

PRICE INSTABILITY IN COCONUT PRODUCTS IN KERALA DURING THE EIGHTIES*

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ABSTRACT

The major causes of price instability in coconut products namely nuts, copra and coconut oil have been identified in this study. The growth rates in production and prices of these products for the eighties have also been estimated. While the compound growth rate (CGR) for coconut production in the last decade was 2.43 per cent per annum for Kerala, it was 4.09 per cent for the whole of India. The CGRs for the wholesale prices of coconut products were between 7.61 and 8.42 per cent during the same period.

This study however indicates that compared to the prices of rice, dal, sugar and tea, coconut prices have not shown any appreciable increase in the last five years. Furthermore, labour wages in agricultural sector has been rising more than proportionately in these years. The coconut farmer is, therefore, at a disadvantage as his product is not able to maintain with the other goods and services which he needs most.

Attempts have been made in this study to predict the prices of copra with the help of coconut oil prices ; and the prices of coconut with the help of the prices of either copra or coconut oil. The prediction models were found to have good fit with the value of r^2 ranging between 0.83 and 0.99.

INTRODUCTION

Coconut is an important food-cum-oilseed crop in its own right. The major problem in the development of this perennial small holder crop is the price uncertainty of its products. Even though the price behaviour in coconut sector is an enormously complicated issue and quite intriguing in certain aspects, an attempt has been made here to study the price trends of coconut products in Kerala markets during the last decade. Kerala being the market leader for coconut products in India the price trends of Kerala markets reveal the general position of the Indian markets as well.

MATERIALS AND METHODS

The monthly as well as annual average wholesale prices in respect of coconuts, copra and coconut oil were obtained from the Marketing Unit of the Coconut Development Board, Ministry of Agriculture, Government of India (GOI), Cochin. Though the price data referred to here were related to Calicut market, they

hold good for Kerala. The wholesale prices of rice, arhar (tur) dal, tea and sugar for Kerala were compiled from the publications of the State Planning Board, Government of Kerala, Trivandrum. Agricultural labour wages for different years were also collected from the same source. The estimated production figures in respect of coconut and annual oilseeds like groundnut, rapeseed-mustard and sesame were collected from the Directorate of Economics and Statistics, Ministry of Agriculture, GOI, New Delhi.

The analyses of this study were limited to the period 1980s. The coefficient of variation (CV) for the monthly as well as annual wholesale prices of coconut, copra and coconut oil were estimated to study the extent of price instability in coconut, rice, dal, tea, sugar and labour wages computed by taking 1980 prices as the base year prices. Correlation coefficients (r) were determined between the prices of related products. Simple linear regression equations were fitted to predict the prices of coconut products by using the prices of any one of them.

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RESULTS AND DISCUSSION

In India, the vulnerability to price change of coconut products was increasingly recognized during the 1980s (Table I). The major factor behind the violent fluctuations in these prices was the uncertainty of weather which led to serious supply volatility not only in coconut sector (Table II) but also in the oilseed sector in general (Table III). Frequent changes in the edible oil import policy had also contributed to the price instability in coconut sector to a considerable extent, although there was no shift from the ban on the import of copra and coconut oil which was imposed by the Government of India since 1979-80 (Das, 1986).

The 1980-81 prices took off from the price nadir in 1979-80. Despite a marginal increase in coconut production and record import of 1.7 million tonnes of edible oils into India during that year, the prices of coconut, copra and coconut oil were hardened in sympathy with other edible oils because of the poor harvest in annual oilseed crops. During 1981-82 the prices of copra and coconut oil fell by 23.2

per cent and 16.4 per cent respectively, while coconut prices declined marginally by 1.8 per cent from the 1980-81 level. This was because of lower upcountry market demand for coconut oil following higher production of annual oilseeds besides delayed effect of large scale imports of edible oils in the preceeding year. Coconut products again manifested price increase in the year 1982-83 inspite of the improvement in coconut production. It was mainly because of the indirect effect of poor harvest of groundnut following widespread drought and flood in most parts of the groundnut growing areas (Table III).

