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FINANCIAL PERFORMANCE OF OILSEEDS COOPERATIVE– A CASE STUDY OF KARNATAKA OILSEEDS GROWERS' FEDERATION (KOF) LIMITED*

M.R. VIDYA[1], P.C. RAVI[2] AND J.V. VENKATARAM[3]

ABSTRACT

The paper examines the financial performance of Karnataka Cooperative Oilseeds Growers' Federation (KOF) using various financial performance indicators and principal components analysis. The results indicate that although KOF performed well in the initial years of its operation, it could not sustain this performance in the later period, mainly on account of high management and establishment expenses. Profitability, liquidity and leverage-cum-activity being the most important dimensions of performance, the study suggests that KOF should aim at a reasonable profit, improve its liquidity position and increase leverage supported by increased sales to improve its performance in the long run.

Oilseeds are the raw material for vegetable oils and occupy a significant place in India's national economy next only to food grains. They account for about 10 per cent of the value of all agricultural outputs and approximately 5 per cent of India's Gross National Product. But hitherto, India faced huge deficit in the domestic supply of edible oils and resorted to large scale imports to meet the consumption needs of her growing population. The growers received little incentives to increase the oilseeds production because of prevalence of various market imperfections. By and large, oilseed growers were in the clutches of private traders, brokers and money lenders (Guptha, 1989). In view of this, the National Dairy Development Board envisaged a coordinated effort for restructuring the production, processing and marketing of oilseeds and edible oil on cooperative lines in order to improve the economic lot of the oilseed growers. The project has been designed in such a way that the variegated operations are undertaken

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1 P.G.Student, Department of Agricultural Economics, UAS, Bangalore
2. Associate Professor of Marketing, UAS, Bangalore
3. Professor of Farm Management and Production Economics, Alemaya University of Agriculture, Addis Ababa, Ethiopia.

on a cooperative basis through a two-tier structure; consisting of oilseed growers' societies at the village level and an oilseed organization at the State level. These State level cooperative oilseed Federations started operating in 1979. At the end of June 1992, there were 5014 'Anand pattern' oilseeds cooperatives with a total farmer membership of 8.2 lakhs. These cooperatives covered an area of 19.24 lakh hectares of oilseeds in 28,749 villages in India. This paper presents the financial performance of Karnataka Cooperative Oilseeds Growers' Federation (KOF) Limited which is one of the nine State Federations in India. The Federation was set up in the year 1984 and the first phase of its operation covered a period of five years (1984-1989). During the second phase of the project, the structure has been reorganised to a three-tier cooperative structure with the village level oilseed growers societies being affiliated to the Regional Unions organised at the district level and the Regional Unions in turn affiliated to the state level Federations. The soundness of financial operations is basic to the success of cooperative sector in the industrial line. In this paper a modest attempt has been made to measure the financial performance and financial operations of the KOF.

Data and Methodology

Financial ratio analysis being an effective tool in analysing performance of the business organization has been relied upon heavily to evaluate the solvency, liquidity, profitability, turnover and other related financial operations. This tool has been used by several workers to study the business performance of cooperative organisations and provided mixed results (Rao, 1963; Kumar, 1983; Rao, 1984; Rayadu, 1985; Krishnaswamy and Narayanasami, 1990; and Murthy et al., 1990). The study made use of balance sheet, profit and loss account statements of the Federation for a period of six years from 1984-85 to 1989-90. As many as thirteen financial ratios were employed which are listed below.

A. Test of solvency

(a) Total liability to owned funds
(b) Fixed assets to owned funds

B. Test of liquidity

(a) Current assets to current liabilities
(b) Acid test ratio defined by current assets minus inventory divided by current liabilities

(c) Inventory to net working capital

C. Test of profitability

(a) Net profit to total assets
(b) Net profit to owned funds
(c) Net profit to total sales

D. Test of turnover

(a) Working capital turnover
(b) Inventory turnover

E. Miscellaneous group

(a) Efficiency of capital ratio
(b) Gross ratio
(c) Net capital ratio

The above listed thirteen performance indicators were further subjected to principal component analysis in order to obtain a better understanding of the factors influencing the business performance of KOF. This technique provides a means of identifying and measuring the relationship or basic patterns in a data set. Principal component as a statistical technique can aid in preliminary investigations for interpretation of relationships between a large number of interdependent variables. Accordingly, we have restricted our purpose in the study to apply principal component method only to reduce the set of 13 interdependent performance indicators to a smaller set of more meaningful, more nearly uncorrelated derived components to gain some empirical insight as to the financial performance of KOF. The principal component model (for details see Davies, 1984) is expressed as

$$S_i = a_{i1} x_1 + a_{i2} X_2 + \ldots\ldots\ldots\ldots + a_{ip} X_p$$

Where S_i = magnitude of the indicator 'i' denoting ith principal com ponent in the model.

