Parity Pricing As An Approach to Price Support Programmes: A Policy Analysis

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The responsiveness of farm entreprenurs to changes in agricultural prices, even in a traditional agrarian setting, is well established. Research on Pakistan's agriculture by Afzal [1], and Gotsch and Falcon, [6] have shown that the response of farm producers to prices is positive and rational, and that they allocate their resources to crop and livestock activities under the influence of prices and other relevant economic parameters instead of being guided by sheer traditions. Desired development objectives in the farm sector can, therefore, be realized through judicious manipulation of the prices of farm products and farm inputs. Policy makers have quite a few options to obtain desired changes in agricultural prices. These options range from direct intervention in the marketing of agricultural produce and supplies, to price fixation, international trade regulation, and the like.

The design and the use of agricultural price policy depends on the nature of the objectives to be achieved. Objectives vary from country to country and from time to time depending on the national as well as the international economic situation in general and the performance of the agricultural sector in particular. In developed countries, the emphasis is mainly on the protection and security of farmers against the hazards of price instability. In developing countries like Pakistan, where the prime consideration is the transformation of traditional agriculture, price policy has to be basically production-oriented. A favourable relationship between the prices of farm products and farm inputs provides farm enterpreneurs a conducive environment for the adoption of new technologies which raises productivity. Similarly, relative prices of competing crops are adjustable in a way that results in the achievement of national production targets for various agricultural commodities.

Pakistan introduced a system of support prices in 1960. Initially, the Government was to enter the market only when the price of wheat fell below Rs. 13.50 per maund. Later on, rice, cotton and sugarcane were also included in the programme. Quite recently, the Government of Pakistan has also extended support prices to potatoes, maize, and onions.

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Despite much agreement on the utility and merits of price supports, the appropriate method for determining the level of support prices has yet to be devised. This paper presents analyses of two approaches to price support determination. These are: the cost of production approach; and the parity price approach. The parity price approach is then used to determine the desired support prices for selected farm products.

THE COST OF PRODUCTION APPROACH

In Pakistan, the cost of production approach has been used quite frequently. This approach aims at a reasonable rate of return to farm production. Empirical or schematic estimates of cost of production of various crops are generally used to work out a set of support prices for various crops that not only guarantee an attractive return to each crop activity but also establish a fair balance between the returns on competing crops.

In order to analyse the effectiveness of this approach in achieving the underlying objective, per acre profitability of major agricultural crops, based on 1976 prices, for a typical progressive Punjabi farmer have been worked out and the relative profitability is examined for each competing group based on the prevalent system of crop rotation. For this purpose, the period of crop rotation is taken as one year. Sugarcane is considered as a full year crop activity. On the other hand, either a combination of wheat and cotton or a combination of wheat and rice are considered as alternative possibilities. Thus three major combinations emerge. The relative profitability of each of these combinations is tabulated in Table 1.

Table 1

Profitability Under Domestic Prices

	Alternate Crop Combinations	Net Profit Per Acre (in Rupees)	
		Excluding land rent	Including land rent
1.	Wheat + Rice	1001.50	502.50
2.	Wheat + Cotton	1167.00	667.00
3.	Sugarcane	812.00	312.00

Source: Computed from data report in Appendix-I.

The table shows that the present support policy tilts the balance in favour of the wheat and cotton combination as it is the most profitable production alternative. The wheat and rice combination comes next in terms of profitability, and the sugarcane crop gets the lowest rank on the profitability scale. A relatively constant or declining acreage under sugarcane production[1] in the last several years vis-a-vis other competing crops especially wheat and rice, is mainly due to the declining profitability of sugarcane production. The seed-fertilizer revolution has led to better production alternatives for farmers especially to those who fall outside the sugarcane purchase area of the sugar mills. However, soil, climatic, and other agronomic conditions suited to a particular crop may hamper inter-crop substitution in certain areas. In such cases, farmers may not have any option but to grow sugarcane regardless of the level of profitability in other crops.

