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ARTICLES

THE CHANGING PATTERN OF CONSUMER DEMAND FOR FOODGRAINS IN INDIA

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The underlying objective of all development activities is to improve the consumption levels of the population, especially those belonging to the poorer strata of the society. Since food is the most important and sensitive item of the consumption basket, an analysis of the changes in food consumption pattern over time has a special significance. Among the food items, a study of foodgrains, which is the most important component for the low and middle income groups, is facilitated by the existence of time-series and cross-section data.

Time-series data on consumption of foodgrains¹ in India correspond to an indirect estimate derived from an accounting identity of total availability.² This has limitations on account of the exclusion of changes in private stock, a constant proportion of production being considered as allowance for non-food use and the methodology used in estimating gross production.

Direct estimates of consumption of foodgrains and consumer expenditure are available from nation-wide consumer surveys carried out periodically by the National Sample Survey (NSS) Organisation. Although any large scale sample survey on household consumption pattern with an all-India coverage is likely to introduce some errors,³ the direct consumption estimates obtained from the NSS provide a more reliable source for analysing the structure of consumer demand in India and the nature of structural changes in the consumption pattern as compared to time-series data. Moreover, estimates obtained from subsequent cross-sections can be used to analyse the changes in consumption levels according to the socio-economic characteristics of the population. This study uses data from the 17th Round NSS during 1961-62, 19th Round during 1964-65 and 28th Round during 1973-74 to analyse the changes in per capita consumption levels, consumer prices,

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1. In most of the Government sources of data, foodgrains include cereals and pulses, with pulses accounting for about 10 per cent of total foodgrains. Throughout this paper foodgrains refer to only cereals.

2. The total availability of foodgrains in a given period is defined as net availability = Gross Production *minus* allowance for non-food use *plus* net imports *plus* or *minus* changes in Government stock.

3. For a detailed discussion on the reliability of NSS data, see M. S. Ahluwalia, "Rural Poverty in India: 1956/57 to 1973/74", *India: Occasional Papers*, World Bank Staff Working Paper No. 279, The World Bank, Washington, D.C., 1978. See also P. S. George, "Inequalities in Consumption—Some Problems in Measurement and Interpretation", IFPRI Staff Working Paper 77 : 33, International Food Policy Research Institute, Washington, D.C., 1977 and M. Mukherjee and G. S. Chatterjee, "On the Validity of N.S.S. Estimates of Consumption Expenditures", in T. N. Srinivasan and Pranab K. Bardhan (Eds.): *Poverty and Income Distribution in India*, Statistical Publishing Society, Calcutta, 1974, pp. 139-147.

and elasticities.⁴ The changes in expenditure pattern and income distribution are analysed using data from these three Rounds along with data from some other Rounds where only per capita expenditure data are reported. The analysis also attempts to measure the impact of changes in consumer prices and per capita income on consumption levels.

CHANGES IN PER CAPITA CONSUMPTION

Rural Areas

Between 1961-62 and 1973-74, the per capita monthly consumption of all cereals in the rural areas declined from 17.53 kg. to 15.09 kg., indicating a fall of 13.9 per cent. This fall in cereal consumption was the net result of a decline in the consumption levels of rice (21.3 per cent), jowar (16.1 per cent), and other cereals (45.5 per cent); and an increase in the consumption levels of wheat (33.4 per cent) and bajra (43.9 per cent).

The NSS data for different Survey Rounds are reported according to current expenditure classes. The boundaries of the class interval for different Survey Rounds are not strictly comparable.⁵ Because of this difficulty in correlating the per capita consumption level of one expenditure class of 1961-62 with a corresponding expenditure class of 1973-74, the consumption levels of consumers belonging to the bottom and top quartile expenditure groups were derived.⁶ The derived consumption levels indicated a slight increase (1.1 per cent) in the consumption of cereals in the bottom quartile and a fall of 16.1 per cent in the top quartile. However, between 1964-65 and 1973-74, a fall in consumption was experienced in both the bottom and top quartiles. Consumers belonging to both those quartiles had made reductions in the per capita consumption of rice, jowar and bajra. The reduction in consumption levels of these items was totally compensated in the bottom quartile by the increase in consumption levels of wheat and bajra, but it was only partially compensated in the top quartile. Here it is also worth pointing out that the percentage increase in wheat consumption in the bottom quartile was much higher than the corresponding increase in the top quartile, and this may be due to the substantially higher initial level of wheat consumption in the top quartile as compared to the bottom quartile.

The changes in the consumption levels in the bottom and top quartiles had also contributed towards some reductions in the quartile consumption ratio.⁷ While the quartile consumption ratio for all cereals was 2.16 during

4. Here it should be pointed out that the data available from various NSS Rounds are not strictly comparable. This non-uniformity introduces some problems in analysing inter-temporal shifts in consumption pattern.

5. For example, the first expenditure class in 1961-62 Survey is Rs. 0-8 and the first expenditure class in 1973-74 Survey is Rs. 0-13. These two expenditure classes may not correspond to the same expenditure group.

6. Since the expenditure classes corresponding to these quartiles were not exactly the same as the expenditure groups corresponding to the NSS data, some approximations were necessary to identify the expenditure classes corresponding to each quartile. Throughout this paper, the bottom quartile refers to the consumers in the lowest 25 per cent expenditure categories and the top quartile refers to the consumers in the highest 25 per cent expenditure categories.