a_{ip} = the factor loading of the pth indicator in the ith principal component

X_p = the amount of association in magnitude of indicators, the uncorrelated trait measured by factor 'p' which is denoted by indicator 'i'

i = factor loading with reference to indicators (1,2,3.....p)

p = a set of indicators in the model (1,2,.....p)

$a_{ip}x_p$ = factor coefficient or loading for indicator i on factor p.

Results and Discussion

Financial ratios as well as principal component analysis were used to study the financial soundness of the KOF and the results are discussed in this section in the order of their primary function.

Solvency:

Solvency of a business refers to the ability of the organisation to meet its total obligations as and when they fall due and thus it is a measure of financial strength of the Federation. The ratios of total liabilities to owned funds and fixed assets to owned funds were used to test the solvency position of the cooperative. The details pertaining to the financial analysis are presented in Table 1. The ratio of the total liabilities to owned funds of the Federation showed an increasing trend over the years. It increased from 0.62 in 1984-85 to 27.56 in 1989-90. As this ratio indicates the amount of total liabilities of the organization for every rupee of owned funds from the point of creditors, a lower ratio is desirable. However, in the present case, the owned funds have not grown and the borrowings have grown disproportionately to the equity over the years. Therefore, from the point of view of financial safety of the Federation, it is desirable to maintain this ratio at a lower level.

Fixed assets to owned funds indicates the extent of owned funds tied up in the form of fixed assets. A gradual increase in the value of this ratio could be noticed over the years eventhough it fluctuated from year to year. It indicated that on an average 25 per cent of the owned funds was in the form of fixed capital. The increase in this ratio can however be related to an appreciable rise in the volume of sales, range of services and the number of villages covered by the Federation. In view of the objectives of covering a wide range of business, a moderate build up of fixed assets like buildings, godowns and transport vehicle was necessary and consequently entails a gradual increase in the ratio.

Table 1. Indicators of financial performance of KOF

Ratios	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	Average
Solvency							
1. Total liabiilities to owned funds	0.67	2.42	4.64	11.72	11.26	27.57	9.71
2. Fixed assets to owned funds	0.09	0.19	0.01	0.43	0.42	0.36	0.25
Liquidity ratios							
3. Current ratio	9.39	4.86	2.32	2.69	2.76	0.08	3.85
4. Inventory to net working capital ratio	0.04	0.25	1.18	1.32	0.55	0.76	0.68
5. Acid test ratio	9.03	3.91	0.76	2.10	1.80	0.34	2.99
Profitability							
6. Net profits to total assets	0.01	0.03	0.19	-0.44	-0.01	-0.09	-0.05
7. Net profits to owned funds	0.01	0.05	0.56	-3.68	-0.01	-1.33	-0.73
8. Net profits to total sales	0.01	0.01	0.07	-0.19	-0.01	-0.12	-0.04

Turnover							
9. Working capital turnover ratio	0.36	4.22	4.94	14.83	2.71	0.85	4.65
10. Inventory turnover ratio	1.72	0.03	0.12	9.60	4.82	2.00	3.05
Other performance indicators							
11. Efficiency of capital ratio	0.95	0.19	0.05	0.04	0.11	0.50	0.31
12. Gross ratio	0.98	0.94	0.53	4.06	1.00	3.95	1.91
13. Net capital ratio	1.89	0.59	0.62	0.72	0.40	0.54	0.79
14. Net worth (Rs. in Lakhs)	73.00	–118.25	–491.70	–596.39	–1282.20	–1827.50	–707.17

Liquidity

Tests of liquidity were framed to examine the ability of the Federation to meet the current financial obligations. The ratios in this group consisted current assets to current liabilities, inventory to net working capital and current assets minus inventory to current liabilities (acid test ratio). From Table-1 it can be seen that the current ratio was well above unity for all the years implying that adequate funds on hand ensuring reasonable level of liquidity. The inventory ratios were also lower than unity in most of the years except during 1986-87 (1.18) and 1987-88 (1.32). An inventory ratio of less than one indicated that the net working capital of the Federation was greater than its inventory in most of the years. The acid test ratio indicated a fair liquidity position of the cooperative.

