predicted accurately and thus the information on loss in production was not anticipated by market intelligence.

Staggered planting of onions with suitable varieties can address the supply gap

Figure 1b: Mumbai

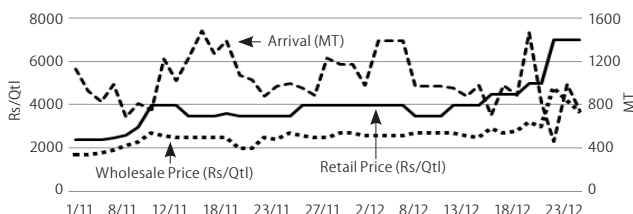


Figure 1d: Bangalore

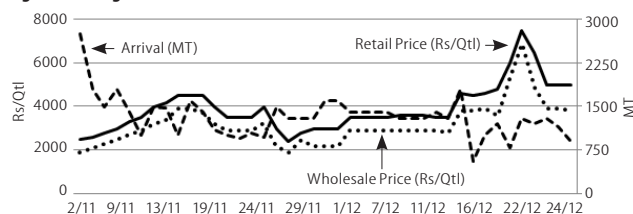
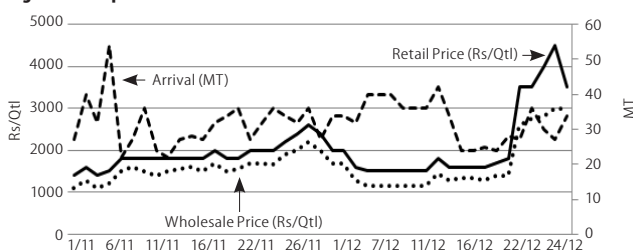


Figure 1f: Bhopal



during the slack period, thereby stabilising prices during the year. As part of market reforms, minimum support prices for onions and the implementation of market intelligence systems can help in discovering the right prices for producers as well as consumers.

REFERENCES

- Mathur, V C (2001): "Export Potential of Onion: A Case Study of India", paper presented in "Regional Workshop on Commodity Export Diversification and Poverty Reduction in South and South-East Asia", held from 3-5 April 2001, at Bangkok, Thailand by UNCTAD and ESCAP.
- Samra, et al (2006): "Impact of Access Rains on Yield, Market Availability and Prices of Onion", *Information Bulletin* – Hyderabad: Central Research Institute for Dryland Agriculture (ICAR).
- Sudhir, B (2004): "Onion Prices and State Intervention", *Economic & Political Weekly*, 14 August, 3684-86.

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