7. The quartile consumption ratio is defined as q_4/q_1 where q_4 is the per capita consumption in the top quartile and q_1 is the per capita consumption in the bottom quartile.

1961-62, it was reduced to 1.86 during 1964-65 and to 1.79 during 1973-74. The reductions in the quartile consumption ratio were observed for all cereal items; for rice from 2.04 to 1.80, for wheat from 5.40 to 3.72, for jowar from 1.01 to 0.77, for bajra from 2.27 to 1.83 and for other cereals from 2.16 to 1.79.

TABLE I—PER CAPITA MONTHLY CONSUMPTION OF CEREALS IN RURAL AND URBAN AREAS:
1961-62 TO 1973-74

(kg.)

Cereals	Per capita consumption in rural areas			Per capita consumption in urban areas		
	1961-62	1964-65	1973-74	1961-62	1964-65	1973-74
Bottom quartile						
Rice	5.62	5.82	4.93	4.60	4.39	4.48
Wheat	1.11	1.33	1.76	3.16	3.50	3.18
Jowar	2.01	1.74	1.75	1.76	1.10	1.27
Bajra	0.51	0.56	0.83	0.24	0.44	0.63
Other cereals	2.08	2.39	2.04	0.96	0.52	0.46
Total cereals	11.19	11.84	11.31	10.72	9.95	10.02
Top quartile						
Rice	11.48	10.23	8.87	7.22	5.92	5.64
Wheat	5.99	5.58	6.54	5.29	5.74	5.28
Jowar	2.03	1.89	1.35	0.48	0.33	0.30
Bajra	1.16	1.80	1.54	0.28	0.17	0.16
Other cereals	3.53	2.52	2.00	0.30	0.16	0.14
Total cereals	24.19	22.02	20.30	13.57	12.32	11.52
All consumers						
Rice	8.77	8.13	6.90	6.14	5.61	5.38
Wheat	2.64	2.74	3.52	4.10	4.43	4.32
Jowar	1.93	1.85	1.62	1.20	0.78	0.86
Bajra	0.82	1.06	1.18	0.34	0.42	0.44
Other cereal	3.37	2.41	1.87	0.69	0.41	0.32
Total cereals	17.53	16.19	15.09	12.47	11.65	11.32

Urban Areas

Between 1961-62 and 1973-74, the per capita monthly consumption of all cereals in the urban area declined by 9.2 per cent from its 1961-62 level of 12.47 kg. This decline in total cereal consumption was the net result of a decline in the consumption of rice (12.4 per cent), jowar (28.3 per cent) and other cereals (53.6 per cent); and an increase in the consumption levels of wheat (5.4 per cent) and bajra (29.4 per cent).

Between the bottom and top quartiles, the fall in per capita consumption in the top quartile was higher than the corresponding fall in the bottom quartile. Although the per capita consumption of cereals in the top quartile diminished by 15.1 per cent, the consumption in the bottom quartile had diminished by only 6.5 per cent. All commodities experienced a decline in consumption levels in the top quartile, but in the bottom quartile, the decline

in consumption levels was confined to rice, jowar and other cereals. The per capita consumption of consumers belonging to the top quartile, and of the total population declined during the sub-periods 1961-62 to 1964-65 and 1964-65 to 1973-74. However, in the bottom quartile, the fall in per capita consumption during 1961-62 to 1964-65 was partially offset by a slight increase in consumption during 1964-65 to 1973-74.

The quartile consumption ratio of cereals declined marginally from 1.27 in 1961-62 to 1.24 in 1964-65 and it further declined to 1.15 in 1973-74. The decline was observed for all commodities—rice from 1.57 in 1961-62 to 1.26 in 1973-74, wheat from 1.86 to 1.66, jowar from 0.27 to 0.24, bajra from 1.17 to 0.25 and other cereals from 0.31 to 0.30.

A comparison of the food consumption pattern in the urban and rural areas indicate some interesting results. In the rural areas coarse grains accounted for about one-third of the cereal consumption. From 1961-62 to 1973-74, the share of coarse grains has slightly declined from 34.9 per cent to 30.9 per cent. In the urban areas, coarse grains accounted for less than half its share in the rural areas. Here again, there was a fall in the share of coarse grains from 17.9 per cent during 1961-62 to 14.3 per cent during 1973-74.

The share of coarse grains for urban consumers in the bottom quartile was somewhat similar to the share of coarse grains for the rural consumers in the top quartile. The share of coarse grains for consumers belonging to the top quartile in the rural areas was more than half the corresponding share in the bottom quartile in the rural areas. However, the share of coarse grains for consumers belonging to the top quartile in the urban areas was only about one-fourth of the corresponding share in the bottom quartile in the urban areas.

The rural-urban per capita consumption ratio of cereals declined from 1.41 during 1961-62 to 1.39 during 1964-65 and it further declined to 1.33 during 1973-74. The changes in this ratio for the bottom and top quartiles indicate that most of the adjustments had taken place in the middle quartiles (second and third quartiles).⁸

The per capita consumption data also indicated that the average per capita consumption for all consumers in the urban areas remained more or less the same as the per capita consumption of cereals in the bottom quartile among the rural consumers. However, the composition of superior and inferior grains in total cereals in these two categories differed very much.