[1]The total acreage under sugarcane fell from 1,605 thousand acres in 1966-67 to 1,564 thousand acres in 1973-74. On the other hand the acreage under wheat and rice increased from 13,205 thousand acres to 15,105 thousand acres and from 3,483 to 3,736 thousand acres respectively during the same time period. We have taken the year 1966-67 since this year is said to be the first year of the spread of the green revolution in Pakistan.

Thus, cost of production is a good basis from the standpoint of guaranteeing adequate returns to the farmer. Although based on partially realistic cost of production estimates, policy makers in Pakistan seem to have revised a price package that besides ensuring an attractive rate of return, at least to progressive farmers in some of the regions, has also facilitated the development of cropping patterns that correspond to the planned national production targets. Nevertheless, it seems pertinent to emphasize the need for representative and improved cost of production data for policy use.

Farm production utilizes several resources which are not priced in the market place. The problem of valuation, particularly for labour and management inputs, makes it difficult to come up with unbiased cost estimates. In addition, the price of labour is also highly variable among regions and seasons depending on the degree of the labour constraint. This poses a problem regarding the selection of an appropriate estimate of cost of production for policy making.

Similarly, land rents constitute the single largest cost item in agricultural production. They may account for 25 to 40 percent of total production costs depending on the method of estimation. However, valuation of the land input in itself poses a serious problem particularly in situations where a land market does not exist and the rental charges either do not exist or are an imperfect index of the opportunity cost of land. In this case, the opportunity cost of land in its alternate uses is the logical basis for evaluating the land input.

Costs of production also vary considerably depending on the technology used. Setting prices low on the basis of new technology will discriminate against farmers using more highcost traditional technology with adverse equity effects, particularly if new inputs are highly subsidized and, or, if the bulk of the farmers do not have access to that technology. A careful analysis of costs is, therefore, necessary by farm size, type of technology, and region, on a regular basis to determine the level of support prices [10].

THE PARITY PRICE APPROACH

Whereas the method of parity price determination has been considerably refined ever since this concept became operational, the underlying objective continues to be essentially the same. That is, to provide a yard-stick designed to represent the "fair" price for the commodities which farmers produce in relation to the price of the commodities which they buy. Essentially, a parity price is an output price that will yield income which will buy the same quantity of other products as it would during some specified base period.

It is to be emphasized that the parity pricing approach contemplates only a minimum standard of living for farm families. Improvement is not ruled out. Better market environments and rapid diffusion of new farm innovations may provide higher income levels to farm entrepreneurs that may help them achieve a significant improvement in their living standards. Reversal in the purchasing power and in that way a decline in the standard of living is the antithesis of parity pricing philosophy; an improvement in the living standard is not.

Methodology

The first step in computing parity prices is to compute the prices received and the prices paid by farmers. These prices are then used to compute the index of prices received by farmers, and the index of prices paid by them.

Prices received.—Price multiplied by the total quantity of the commodity sold, would give the total amount received by all farmers for that commodity. That is, prices received by farmers are estimated to reflect sales of all classes and grades of the commodity being sold. Furthermore, in the case of certain products where various distinct varieties are produced and traded, necessary adjustment can be made in evaluating the product. Estimates relate generally to average annual prices farmers receive for their products at the point of first sale, usually a local market or a procurement centre. We have taken into account 16 items for the purpose of computing prices received by farmers.[2] The items included and their index numbers are given in Appendix-II.

Prices paid.—Estimates of prices paid by farmers relate to average prices of production inputs as well as consumption items that farmers buy. The total number of 20 items (as shown in Appendix-III is considered in the estimation of prices paid by farmers.[3] Since prices received by farmers reflect the sales of all classes and grades of the agricultural commodity being sold, a comparable concept is used in connection with prices paid. Prices paid also reflect the average annual price of items that farmers buy. The universe of enquiry for prices paid by farmer is conceptually the sum total of all purchase transactions by farmers to acquire the goods and services used for family living and farm production. Price data for most items were not easily available.