The prices of coconut products, however, dramatically rose during the year 1983-84 due to the delayed effect of the unprecedented drought of 1982 in Kerala where more than 90 per cent of coconut gardens are rainfed. That was the first time in the history of Kerala that coconut production had fallen to an all-time low level of 2602 million nuts from an average of about 3000 million nuts in the preceding four years (Table II). These prices further culminated in the all-time record of Rs.2605 for 1000 nuts, Rs.21820

Table I. Average annual wholesale prices of coconut, copra and coconut oil in Kozhikode market during the 1980's.

Year	Wholesale price of					
	Coconut		Copra		Coconut oil	
	(Rs./1000 nuts)	% var from previous yr.	(Rs./tonne)	% var. from previous yr	(Rs./tonne)	% var. from previous yr
1979-80	928	-7.20	8560	-1.04	12190	3.30
1980-81	1158	24.78	11610	35.63	15770	29.37
1981-82	1137	-1.81	8920	-23.17	13190	-16.36
1982-83	1271	11.79	10210	14.46	15420	16.19
1983-84	985	96.14	15880	55.53	23840	54.60
1984-85	2605	36.74	21820	37.41	32400	35.91
1985-86	1215	-53.31	11520	-47.20	17100	-47.22
1986-87	1920	58.02	17000	-47.57	25920	51.58
1987-88	2118	10.31	20570	21.00	30970	19.48
1988-89	2277	7.51	19230	-6.51	28730	-7.23
1989-90	1830	-19.63	15720	-18.25	23220	-19.18
Mean	1722.64		14640.00		21705.00	
SD	574.91		4515.47		6962.01	
CV (%)	33.37		30.84		32.08	
C.G.R. (%) yr ⁻¹	7.61		7.80		8.42	

Table II. Estimated production of coconut in Kerala and India during 1980's

Year	Kerala		India	
	Production (million nuts)	(%) Var. from previous yr	Production (million nuts)	(%) Var. from previous yr
1979-80	3032	-6.33	5630	-1.75
1980-81	3036	0.13	5720	1.49
1981-82	3006	-1.00	5573	-2.57
1982-83	3184	5.92	5664	1.63
1983-84	2602	-18.28	5908	4.31
1984-85	3395	30.48	6887	16.57
1985-86	3149	-7.25	6620	-3.88
1986-87	3173	9.76	6404	-3.26
1987-88	3670	15.66	7562	18.08
1988-89	3841	4.66	8161	7.92
Mean	3208.80		6413.50	
SD	335.11		851.41	
C.V. (%)	10.44		13.28	
C.G.R.(%) YR ⁻¹	2.43		4.09	

Table III. Production of important oilseeds in India during 1980s ('000 tonnes)

Year	Groundnut	Rapeseed-Mustard Sesame	Soybean	Total for nine oilseeds	
1979-80	5768	1428	348	NA	8739
1980-81	5005	2002	445	442	9372
1981-82	7230	2362	524	352	12080
1982-83	5553	2472	502	491	9995
1983-84	7284	2566	618	614	12692
1985-86	5121	2681	501	1024	10833
1986-87	5875	2605	448	891	11270
1987-88	5854	3455	583	893	12655
1988-89	9544	4412	667	1501	17888
Mean	6367.0	2706	516	796	11847
S.D.	1289.1	771	87	340	2443
C.V.(%)	20.25	28.49	16.86	43.71	20.62
CGR(%) yr ⁻¹	2.59	9.44	4.20	16.97	5.26

per tonne copra and Rs.32400 per tonne coconut oil in the year 1984-85 as there was no carry-over of stocks from the previous year and the pent up demand quickly absorbed the small harvest of that year. The decision of the Government of India to ban the imports of tallow also accentuated the rising trend of these

prices. What could have been the real impact of the unprecedented Kerala drought on these prices, had there been no massive scale distribution of imported palm oil through the fair price shops in Kerala which amounted to over 20000 tonnes each year during 1982-83 and 1983-84 and over 47000 tonnes in 1984-

85, is anybody's guess.