URBAN-RURAL PRICE DIFFERENTIALS⁹

The urban-rural price differentials are influenced by three major factors: handling costs and marketing margins, composition and quality differences

8. This is mainly because the ratio remained at somewhat constant levels in the top quartile (1.78, 1.79 and 1.76 respectively during 1961-62, 1964-65 and 1973-74) and it increased in the bottom quartile from 1.04 during 1961-62 to 1.19 during 1964-65 before dropping to 1.13 during 1973-74.

9. Throughout this paper, the consumer price refers to the price derived from the expenditure and quantity data available from the NSS.

among cereals, and extent of public distribution arrangements. These three factors influence the urban-rural price difference in somewhat different directions. The effect of handling costs and marketing margins as well as the higher proportion of coarse grains in the rural diet is to widen the gap between urban and rural prices.¹¹ At the same time, the subsidised public distribution system, mostly in the urban areas, reduces the urban prices, and thereby narrows down the gap between urban and rural prices.

The prices paid by consumers in the urban and rural areas obtained from 1961-62, 1964-65 and 1973-74 NSS data (Table II) indicate that the combined positive influence of the first two factors on the gap between urban and rural prices for total cereals was higher than the negative influence of the third factor. The urban price of cereals was above the rural price by 16 per cent during 1961-62, by 6 per cent during 1964-65, and by 10 per cent during 1973-74. The lower percentage gap during 1964-65 was mainly influenced by the behaviour of wheat prices. Wheat, accounting for 38 per cent of the total cereals consumed in the urban areas, was the major commodity distributed through the public distribution system. The price of wheat for urban consumers during 1964-65 was 6 per cent below the price for rural consumers, which indicates that the marketing margins on local wheat was more than offset by the lower prices of wheat distributed through the public distribution system. The impact of the public distribution system can also be observed during 1973-74 when the wheat price in the urban areas was only about 5 per cent above the rural price, as compared to an average difference of 10 per cent for all cereals. While the price of all cereals in the rural areas went up by 40 per cent from 1961-62 to 1964-65, in the urban areas the increase was only 28 per cent. Also, between 1961-62 and 1973-74, the price of cereals in the rural areas went up by 210 per cent as against an increase of 195 per cent in the urban areas. Thus, throughout this period the price increase in the urban areas remained below the rate of increase in the rural areas.

TABLE II—CONSUMER PRICES OF CEREALS IN URBAN AND RURAL AREAS

Cereals	1961-62			1964-65			1973-74		
	Rural (paise/kg.)	Urban (paise/kg.)	Urban- rural ratio (per cent)	Rural (paise/kg.)	Urban (paise/kg.)	Urban- rural ratio (per cent)	Rural (paise/kg.)	Urban (paise/kg.)	Urban- rural ratio (per cent)
Rice	58	67	116	77	84	109	181	196	108
Wheat	47	51	108	66	62	94	139	146	105
Jowar	38	43	113	58	64	110	127	137	108
Bajra	41	47	115	60	67	112	114	130	114
Other cereals ..	37	41	111	56	61	109	120	131	109
Total cereals ..	49	57	116	69	73	106	152	168	110

10. The proportion of coarse grains in total foodgrains during 1961-62 was 34.9 per cent and 17.9 per cent in the rural and urban areas respectively. During 1964-65, this percentage was 32.9 in the rural areas and 13.8 in the urban areas. By 1973-74, the coarse grains accounted for 30.9 per cent of total cereals in the rural areas and 14.3 per cent in the urban areas.

DIFFERENCE IN CONSUMER PRICES AMONG INCOME GROUPS

The procedure used to determine consumer expenditure in the cross-section surveys often assumes that the price of a given commodity remains constant for all consumers. However, the cereal prices for consumers belonging to different income groups are likely to be different because of quality difference, mode of purchases (frequency, location, bulk...), composition of different commodities in total cereals and extent of purchases from the public distribution system.

In order to study the variations in prices among consumers belonging to different income groups, the prices paid by the consumers belonging to the bottom and top quartiles were obtained from 1961-62, 1964-65 and 1973-74 data. The following broad conclusions emerge from this analysis:

1. The price of all cereals for consumers in the top quartile was substantially higher than the price for consumers in the bottom quartile in both the urban and rural areas.

2. Between the urban and rural consumers, the ratio between the prices in the top and the bottom quartiles in the urban areas was higher than the corresponding ratio in the rural areas. If the price difference between the top and bottom quartile is assumed to be an indicator of the quality difference, the quality difference in grains was more predominant in the urban areas than in the rural areas.

3. The urban-rural price ratio in the top quartile was higher than the corresponding ratio in the bottom quartile. As pointed out earlier, the quality difference in grains leads to a higher quartile ratio in the urban areas than in the rural areas. At the same time, because of the operations of the public distribution system, the difference between the urban and rural prices for consumers belonging to the bottom quartile is less than the corresponding difference for the consumers belonging to the top quartile. This is mainly because the open market price of foodgrains remained at a higher level than the ration price, and most of the consumers belonging to the top quartile tend to purchase grains from the open market.

4. There were changes in the quartile price ratio and urban-rural price ratio from 1961-62 to 1973-74. The urban-rural price ratio for the bottom quartile showed a continuous decline from 1.08 during 1961-62 to 1.02 during 1964-65, and to 0.99 during 1973-74. For consumers belonging to the top quartile, there was a mixed trend, a decline from 1.23 during 1961-62 to 1.05 during 1964-65, and then an increase to 1.15 during 1973-74. The quartile price had an increasing trend in both the urban and rural areas. However, the rate of growth in the quartile price ratio between 1964-65 and 1973-74 in the urban areas was much higher than the corresponding rate of growth in the rural areas. A partial explanation for this difference is provided by the changes in the composition of commodities, especially the changing share of coarse grains in total cereals.