Index of prices received.—The index of prices received provided a composite measure of the average yearly change in prices of agricultural products. The index of prices received by farmers was computed with the following laspeyres index formula using 1959-60 as the base year.[4]

Index of prices paid.—The index of prices paid by farmers was developed to have a better measure of changes in prices of goods and services bought by farmers and to determine whether prices of farm products have stayed in step with the prices of commodities bought by farmers. The two most important components in this index are household commodities and production

[2]S.K. Qureshi [22] suggests movements in prices in marketing towns are good index of corresponding movements of prices paid to farmers in the villages.

[3]We do realize that items like transistor radios, watches and electric goods (where electricity is available) furniture, sewing machines, and other durable consumer goods are item in the consumption basket. We have excluded these from the list of items that farmers buy because price data was not available.

[4]The laspeyres index formula is:

$$I = \Sigma \left(\frac{Pi_1}{pi_o} Wi_o \right) \quad (100) \quad i = 1, -n.$$

[5]Where I = Index for a particular group or sub-group
Pi_1 = Current price for commodity i
Pi_o = Base period price for commodity i
Wi_o = Base period weight for commodity i.

inputs. Data from the *Household Income and Expenditure Surveys* and *Consumer Price Index Numbers* are used to derive percentage weights to be used to combine commodity indexes into group indexes. A composite index was constructed with appropriate weights for different items of commodities and farm inputs. From the indexes of prices received and paid by the farmers, parity ratios and parity prices have been computed. The following section focuses on these parity ratios and corresponding parity prices.

Parity Ratio and Parity Prices

Parity may be conceived of in a number of ways: Parity between agricultural commodities and non-agricultural commodities; Parity approach to price determination for each product; Parity between prices received for the farm products and prices paid for farm inputs; Parity under the assumption of different crop mixes. These are now discussed.

Parity between agricultural and non-agricultural commodities.—The parity ratios between agricultural and non-agricultural sectors assume great significance in any discussion of price policy because the sectoral price relationships affect production and facilitate the transfer of economic surpluses from one sector to another. The study by Lewis and Hussain, [12], updated by Lewis in August 1969 [11], show that the terms of trade between agriculture and non-agriculture improved significantly in the later years of 1960's over those which prevailed during the early 1960's. Bose and Clark [4] also observed that the improvement in agriculture's terms of trade in the early 1960's provided an incentive for increased agricultural production through the accelerated adoption of high yield variety technology.

The ratios of agricultural prices to non-agricultural prices from 1966-67 to 1975-76 were computed with the following formula:

$$\text{Parity Ratio} = \frac{\text{Index of Prices received by farmers}}{\text{Index of Prices paid by farmers}}$$

The individual commodity prices of major crop i.e., wheat, rice, cotton and sugarcane, are compared with the parity index to determine the parity ratio of these individual farm products. These ratios are shown in Table 2.

The above table shows that in the case of sugarcane, the parity ratio remained unfavourable during all the years; whereas for other crops, it fluctuated from year to year. Inter-crop price parity ratios have a significant impact on cropping patterns and provide a valuable price of information for policy makers.

Parity approach to price determination for each product.—The parity approach for determining support prices seems to be the most appropriate approach for determining prices for agricultural products because it reflects the expenses which the farmer incurs on farm inputs and consumption goods. It also throws light on the general demand conditions in the economy. We have estimated the parity prices by the following two methods.