As coconut production improved substantially from 2602 million nuts in 1983-84 to 3395 million nuts in 1984-85, a rise by 30.5 per cent in Kerala alone, price trends of coconut products were corrected by climbing down to a modest level. The special drive made by Kerala government to rehabilitate the drought-affected coconut gardens coupled with prevalence of extremely beneficial weather could be responsible for increase in production as well as sudden crash in prices of these products from the astoundingly high level in the preceding year.

Price movement trends upward upto 1988-89 from the abysmally low level in 1985-86. These prices were still lower than those of the 1984-85 price bonanza. Though coconut production in Kerala and also in three other southern states showed a spectacular improvement during 1987-88 and 1988-89 with record harvests the general hardening tendency was largely due to the short harvest of annual oilseed crops during the three successive years 1985-88. In the year 1989-90, coconut production in Kerala was expected to touch an all-time record of 4200 million nuts - a 20 per cent more than what would have been considered a normal crop in the state. Similar improvement in coconut harvest was also anticipated from other producing areas. The expectation of a bumper annual oilseeds harvest in India during 1988-89 has also come true with all-time record harvest of 17.9 million tonnes largely due to ideal weather conditions prevailing particularly in groundnut and soybean growing tracts of India (Table III). On account of the overall improvement in oilseed sector, edible oil prices were displaying a distinctly subdued tendency and came down by 22 to 40 per cent depending on the type of oil. In the case of coconut oil the wholesale prices in 1989-90 tottered and averaged around Rs.23200 a tonne from Rs. 28730 in the previous year, this decline in one year being 19.2 per cent. Copra and coconut prices were also similarly situated (Table I).

The estimated compound growth rates (CGR) for the prices of coconut products for the eighties were found to be between 7.5 per cent and 8.4 per cent per annum. In the case of the production of

coconut in Kerala the CGR was 2.4 per cent while for the whole of India it was 4.1 per cent (Tables I and II)

The fluctuations in the monthly wholesale prices of coconuts in 1989-90 showed that the prices per 1000 nuts dropped to Rs.1311 in July from Rs.2117 in April a fall by 38.1 per cent. Similarly, this price drop as compared to the corresponding month in the preceding year was 40.2 per cent. The prices of copra as well as coconut oil also ruled at the lowest point during that year. Obviously, the coconut growers in Kerala were very much sore and the print media highlighted their plight with the headline that coconut growers did not reap the harvest. Like in 1985-86, the National Agriculture Cooperative Marketing Federation (NAFED) entered the market to procure copra at the minimum support price of Rs.15,000 per tonne and this step had a salutary effect. From January 1990 the prices showed a significant uptrend (Table IV).

The correlation coefficients (r) between average wholesale prices of coconut, copra and coconut oil were found to be in the range of 0.91 and 0.99 (Table V). In other words, the price trends in coconut products exhibited most close relationship among each other on expected line (Das, 1987).

In an attempt to predict the price, each of coconut, copra and coconut oil with the knowledge of one of them, six regression equations were fitted. The prediction models were found to give very good fit with the r^2 ranging from 0.83 to 0.99 (Table V). These equations showed that 83 to 99 per cent of the variations in dependent variable(s) were explained by the independent variable(s) specified in the model and the remaining residual variations were contributed by the other factors including random fluctuations.