5. It was pointed out earlier that the operations of the public distribution system resulted in lower wheat prices in the urban areas as compared

to the rural areas. The price of cereals for consumers belonging to the bottom and top quartiles indicates that during 1961-62, wheat price in the urban areas was higher than the price in the rural areas for all consumers. However, as the public distribution of wheat expanded in the urban areas through PL 480 supplies, wheat price in the urban areas had fallen below the price in the rural areas. By 1973-74, the price of wheat for consumers belonging to the bottom quartile in the urban areas was below the price of wheat for rural consumers in the bottom quartile. However, in the top quartile, the price of wheat in the urban areas was higher than the price in the rural areas. Thus it can be concluded that the urban low income consumers derived the benefits of the public distribution system.

CHANGES IN CONSUMER PRICES OVER TIME

Between 1961-62 and 1973-74, the consumer price of cereals increased by 210 per cent in the rural areas and by 195 per cent in the urban areas. When the period 1961-62 to 1973-74 is sub-divided, the nature of changes in the rural and urban areas prior to 1964-65 and afterwards indicates different trends. During the period 1961-62 to 1964-65, the increase in the price of cereals in the rural areas exceeded the corresponding increase in the urban areas. However during the period 1964-65 to 1973-74, the increase in cereal price in the rural areas was less than the corresponding increase in the urban areas. One of the major factors responsible for the difference between the price increase in the rural and urban areas is the behaviour of wheat price. From 1961-62 to 1964-65, the price of wheat increased by 40 per cent in the rural areas as against an increase of 22 per cent in the urban areas. However from 1964-65 to 1973-74, wheat price in the rural areas went up by 111 per cent as against an increase of 135 per cent in the urban areas. The difference in the growth rate of wheat price in the urban and rural areas can be explained by the price of wheat supplied through the public distribution system. The issue price of wheat was a low rate of Rs. 37.51 per quintal during 1964-65, and during 1973-74 the issue price of wheat increased substantially (from Rs. 84 to Rs. 96 in November 1973 and from Rs. 96 to Rs. 125 in April 1974).

CHANGES IN PER CAPITA EXPENDITURE

The changes in per capita expenditure over time reflect the changes in both the quantities consumed and the general price levels. The changes in quantities are influenced by the changes in income levels, relative prices, and consumer preference. The changes in per capita expenditure on individual commodities have an effect on the relative importance of these commodities as measured by their expenditure proportion.

As Table III indicates, between 1961-62 and 1973-74 the per capita monthly expenditure at current prices in the rural areas went up by 144 per cent. However, when the consumer price index for agricultural labourers was used as an indicator of the price levels in the rural areas, it was observ-

TABLE III—PER CAPITA MONTHLY CONSUMER EXPENDITURE AND EXPENDITURE PROPORTIONS IN RURAL AREAS: 1955 TO 1973-74

Items of expenditure	Per capita monthly expenditure					Increase between 1961-62 to 1973-74 (per cent)
	1955	1961-62	1963-64	1964-65	1973-74	
	(Rupees)					
<i>(a) Consumer expenditure</i>						
Rice		5.06	5.19	6.28	12.46	146.2
Wheat		1.23	1.37	1.80	4.90	298.2
Jowar		0.73	0.76	1.08	2.06	182.2
Bajra		0.34	0.40	0.64	1.34	294.0
Other cereals		1.24	1.23	1.35	2.24	83.0
All cereals	5.71	8.60	8.95	11.15	23.00	167.4
Total food	10.10	14.93	15.72	19.29	39.70	165.9
Total non-food	5.10	6.80	6.69	7.15	13.31	95.7
All commodities	15.20	21.73	22.41	26.44	53.01	143.9
Consumer expenditure at 1961-62 price		21.73	19.56	19.18	18.83	-13.3
<i>(b) Expenditure proportions (per cent)</i>						
Rice		23.3	23.2	23.8	23.5	
Wheat		5.6	6.1	6.8	9.2	
Jowar		3.4	3.4	4.1	3.9	
Bajra		1.6	1.8	2.4	2.5	
Other cereals		5.7	4.7	5.1	4.2	
All cereals	37.6	39.6	39.1	42.2	43.4	
Total food	66.4	68.7	70.1	73.0	74.9	
Total non-food	33.6	31.3	29.9	27.0	25.1	
All commodities	100.0	100.0	100.0	100.0	100.0	

ed that prices in the rural areas increased at a much faster rate than the increase in consumer expenditure.¹¹

The consumer expenditure at constant prices during 1973-74 indicated a decline of 13.9 per cent from the 1961-62 level, most of which took place between 1961-62 to 1963-64. However, the declining trend was common for all other intermediate years for which data are available. Among the individual cereals, the maximum increase in monthly per capita expenditure between 1961-62 to 1973-74 in the rural areas was for wheat (298.2 per cent) and it was followed by bajra (294 per cent).