Table 2

Parity Ratio Between Agricultural and Non-agricultural Prices as well as for Individual Crops: 1966-67 *to* 1975-76 (*Base* 1959-1960)

Year	Index of Prices Received	Index of Prices Paid	Combined Parity[a] Ratio	Parity Ratio of			
				Rice	Wheat	Sugar-cane	Cotton
1966-67	128.2	123.2	104.1	92.5	136.07	99.05	78.01
1967-68	125.7	124.6	100.8	101.4	114.28	65.37	77.02
1968-69	126.5	130.5	96.9	96.12	97.96	62.16	84.05
1969-70	122.4	131.7	93.0	90.8	97.09	61.06	89.09
1970-71	123.4	133.5	92.0	99.21	89.06	62.07	105.07
1971-72	133.3	147.4	90.4	100.08	87.29	57.01	102.55
1972-73	154.8	154.0	100.5	99.7	120.7	66.1	119.08
1973-74	214.6	194.7	110.2	97.87	122.43	58.07	135.09
1974-75	283.01	252.6	99.0	116.45	102.96	48.07	93.09
1975-76[b]	295.2	290.4	101.6	97.51	104.88	48.06	85.12

Notes: [a]Our estimates of the parity ratio are based on index of prices received and index of prices paid by farmers (the appendices II and III). The parity ratio between all agricultural prices and all non-agricultural prices is beyond the scope of our study. Our estimate of the parity ratio, however, can safely be taken as representative, since they take into account all the major items which constitute farmer's income or consumption.

[b]The index of wholesale prices for 1975-76 have been computed on basis of the monthly index of first six months of 1975-76 i.e. July to December 1975.

(*i*) *Fixed Base Method.* The parity prices have been calculated by multiplying the average price received for a commodity during the base period by the appropriate index of prices paid by the farmers. We have used the year 1959-60 as a base year for estimating parity prices. The formula for parity price estimation is:

$$\text{Parity Price} = \frac{A_p \times I_{pp}}{100}$$

Where A_p = Average price received in the base period, and I_{pp} = Index of prices paid in the year for which parity price is calculated. The estimated parity prices for some of the major farm products are given in Table 3.

(*ii*) *Adjusted Base Method.* This method represents an improvement over the fixed base method to determine prices for agricultural products for two reasons. First, the adjusted base period price under the new formula takes into consideration the price relationship among commodities in the most recent 10 years, whereas the old formula retains the relationship that existed in the original base period. Any seasonal variation is averaged out in the new formula and

Table 3

Estimates Parity Prices with Fixed Base 1959-60 = 100

Year	Wheat	Rice (Coarse)	Rice (Basmati)	Cotton	Sugarcane
1966-67	15.4	19.7	28.3	97.6	2.15
1967-68	15.5	19.8	28.5	98.3	2.17
1968-69	16.3	20.9	30.0	103.4	2.28
1969-70	16.5	21.6	30.6	104.3	2.30
1970-71	16.7	21.36	30.7	105.8	2.33
1971-72	18.42	23.6	33.9	116.8	2.57
1972-73	19.24	24.6	35.4	122.0	2.69
1973-74	24.3	31.2	43.7	154.2	3.40
1974-75	31.57	40.4	58.1	200.2	4.42
1975-76	36.30	47.5	66.8	230.0	5.08

parity prices, therefore, need not be adjusted for any seasonal variation. Second, the ten-year average is adjusted to a 1959-60 level, using the average of the index of prices received for all commodities for the same period.

The adjusted base method thus retains the old base as the standard of comparison between the prices received and the prices paid. At the same time, it also establishes relationships among parity prices taking into account the changes in the relevant prices over an extended period of average price relationship during the last ten years. The actual method of computing parity price according to the adjusted base method is as follows [26]. First, the average of prices for each commodity received by farmers for the ten preceding years is calculated. Second, the ten-year average is divided by the average of the index of prices received by farmers for the same time period. Finally, parity prices are computed by multiplying the adjusted base period prices by the current parity index. The following Table shows the prices of selected agricultural commodities as calculated with the use of this method.