When the index numbers of coconut prices were constructed with 1980 as the base and compared with the index numbers of essential commodities prices drawn with the same base year, it was observed that coconut prices had not shown equally proportionate increase with the prices of pulses (dal), tea and sugar. Even rice was relatively dearer than coconut in the

Table IV. Fluctuations in wholesale price of coconut, copra and coconut oil in Kozhikode market during 1988-1990

Month	Coconut (Rs 1000 nuts)			Copra (Rs 100 kg.)			Coconut Oil (Rs 100 Kg)		
	1988-89	1989-90	Percentage increase/decrease over previous year	1988-89	1989-90	Percentage increase/decrease over previous year	1988-89	1989-90	Percentage increase/decrease over previous year
April	2771	2117	23.6	2147	1619	24.5	3222	2444	-24.1
May	2505	2067	-17.4	1955	1560	-20.2	2947	2354	-20.1
June	2115	1488	-29.6	1965	1551	-21.0	2987	2324	-22.1
July	2195	1311	-40.2	1956	1482	-24.2	2994	2196	-26.6
August	2265	1575	-30.4	1974	1525	-22.7	3007	2227	-25.9
September	2303	1575	-31.6	2164	1547	-28.5	3202	2295	-28.3
October	2360	1379	-41.5	2224	1537	-30.8	3318	2252	-32.1
November	2521	NT	—	2276	1578	-30.6	3426	2288	-33.2
December	2633	NT	—	2267	1610	-28.9	3359	2370	-29.4
January	2689	2100	-21.9	2163	1551	-28.2	3163	2301	-27.2
February	2548	2365	-7.1	1691	1673	-10.6	2503	2442	-2.4
March	2139	2327	-8.7	1634	1623	-0.6	2378	2372	-0.2
Mean	2410	1830		2035	1571		3042	2322	
SD	211.86	382.67		202.81	49.72		308.72	74.72	
CV (%)	8.75	20.91		9.97	3.16		10.15	3.2	

NT = No Tranachin

Table V. Relationship between prices of coconut*, copra*, and coconut oil* at Kozhikode market and prediction equations (1979-80 to 1988-89)

	Dependent variable (Y)	Independent variable (X)	Constant a	Regression coefficient b	r	r ²
1.	Coc. oil	Copra	-749.87	1.5350**	0.9975	0.995**
2.	"	Coconut	2806.50	10.9219**	0.9197	0.846**
3.	Coconut	Copra	-2.83	0.1183**	0.9131	0.834**
4.	"	Coc.oil	47.26	0.0774**	0.9197	0.846**
5.	Copra	Coconut	2434.58	7.0466**	0.9131	0.834**
6.	"	Coc.oil	559.31	0.6482**	0.9975	0.995**

* Price of Coconut in Rs 1000 nuts

* Price of copra in Rs tonne

* Price of coconut oil in Rs tonne

** Significant

Table VI Comparative index numbers of prices of coconut and other commodities and labour wages in Kerala (Base 1980=100)

Year	Coconut	Rice	Arhar/Tur Dal	Tea	Sugar	Labour wages
1980	100	100	100	100	100	100
1981	106	133	107	101	198	120
1982	98	154	116	102	139	144
1983	139	136	133	123	161	152
1984	233	142	134	182	161	152
1985	127	95	129	215	167	200
1986	147	155	139	192	205	216
1987	178	158	198	223	209	240
1988	216	184	230	211	221	280
1989	164	198	208	338	259	288

year 1989. Furthermore, labour wages in Kerala's agriculture sector had been rising more than proportionately in these years (Table VI). This could reveal that the coconut farmer was at a disadvantage as his product was not able to maintain parity with the other goods and services which he needs most the price trend suggests that the prices of coconut had more than doubled during the last 10 years, yet the metaphor was deceptive.

Although the growth rates in production and prices of coconut products suggest that this crop is well set to meet a sizeable need in vegetable oil, nevertheless the price instability in this sector is most challenging and worrisome. The future of this valuable crop however, lies with the improvement of its production, processing and marketing systems by which the benefits could percolate to the smallholders and the products could reach the common man at accessible prices.

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