The relatively larger increase in the consumer expenditure on cereals and food items implied an increase in their share of the total consumer expenditure. Between 1961-62 to 1973-74, the expenditure share on cereals

11. In situations involving deflators, there can be difference of opinion regarding the appropriate deflator. As Bardhan points out, it is highly improper to deflate private consumer expenditure data by the deflator for national income. Further, since there is some difference in the pattern of price movements between urban and rural areas, it is appropriate to deflate consumer expenditures in the rural areas with the consumer price index for the rural area. In the absence of a separate consumer price index for rural areas, the consumer price index for agricultural labourers is taken as the best approximation for the consumer prices in the rural areas.

went up from 39.6 to 43.4 per cent and the share of all food items went up from 68.7 to 74.9 per cent. This tendency of increased share of cereals and all food items in total expenditure is also consistent with the changes from 1955. The increase in expenditure share of all cereals reflected a substantial increase in the share of wheat; marginal increases for rice, jowar, and bajra and a decline in the share of other cereals. However, while the expenditure share of wheat indicated a substantial increase during 1964-65 to 1973-74, the expenditure share in rice, jowar and other cereals declined.

The monthly per capita consumer expenditure at current prices in the urban areas increased from Rs. 30.86 during 1964-65 to Rs. 70.77 during 1973-74 (Table IV). The increase in money expenditure (129.3 per cent) was less than the increase in the working class consumer price index, indicating a 9.7 per cent fall in consumer expenditure at constant prices. The fall in real consumer expenditure was experienced throughout the period, but the rate of decline from 1961-62 to 1964-65 was higher than the rate of decline from 1964-65 to 1973-74.

TABLE IV—PER CAPITA MONTHLY CONSUMER EXPENDITURE AND EXPENDITURE PROPORTIONS IN URBAN AREAS: 1955 TO 1973-74

Items of expenditure	Per capita monthly expenditure					Increase between 1961-62 to 1973-74 (per cent)
	1955	1961-62	1963-64	1964-65	1973-74	
	(Rupees)					
<i>(a) Consumer expenditure</i>						
Rice		4.13	4.09	4.75	10.56	155.7
Wheat		2.10	2.29	2.75	6.30	200.0
Jowar		0.51	0.45	0.50	1.18	131.4
Bajra		0.16	0.21	0.28	0.57	256.2
Other cereals		0.28	0.30	0.25	0.42	50.0
All cereals	5.33	7.18	7.34	8.53	19.03	165.0
Total food	13.68	18.58	19.57	22.68	47.93	158.0
Total non-food	10.01	12.28	13.24	13.35	22.84	86.0
All commodities	23.69	30.86	32.81	36.03	70.77	129.3
Consumer expenditure at 1961-62 price		30.86	29.37	28.64	27.87	-9.7
<i>(b) Expenditure proportions</i>						
		(per cent)				
Rice		13.4	12.5	13.2	14.9	
Wheat		6.8	7.0	7.6	8.9	
Jowar		1.6	1.4	1.4	1.7	
Bajra		0.5	0.6	0.8	0.8	
Other cereals		1.0	0.9	0.7	0.6	
All cereals	22.5	23.3	22.4	23.7	26.9	
Total food	57.7	60.2	59.6	62.9	67.7	
Total non-food	42.3	39.8	40.4	37.1	32.3	
All commodities	100.0	100.0	100.0	100.0	100.0	

The increase in consumer expenditure was maximum for bajra (256 per cent), followed by wheat (200 per cent) and rice (156 per cent); and it was least for other cereals (50 per cent.) The expenditure on all food items increased by 158 per cent.

As in the rural areas, the large increase in consumer expenditure on food in general, and on cereals in particular, implied an increase in the share of these items in the total expenditure. In 1955 the expenditure share on cereals was 22.5 per cent, and it increased to 23.3 per cent during 1961-62, to 23.7 per cent during 1964-65, and to 26.9 per cent during 1973-74. Similarly, the share of expenditure on all food items in the total expenditure increased from 57.7 per cent in 1955 to 60.2 per cent during 1961-62, to 62.9 per cent during 1964-65, and to 67.7 per cent during 1973-74. From 1961-62 to 1973-74, the expenditure share increased for rice, wheat, jowar and bajra and it declined for other cereals. The nature of changes in the expenditure proportion of individual cereal items from 1961-62 to 1973-74 was also the same for the sub-period 1964-65 to 1973-74.

A comparison of the urban and rural growth in per capita expenditure and changes in the expenditure proportion of different items leads to the following observations:

First, the per cent of increase in per capita expenditure on cereals from 1961-62 to 1973-74 in both the urban and rural areas exceeded the per cent of increase in per capita expenditure on total food. While the rates of growth of expenditures on all cereals and on food items in the rural and urban areas were more or less comparable during the period 1961-62 to 1973-74, the rate of growth in expenditure on cereals during the period 1964-65 to 1973-74 in the urban areas was higher than the corresponding growth in the rural areas.

Second, the share of expenditures on cereals and on all food items in total expenditure increased in both the rural and urban areas. While in the rural areas, the increase in expenditure on wheat was the major contributing factor, in the urban areas rice and wheat contributed to this increase.

CHANGES IN INCOME DISTRIBUTION

The changes in the distribution of households in different expenditure classes from 1955 to 1973-74 reflect two factors—an increase in the general price level and a general improvement in the income distribution of the families.¹² A comparison of the changes in income distribution can be made only after isolating the influence of an increase in the general price level on the reported distribution of households in different expenditure categories. Burk¹³ has suggested a procedure by which the reported distribution of households in different expenditure categories during one time period can be adjusted for price changes. Using Burk's procedure the 1973-74 distribution was adjusted for price changes between the period 1955 to 1973-74 and between 1964-65 to 1973-74.