Table 4

Estimated Parity Prices Based on Adjusted Base Method

Year	Wheat	Rice (Coarse)	Rice (Basmati)	Cotton	Sugarcane
1970-71	16.8	21.7	34.3	107.6	2.48
1971-72	19.1	23.9	38.7	125.0	2.07
1972-73	20.4	24.9	41.3	133.2	3.00
1973-74	25.2	30.3	53.2	167.4	3.8
1974-75	34.6	39.2	73.1	213.6	5.1
1975-76	39.4	43.5	85.5	223.6	5.8

The above table shows that in the year 1975-76 the level of support prices for wheat, rice, coarse cotton, and sugarcane should have been higher, while that of Basmati rice should have been a little lower.

Parity between prices received of the farm Products and prices paid for farm inputs.—Table 5 shows that the parity ratio between index of prices paid for the Urea brand of fertilizer and prices received by farmers has remained unfavourable to the farmers for 6 years out of the 10-year period considered in this study. The parity ratio remained favourable only in the years, 1966-67, 1967-68, 1968-69, and 1971-72. The parity price of various agricultural commodities, calculated by taking into account the out-of pocket costs of fertilizer is given in Table 6.

Table 5

Parity Between Prices Received of the Farm Products and Prices Paid for Farm Inputs

Year	Index of Prices Received	Index of Prices Paid[a]	Parity Ratio
1966-67	128.2	113.6	112.8
1967-68	125.7	113.6	110.6
1968-69	126.5	118.2	107.0
1969-70	122.41	129.5	94.4
1970-71	123.30	140.9	87.1
1971-72	133.25	129.5	102.1
1972-73	154.82	227.7	69.1
1973-74	214.16	263.6	81.3
1974-75	275.1	340.9	73.6
1975-76	295.2	331.8	94.3

[a]Fertilizer only use as proxy.

Table 6

Estimated Parity Prices of Individual Agricultural Commodities

Year	Wheat	Rice (Coarse)	Rice (Basmati)	Cotton	Sugar-cane
1969-70	18.0	23.9	37.00	117.9	2.7
1970-71	19.1	25.6	40.1	130.0	2.9
1971-72	18.6	23.2	37.70	121.6	2.7
1972-73	32.0	39.4	63.03	210.7	4.4
1973-74	37.0	44.1	76.1	244.2	5.0
1974-75	49.1	56.3	105.00	307.0	6.1
1975-76	46	51.2	100.1	263.0	6.2

Table 6 shows that the support prices of all the commodities should have been higher than the prevailing support prices. It may, however, be noted that we have taken into account only the out-of pocket cost of farmers for fertilizer purchases, as it usually constitutes the most important cash cost, alongwith support prices of selected crops. Extension of this exercise to other market purchased inputs would, in all probability, show a need to make upward revisions in support prices.

Parity under the assumption of different crop mixes.—Another important parity relationship is between prices received under a certain cropping pattern and prices paid for family consumption and production inputs. The cropping pattern may vary from area to area and time to time under the influence of ecological, economic, and several other factors. We have selected five most common cropping patterns prevailing in various areas of Pakistan and have computed the parity ratios by considering each of these cropping patterns. These are shown in Table 7.

Table 7

Parity Ratio's for the Major Cropping Patterns in Pakistan

Year	Cropping Pattern	Index of Prices Received	Index of Prices Paid	Parity Ratio
1974-75	Wheat, Maize, Sugarcane	249.74	252.6	98.9
1975-76	—do—	293.11	290.4	100.9
1975-76	Wheat, Maize	139.4	252.6	94.7
1975-76	—do—	290.5	290.4	100.0
1974-75	Wheat, Rice	256.7	252.6	100.2
1975-76	—do—	296.3	290.4	100.2
1974-75	Wheat, Sugarcane, Cotton	239.7	252.6	94.8
1975-76	—do—	236.0	290.4	81.3
1974-75	Wheat, Rice, Sugarcane, Cotton	247.7	252.6	98.6
1975-76	—do—	255.3	290.4	87.9

The table shows that the parity ratio in 1975-76 as compared to 1974-75 moved slightly in favour of agricultural producers representing areas where the first three cropping patterns namely, wheat-maize-sugarcane, wheat-Maize, and wheat-rice are predominant. The parity ratio of areas where last two cropping patterns namely, wheat-sugarcane-cotton and wheat-rice-sugarcane-cotton are predominant, the parity ratios have further deteriorated inl 975-76 as compared to 1974-75.

