

TREND ANALYSIS OF MARKETING PATTERNS OF FARM PRODUCTS

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Of farm products marketed in the United States in 1971, 73% were sold by private producers and 27% by cooperative firms. Cooperative marketing increased at a greater rate than private marketing from 1958 through 1968. Greater benefits offered to farmers by the cooperative firms were the main reason for the greater increase in cooperative marketing.

The private marketing pattern can be defined as the marketing of farm products by private individuals or firms owned and operated by shareholders whose main motive is making profits for the owners. The cooperative pattern involves farmer-owned and operated organizations which sell their products with the resulting profits being distributed to members on a patronage basis (1).

The overall growth of farm products marketing in the United States has been substantial. The proportion of total sales by private marketing and cooperative marketing in terms of dollars was 73% and 27%, respectively, in 1971. Cooperatives have increased their market volume more rapidly than private firms in marketing farm products. The cooperative marketing share increased from 23% in 1960-61 to 27% in 1968-69, as shown in Table 1 (2).

TABLE 1. Estimated farmer cooperative share of the market by commodity, 1960-61 and 1968-69.

	Cooperative share		
	1960-61 %	1968-69 %	Change %
Cotton and cotton products	22	26	+4
Dairy products	61	69	+8
Fruits and vegetables	21	29	+8
Grain	38	33	-5
Livestock	13	13	0
Poultry	10	9	-1
Other	32	10	-22
All marketing	23	27	+4

The purpose of this study was to analyze quantitatively the private and cooperative marketing patterns of farm products. Data used in the analysis were drawn from the official Agricultural Statistics (3), and Statistical Abstract of the United States (4). Time series data from 1958 through 1968

were obtained in dollars. The data were transformed to index number forms using the 11-year average as a base period equal to 100, as shown in Table 2.

TABLE 2. Indexes of values of cooperative, total, and private marketing patterns of farm products in the United States, 1958-1968.

Year	Cooperative Index ^a	Total Index ^b	Private Index ^c
	Y _{1t}	Y _{2t}	Y _{3t}
1958	80.2	88.3	93.1
1959	82.1	88.5	92.2
1960	85.3	90.2	93.0
1961	91.3	92.6	93.4
1962	91.6	96.0	94.9
1963	102.1	98.7	96.6
1964	104.1	98.3	94.7
1965	108.8	103.9	101.6
1966	114.3	114.3	114.2
1967	116.3	112.7	110.4
1968	117.8	116.5	115.9
11-Year average	100	100	100

^a Y_{1t} = index of cooperatively marketed farm products.

^b Y_{2t} = index of total farm products marketed.

^c Y_{3t} = index of privately marketed farm products.

COOPERATIVE MARKETING PATTERN

A linear regression equation using time (T_t) as the independent variable was computed for the index of cooperative marketing (Y_{1t}) and for the index of total marketing (Y_{2t}). The analysis yielded satisfactory results in terms of conventional measures of statistical reliability (5). The results were:

$$Y_{1t} = 74.21 + 4.19t \quad \text{Eq. 1} \\ (0.18)$$

$$R^2 = 0.98$$

$$Y_{2t} = 81.58 + 3.08T_t \quad \text{Eq. 2}$$

$$(0.23)$$

$$R^2 = 0.95$$

The trend coefficient indicates that the index of the cooperatively marketed farm products increased an average of 4.19 points each year. About 98% of the variation in cooperative marketings was associated with the trend. The index of total marketings was less marked than the trend in cooperatively marketed products. The coefficient indicates an annual increase in total marketings of 3.08 points, and 95% of variation associated with the trend.

PRIVATE MARKETING PATTERN

A linear regression equation using time (T_t) as the independent variable was computed for the index of private marketing (Y_{3t}). The estimated regression equation is:

$$Y_{3t} = 85.38 + 2.44T_t \quad \text{Eq. 3}$$

$$(0.42)$$

$$R^2 = 0.80$$

The trend coefficient indicates that the index of private marketing increased an average of 2.44 points each year. About 80% of the variation in private marketing is associated with the trend.

The conclusion based on both tests is that the index of cooperatively marketed farm products increased at a greater rate than did the index of private marketing in the period 1958-1968. The next question is why has this occurred? Cooperatives distribute net savings of some \$500 million annually to their member-farmers (6). Further savings are realized by farmers through the effects of cooperatives on prices, marketing margins, and bargaining procedures.

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