12. This is true only to the extent that changes in the expenditure pattern reflect changes in income. Bardhan points out that since the current income is often subject to more transient factors, the distribution of consumption expenditure is sometimes regarded as a better proxy for permanent income distribution. See Bardhan in *Poverty and Income Distribution in India*, *op. cit.*

13. See M. C. Burk: *Measures and Procedures for Analysis of U. S. Food Consumption*, USDA Agricultural Handbook 206, Washington, D. C., 1961. Also see P. S. George and G. A. King: *Consumer Demand for Food Commodities in the United States with Projections for 1980*, Giannini Foundation Monograph No. 26, University of California, Berkeley, 1971.

The results of this analysis indicate the following broad tendencies:

(1) Between 1955 to 1973-74, there has been some improvement in the income levels in the rural areas, especially in the two bottom expenditure groups. In 1955, about 38 per cent of the population belonged to the first two groups (monthly per capita expenditure less than Rs. 11) and the corresponding percentage was reduced to about half this level in 1973-74. The reduction in these two groups had influenced an upward movement in the percentage of population belonging to all the subsequent expenditure groups.

(2) As compared to the substantial reduction in the percentage of rural population belonging to the first two groups during 1955 to 1973-74, the changes in the urban areas were only marginal. Here the upward movement from the low income groups was less significant than the downward movement from the upper income groups.

(3) Between 1964-65 to 1973-74, the changes in the proportion of households belonging to different income groups in both the urban and rural areas did not indicate any definite pattern. However, it is possible to infer that the proportion of low income households in the rural areas has slightly increased; for example during 1964-65, 23 per cent of the population had a per capita monthly expenditure below Rs. 18, but the 1973-74 distribution adjusted for price changes has a corresponding percentage of 27.4, indicating some increase in the percentage of low income population. At the same time, the distribution of households in the urban areas indicates a very slight improvement in urban income distribution. Thus, though the data for the rural and urban areas do not show any major changes in income distribution during 1964-65 to 1973-74, there is evidence that the income distribution in the rural areas had not improved and at the same time the distribution in the urban areas has not deteriorated.

CHANGES IN ELASTICITIES

The changes in commodity composition and price levels have an impact on the expenditure elasticity and quantity elasticity. Since the difference between these two elasticities can be interpreted as a measure of quality elasticity, it is also possible to analyse the changes in quality elasticity.¹⁴

In order to obtain the expenditure and quantity elasticities in different expenditure groups the relationship between expenditure (and quantity) on cereals and total expenditure was estimated using the functional form

$$\log q = a + \frac{b}{x} + c \log x$$

where q = per capita expenditure on cereals or quantity consumed, and x = per capita total expenditure. From the estimated expenditure and quantity elasticities for different expenditure groups, the elasticities corresponding to the bottom quartile, top quartile and the total sample were obtained. The results of this analysis, summarised in Table V, indicate the following broad changes in elasticities:

14. Expenditure elasticity = quality elasticity + quantity elasticity.

TABLE V—EXPENDITURE, QUANTITY AND QUALITY ELASTICITIES OBTAINED FROM 1961-62, 1964-65 AND 1973-74 SURVEYS

	Bottom quartile			Top quartile			All consumers		
	1961-62	1964-65	1973-74	1961-62	1964-65	1973-74	1961-62	1964-65	1973-74
Rural areas									
Expenditure elasticity ..	.720	.783	.847	.453	.425	.334	.545	.555	.517
Quantity elasticity ..	.704	.661	.668	.368	.351	.252	.482	.471	.354
Quality elasticity ..	.016	.122	.179	.085	.074	.082	.063	.084	.163
Urban areas									
Expenditure elasticity ..	.540	.549	.685	.076	.029	.129	.238	.337	.395
Quantity elasticity ..	.403	.455	.492	.024	.044	.011	.184	.253	.209
Quality elasticity ..	.137	.094	.193	.100	.073	.140	.054	.084	.186

From 1961-62 to 1973-74, for all consumers in the rural areas, there had been a decline in expenditure elasticity and quantity elasticity. However, since the decline in quantity elasticity was much higher than the decline in expenditure elasticity, there was an increase in quality elasticity. Among the consumers belonging to the top quartile, the declines in expenditure elasticity and quantity elasticities were more or less the same, so that the quality elasticity remained the same. At the same time, for consumers belonging to the bottom quartile, there was an increase in expenditure elasticity and a fall in quantity elasticity, resulting in an increase in quality elasticity.

In the urban areas, from 1961-62 to 1973-74, both the expenditure elasticity and quantity elasticity had increased. However, the increase in expenditure elasticity was higher than the increase in quantity elasticity, resulting in an increase in quality elasticity. While the expenditure elasticity increased during 1961-62 to 1964-65 and during 1964-65 to 1973-74, the quantity elasticity increased during 1961-62 to 1964-65, but declined during 1964-65 to 1973-74. For consumers belonging to the bottom quartile, from 1961-62 to 1973-74, the expenditure elasticity and quantity elasticity had increased during both the sub-periods, but the quality elasticity declined during 1961-62 to 1964-65. The decline in quality elasticity during 1961-62 to 1964-65 was more than offset by the increase during 1964-65 to 1973-74. All the elasticities for the urban consumers belonging to the top quartile had increased from 1961-62 to 1973-74, but the changes from 1961-62 to 1964-65 and from 1964-65 to 1973-74 were in the opposite direction.