CONCLUSIONS AND SUGGESTIONS

The cost of production approach used in isolation can, at best, assure an attractive rate of return to farm production and help to maintain a desired balance in the relative profitability of competing crops or crop combinations. Even these objectives can only be effectively served provided up-to-date and sound empirical estimates representative of diverse farm conditions with rational valuation of labour and land inputs are developed for policy use. In the past, use of schematic cost of production estimates for devising price support packages mainly served the interests of the progressive farmers of relatively well-off regions in the country.

The parity ratios and parity prices for individual agricultural commodities based on different approaches show that no single approach provides a consistently high or consistently low parity price for all commodities. They, however, provide a range within which prices might be located in order to satisfy the norms of equity as well as the influence of the forces of supply and demand. For example, parity prices based on an adjusted base show interesting results and provide us with substantial evidence to state that the parity yardstick is capable of indicating the needed adjustment in prices to provide necessary incentives to farmers for increasing production.

It is strongly suggested that a comprehensive survey should be made for estimating monthly prices received by the farmers and the prices paid by them for family consumption and production inputs. Indexes of prices received by the farmers and paid by them should also be computed on a regular basis. The parity pricing approach should then be used in conjunction with the cost of production approach to work out price support programmes that will not only provide needed incentives to farm producers but will also keep the parity ratio for the agricultural sector as a whole in balance with the non-agricultural sector.

In the final analysis it may be mentioned that price fixation for individual commodities is invariably influenced by value judgements and political considerations. However, it is hoped that this analysis would serve the purpose of indicating the implications of determining prices of various agricultural commodities with different approaches and would be useful to policy makers in rationlizing their approach to policy.

Appendix—I

*Summary Statement Showing per Acre Profitability of Average Leading Farmer Punjab Based on January, 1976 Prices**

Crop	Rate	Acre-Yield	Gross return per acre	Cost of production per acre		Net Profit per acre		Cost of Production per maund	
				Excluding land rent	Including land rent	Excluding land rent	Including land rent	Excluding land rent	Including land rent
	Rs.	Mds/acre		Rupees					
Wheat (Maxipak)	37.00	25	1025	654	904	372	122	26	36
Rice (Basmati)	90.00	16	1460	800	1050	660	410	50	66
Rice (IRRI-6)	45.00	30	1400	799	1049	601	351	27	35
Cotton	100.00	14	1400	605	855	795	545	43	61
Sugarcane	5.75	550	3163	2350	2850	812	312	4.27	5.18

Source: Planning Division, Agriculture and Food Section.

*The Planning division estimated per acre cost of production of individual crops by taking into account all size of farms on the basis of stratified sampling and then used random sampling approach to select farmers within each category of farm size. The sample was taken from the representative areas of central, southern and Northern Punjab only. Only Punjab province was considered and other provinces were ignored on the assumption that farm size of all categories with varying level of technology had already been taken into account. Furthermore, the time and resources available for survey were limited and, therefore, the scope of the survey could not be extended to other provinces.