CONSISTENCY OF CHANGES IN CONSUMPTION LEVELS WITH CHANGES IN INCOME AND PRICES

It was pointed out that the NSS data indicated a fall in per capita consumption of cereals. Since the cereal prices and consumer incomes are two important variables influencing the per capita consumption of cereals, the influence of these two variables on the consumption levels was analysed. The analysis was carried out from two angles:

- (1) To estimate the price elasticity consistent with changes in quantities consumed and income levels. For this purpose, it was assumed that the changes in cereal consumption were influenced only by price and income changes. When an income elasticity is assumed the price elasticity can be determined.
- (2) To estimate the extent to which the changes in income and price levels can explain the changes in the quantities consumed. In this case, the income and price elasticities were assumed at certain levels and the extent of changes in consumption due to the changes in prices and income was estimated. The deviations of the observed consumption level from the estimated consumption level can be attributed to other variables such as changes in relative prices of other commodities, income distribution and consumer preference.

As noted earlier, between 1961-62 and 1973-74, the per capita monthly consumption in the urban areas declined from 12.47 kg. to 11.32 kg. and in rural areas from 17.53 kg. to 15.09 kg. During the same period the consumer price of cereals increased from Re. 0.57 per kg. to Rs. 1.68 in the urban areas, and from Re. 0.48 to Rs. 1.52 in the rural areas. In order to compare the changes in per capita expenditure and the relative prices of cereals, the expenditure in 1973-74 was expressed at 1961-62 price level using the consumer price index for urban and rural areas. Similarly, the expenditure on cereals in 1973-74 was brought down to the 1961-62 price levels using the food price index.¹⁵ The analysis leads to the following conclusions:

1. To the extent the changes in consumer expenditure based on NSS data reflect the changes in consumer income, between 1961-62 to 1973-74, the real income declined by 9.7 per cent in the urban areas and by 13.3 per cent in the rural areas.¹⁶

15. In a strict sense, changes in cereal price index should have been used. However, since cereal price index was not available for urban and rural areas separately and since cereals accounted for a major portion of food items, food price index was used.

16. It should be pointed out that this result is not consistent with the growth in per capita national income. The difference could be on account of the methodology used in determining the per capita national income at constant prices or because of the deflator used in the analysis. Srinivasan and others consider that the difference is on account of the deflators used. Commenting on the estimates of consumption at current prices from NSS and national accounts, they observe: "while the estimates of consumption at current prices derived from National Income and NSS data are in close agreement for the period 1954-55 to 1963-64, the estimates of real consumption differ substantially. This is essentially a reflection of the differences in the deflators used to adjust current price consumption for price changes. The National Income deflator implies a much slower increase in prices up to 1960-61 than the index applied to the NSS series. The latter is in principle superior because it approximates more closely to an index of consumer prices".

2. Compared to the increase in general price levels, the real price of cereals increased by 7.1 per cent in the urban areas and by 10.6 per cent in the rural areas.

3. The reported fall in per capita consumption in the urban areas (—9.2 per cent) is consistent with an income elasticity of .21 and a price elasticity¹⁷ of —1.0.

4. The fall in per capita consumption in the rural areas was 13.9 per cent. When an income elasticity of 0.41 is used, the implied price elasticity corresponding to the fall in cereal consumption in the rural areas was —0.80.

5. Since both the price elasticities implied in (3) and (4) above are somewhat higher than a *priori* expected levels, the changes in consumption levels consistent with a price elasticity of —0.3 in the urban areas and —0.5 in the rural areas were estimated.¹⁸ According to this estimate, the changes in income and price levels during 1961-62 to 1973-74 can explain about half the fall in consumption in the urban areas and about three-fourths of the fall in the rural areas.

A break-up of the period 1961-62 to 1973-74 into two sub-periods at 1964-65 indicated that the conclusions obtained for the total period were also true for the sub-periods. However, in the urban areas, only a very small proportion of the fall in consumption levels between 1961-62 and 1964-65 can be explained through price and income changes. At the same time, it appears that a major portion of the fall in consumption levels in the rural areas between 1961-62 and 1964-65 can be explained by these two variables. Between 1964-65 and 1973-74, the changes in price and incomes can explain about 60 per cent of the fall in consumption levels in both the urban and rural areas.

CONCLUSIONS AND POLICY IMPLICATIONS

While drawing conclusions from this study, it should be emphasized that the data used in the analysis and the partial nature of the analysis introduce a number of limitations. It is possible to question the validity of conclusions based on comparisons of data from a few end points. Though such comparisons are not reliable measures of the underlying trends in the consumption pattern, so long as the periods are not unusual, these comparisons can provide some indications of the change over the interval. The data from the NSS used in this analysis are an important source of evidence for analysing the structural changes in the consumption pattern. However, these data alone will neither provide any conclusive evidence on the factors influencing the change, nor lead to a set of viable policy options to affect further changes in the structure, particularly those affecting the consumption levels of low income consumers. At the same time, the findings from this study

17. The price elasticity was derived from the changes in consumption levels, income levels and price levels using an income elasticity of .21 which corresponds to the average quantity elasticities during 1961-62 and 1973-74.