Appendix—II

Index of Prices Received by Farmers 1960-61 *to* 1975-76
(1959-60 = 100)

Commodity	1960-61	1961-62	1962-63	1963-64	1364-65	1965-66	1966-67	1967-68
1. Rice	95.3	96.3	96.00	100.6	102.7	98.9	112.7	125.8
2. Wheat	114.9	106.6	101.4	112.1	122.5	111.7	168.5	149.01
3. Barley	103.0	92.9	84.5	106.1	117.4	90.5	138.4	152.0
4. Maize	85.8	83.4	82.4	84.4	96.3	90.6	136.4	118.3
5. Jowar	110.0	93.4	78.7	93.7	92.0	92.0	140.9	119.8
6. Bajra	104.1	102.5	91.8	101.3	105.6	101.5	164.1	145.4
7. Gram	105.3	108.0	108.6	97.7	124.3	94.9	123.6	148.5
8. Other	111.3	131.6	124.0	119.6	124.3	131.1	149.3	139.0
9. Potatoes	115.5	85.4	90.6	108.0	95.4	97.8	135.2	107.3
10. Onions	37.5	77.9	43.9	69.0	40.3	87.1	47.7	53.7
11. Fruits	96.7	99.6	94.1	103.1	99.2	86.7	84.7	82.1
12. Milk	107.4	105.7	106.6	105.7	110.4	114.2	118.6	129.0
13. Ghee Desi	99.7	95.9	93.7	92.6	102.9	105.1	113.0	116.1
14. Cotton	109.0	100.0	96.6	97.1	114.0	107.4	96.5	95.8
15. Tobacco	101.0	97.0	92.9	105.0	106.1	109.2	107.9	112.0
16. Sugarcane	125.2	148.9	149.2	140.2	140.2	140.2	122.6	81.1
Weighted Average	110.07	109.5	105.4	112.3	111.4	109.4	128.2	125.7

—*Continued*—

Appendix II—*Continued*

Commodity	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
1. Rice	125.4	119.6	132.48	148.55	153.62	190.55	294.19	283.2
2. Wheat	127.8	129.0	119.68	128.64	185.86	238.36	260.13	304.6
3. Barley	115.5	135.1	140.4	154.19	176.56	242.90	240.13	275.3
4. Maize	97.0	100.7	104.7	126.7	137.9	152.21	280.30	308.4
5. Jowar	102.7	92.5	83.5	99.76	131.85	128.01	235.28	251.6
6. Bajra	121.8	122.6	116.4	149.5	207.19	185.50	374.61	491.6
7. Gram	156.7	207.3	145.0	149.35	219.99	247.35	295.2	304.4
8. Other	147.3	198.8	194.6	188.73	243.11	364.19	343.19	346.5
9. Potatoes	103.2	131.0	138.2	113.11	100.55	283.75	229.91	230.6
10. Onions	55.1	56.2	86.2	64.86	68.29	228.05	126.74	296.6
11. Fruits	76.1	80.1	75.0	62.79	70.35	116.31	125.41	168.7
12. Milk	134.9	140.1	150.7	160.00	189.6	264.6	327.89	361.4
13. Ghee Desi	118.4	133.4	148.1	147.42	158.18	153.03	272.11	306.02
14. Cotton	110.4	114.2	141.2	151.12	184.51	264.67	235.19	247.22
15. Tobacco	106.0	116.6	113.7	148.48	147.42	157.91	223.0	210.5
16. Sugarcane	81.1	81.1	83.7	84.15	101.87	114.21	123.08	141.01
Weighted Average	126.5	122.41	123.30	133.25	154.82	214.6	250.1	295.2

Sources: [1, 12, 13, 14, 15, 16, 17]

Appendix—III

Index of Price Paid by Farmers from 1960-61 *to* 1975-76

Commodity	1960-61	1961-62	1962-63	1964-64	1964-65	1965-66	1966-67	1967-68
1. Agricultural Machinery	100	101.5	100.4	99.4	104.5	107.2	110.5	109.0
2. Kerosine Oil	100	110.0	100.5	110.2	40.2	114.7	138.5	140.0
3. Firewood	118.8	102.0	105.4	103.5	111.8	125.4	139.3	146.0
4. Vegetable Ghee	104.5	111.9	95.3	95.2	112.7	126.4	140.1	134.8
5. Meat	100	103.4	110.9	117.3	119.1	125.7	133.7	158.1
6. Sugar Refined	117.9	111.5	110.5	121.3	127.1	115.8	106.3	126.3
7. Tea	143.4	181.3	113.9	108.02	101.1	118.9	130.3	108.7
8. Salt	101.0	97.0	124.5	104.1	106.3	108.6	149.4	79.4
9. Cotton Manufacture	86.9	101.0	96.6	95.6	96.8	98.5	101.9	103.0
10. Utensils	97.6	76.8	106.9	113.3	109.7	127.3	146.0	164.1
11. Silk and Ryon	100.7	92.5	79.3	84.0	88.4	101.2	110.9	90.3
12. Wool Manufactures	102.9	105.6	83.8	83.2	79.9	77.5	81.7	88.4
13. Cement	100	111.4	107.7	121.9	145.7	147.4	151.9	150.4
14. Tobacco Products	99.2	102.6	90.3	84.4	117.4	121.3	140.5	141.7
15. Cycles	99.9	97.7	108.6	108.4	113.5	116.3	118.3	121.6
16. Matches	98.7	99.0	99.4	99.8	99.2	109.9	103.9	104.2
17. Shoes	85.6	85.5	99.0	99.0	99.0	103.9	114.1	108.0
18. Soap	100	100	85.3	85.3	93.9	102.0	112.7	108.0
19. Fertilizer	100	109.0	110.0	110.2	113.6	113.6	113.6	113.6
20. Drug and Medicines	107.11	105.7	84.2	86.9	91.2	91.2	91.2	91.2
Weighted Average	107.07	103.07	99.63	100.74	105.58	110.19	123.22	124.06

—Continued—

Appendix III—*Continued*

Commodity	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
1. Agricultural Machinery	112.0	115.0	115.0	115.0	118.3	106.6	151.9	168
2. Kerosine Oil	141.7	144.7	152.9	176.95	177.6	233.5	321.8	346.37
3. Firewood	152.7	158.4	161.47	175.28	212.29	351.33	397.50	389.6
4. Vegetable Ghee	133.5	137.4	150.2	152.1	151.6	190.7	247.00	283.1
5. Meat	168.8	170.1	186.6	196.8	198.9	272.7	366.5	403.6
6. Sugar Refined	118.6	118.6	108.3	138.3	167.3	184.3	226.6	250.3
7. Tea	115.8	109.8	113.9	119.3	158.7	148.6	162.1	174.6
8. Salt	184.1	167.9	170.85	177.0	203.8	315.1	380.7	387.1
9. Cotton Manufacture	102.0	101.8	102.9	105.2	116.7	157.9	198.2	268.02
10. Utensils	170.9	188.3	113.8	119.7	123.9	123.9	136.7	157.76
11. Silk and Ryon	101.7	109.2	88.4	87.2	87.8	123.0	171.1	150.55
12. Wool Manufactures	87.7	91.5	147.8	159.8	178.1	274.0	210.4	343.74
13. Cement	150.2	148.5	148.4	163.8	181.8	199.4	238.0	290.53
14. Tobacco Products	143.1	144.9	156.6	181.1	189.9	201.6	323.5	369.05
15. Cycles	124.9	125.3	130.0	131.9	154.8	173.3	299.3	301.41
16. Matches	115.1	117.3	134.0	261.7	213.3	213.3	258.6	274.7
17. Shoes	104.5	95.9	101.1	111.1	125.6	141.0	210.8	229.4
18. Soap	109.3	121.6	116.8	136.3	141.3	196.6	249.1	262.1
19. Fertilizer	118.2	129.5	140.9	129.5	222.7	263.6	340.9	331.8
20. Drug and Medicines	91.2	90.6	90.6	85.7	72.2	72.2	88.0	98.08
Weighted Average	130.46	131.67	133.53	147.36	153.96	194.69	252.63	290.4

Sources: [1, 12, 13, 14, 15, 16, 17, 18, 19].

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