18. For example, the National Council of Applied Economic Research had obtained a price elasticity of —.34 for foodgrains in India. Considering the fact that price elasticity in the rural areas is likely to be higher than in the urban areas and that the estimated quantity elasticities in Table V are close to —.3 and —.5, these levels are used.

can be used in conjunction with a number of other evidences on productivity, employment, and incomes to suggest policy measures to increase the food intake of consumers belonging to the low income groups.

The main conclusions of this study are listed below:

Between 1961-62 to 1973-74, the per capita consumption of cereals declined by 13.9 per cent in the rural areas and by 9.2 per cent in the urban areas. In the rural areas, the consumption levels of cereals in the bottom quartile remained more or less constant, but the top quartile had made substantial reductions. In the urban areas, there were reductions in all quartiles. Among the individual commodities, there was an increase in the per capita consumption of wheat and bajra in both the rural and urban areas in all quartiles, except the top quartile in the urban areas. The data from 1964-65 consumption survey also confirm the declining tendency in per capita consumption.

The consumer price of cereals, between 1961-62 to 1973-74, increased at a faster rate than the increase in general prices. However, the rate of increase of prices in the urban areas remained below the rate in the rural areas. Between the bottom and top quartiles, the price of all cereals for consumers in the top quartiles was above the price for consumers in the bottom quartile. The urban-rural price ratio in the top quartile was higher than the corresponding ratio in the bottom quartile. The quartile price ratio increased in both the urban and rural areas. Among the individual commodities, bajra and wheat had a relatively lower rate of increase in prices in both the urban and rural areas.

Although the consumer expenditure at current prices had gone up in both the urban and rural areas, when allowances were made for price increases, there was a fall of 13.3 per cent in per capita expenditures in the rural areas and of 9.7 per cent in per capita expenditures in the urban areas.

It was observed that the expenditure proportion on all cereals went up from 37.6 per cent in 1955 to 43.4 per cent during 1973-74 in the rural areas, and from 22.5 per cent to 26.8 per cent in the urban areas during the corresponding period. Between 1961-62 and 1973-74, in both the urban and rural areas, the expenditure proportion on rice remained more or less stable, but the expenditure proportion on wheat had gone up substantially.

In the rural areas, there had been some improvements in the income levels of the poor between 1955 and 1964-65, but there was no appreciable change between 1964-65 and 1973-74. In the urban areas, there had been only marginal changes during both the above periods.

Between 1961-62 and 1973-74 in the rural areas, there had been a decline in both expenditure elasticity and quantity elasticity, but an increase in quality elasticity of cereals. While the quality elasticity remained more or less constant for the top quartile, there had been an increase in quality elasticity for the bottom quartile. In the urban areas, all the elasticities increased.

The changes in income and price levels during 1961-62 to 1973-74 can explain about half the fall in per capita consumption of cereals in the urban areas and about three-fourths of the fall in the rural areas.

The above findings can be used to draw the following broad policy implications:

The changes in income and prices during 1961-62 to 1973-74 explain a major portion of the changes in consumption levels of cereals during this period. Whether or not these variables can explain the reported fall in per capita consumption in the subsequent years, despite increased agricultural production, needs careful analysis.¹⁹ An analysis of the consumer survey data from the 32nd Round covering 1977-78 would probably provide an answer to this question.

The changes in income distribution indicate no decline in the percentage of low income consumers, especially in the rural areas between 1964-65 to 1973-74. The data for individual States analysed elsewhere indicate that the situation is no different even in a State like Punjab where substantial agricultural growth has taken place during this period.²⁰ Therefore, it is important to analyse whether the observed absence of reduction in income inequalities is on account of the inability of achieving distributive justice through growth-oriented policies or because of the possibility that the process of raising income levels of low income consumers through growth linkages of agricultural development may involve a long gestation period.²¹ Considering the high income elasticity of foodgrains for low income consumers, both from the point of view of increasing the consumption levels of the poor and from the point of raising the effective demand necessary for achieving sustained agricultural development, it is important to obtain a satisfactory answer to this question. An answer to this question will also suggest whether an agricultural development strategy can be relied upon as an effective measure for alleviating poverty or not.

The tendency among both urban and rural consumers belonging to the low income groups to increase the share of coarse grains in the total cereal consumption raises the interesting possibility of improving the nutrition levels of low income consumers. However, one could raise an objection to this on the ground that the choices under poverty conditions should not be taken as a basis for welfare programmes.

The observed constant levels of per capita consumption of low income consumers in the urban areas, in spite of a decline in per capita consumption in all other categories, can be interpreted as a measure of the success of public distribution of foodgrains in the urban areas. The subsidised public distribution was mainly responsible for the relatively slow growth in consumer prices for the low income consumers in the urban areas, and this slow growth could help them to maintain their consumption levels at the earlier levels.

19. For a discussion of the nature of fall in per capita consumption in the subsequent years, see J. S. Sarma and S. Roy: *Behaviour of Foodgrain Production and Consumption in India, 1960-1977*, World Bank Staff Working Paper No. 339, The World Bank, Washington, D. C., 1979.

20. See Ahluwalia, *op. cit.*

21. See John W. Mellor: *The New Economics of Growth: A Strategy for India and the Developing World*, Cornell University Press, Ithaca, New York, 1976.