Profitability

The liquidity analysis of the Federation reveals the ability to meet its financial obligations and as such do not reflect the profitability aspect. Hence, profitability ratios were used to analyse the overall profitability of the oilseeds Federation. Three different profitability ratios viz. net profits to total assets, net profit to fixed assets and net profits to owned funds were used. The analysis indicated that during the first three years of operation, the Federation earned a net profit but subsequent to 1986-87 it incurred continuous losses as indicated by the negative values of the profitability ratios. This shows inefficiency in the utilization of the total assets in terms of profitability. If the present situation is allowed to continue, the organization may not be in a position to protect its equity. Therefore, it is suggested that the management has to take early measures to check this adverse trend and to prevent the threat of liquidation of the enterprise.

Turnover

In order to study the operational efficiency of the Federation, working capital turnover and inventory turnover ratios were used. Table-1 reveals that there was no consistency in the business operations during the period under study. Eventhough, the working capital ratios have increased in the initial years to reach the maximum (14.83) in 1987-88, it declined drastically in the later years. Similarly, the inventory turnover ratios have increased over the years signifying excessive inventory or overinvestment in inventory. This suggests the need for the adoption of an aggressive

marketing strategy by the Federation.

In addition to the above measures, other financial ratios such as paid up share capital to annual sales, total expenses to gross income, total assets to total liabilities and net worth were computed to assess the operational strength of the Federation. Except the ratio paid up share capital to annual sales, other indicators such as gross ratio, net capital ratio and net worth together have revealed that there was an overall decline in the efficiency of the financial operations of the Federation.

Principal Component Analysis

In view of the numerous ratios computed to measure the performance of KOF, principal component analysis was employed to identify the important indicators in order to aid more meaningful interpretation of the overall performance. As indicated in the previous section, principal component method can be useful in identifying and measuring the basic patterns of relationship in a data set by reducing the same into new variables called principal components which are linear combinations of the original variables. Each principal component extracts the maximum amount of variance and gives the smallest possible residuals. The first component so extracted explains as much as possible of the total variance in all variables. The second component is chosen so as to be uncorrelated with the first, and to explain as much possible of the residual total variance and so on. The number of components taken up for interpretation in principal component analysis generally depends on their aggregate explanatory power. Therefore, researchers using this technique attempt to minimize the number of components needed to provide satisfactory explanation of the phenomena under investigation. In view of these facts, we have confined the analysis to the first three components which appeared sufficient and substantive for the purpose on hand. Table 2 presents the percentage of variance explained by different components. It could be seen that five components explained 100 per cent of the variation of the financial performance of the KOF and three components together explained 93 per cent of the combined variations of all the performance indicators covered in the analysis. It follows therefrom that the observed variations are represented approximately by the first three components and hence the explanatory power of these components can be regarded as fairly adequate.

Table 2. Percentage of variance explained by the first five components of performance indicators of KOF

Principal components*	Latent roots	Percentage variance	Cumulative variance
P_1	7.24	51.71	51.71
P_2	3.32	23.69	75.40
P_3	2.39	17.06	92.46
P_4	0.84	5.96	98.42
P_5	0.22	1.58	100.00

* Components are indicated by the Symbol P with an appropriate subscript.

Table 3. Matrix of factor loadings of performance indicators of KOF

Sl. No.	Financial indicators	P_1	P_2	P_3
1.	Total liabilities to owned funds	-0.257	-0.004	0.460
2.	Fixed assets to owned funds	-0.295	0.077	0.042
3.	Current assets to current liabilities	0.267	0.348	-0.185
4.	Inventory to net working capital	-0.270	0.214	-0.119
5.	Net profits to total assets	-0.297	-0.290	0.175
6.	Net profits to owned funds	0.325	-0.230	0.131
7.	Net profits to total sales	0.322	-0.267	-0.032
8.	Total sales to total working capital	-0.258	-0.010	-0.436
9.	Annual sales to average inventory	-0.287	0.172	-0.286
10.	Paidup share capital to annual sales value	0.187	0.417	0.260
11.	Total expenses to gross incom	0.034	0.209	0.170
12.	Total assets to total liabilities	0.205	0.422	-0.079
13.	Acid test ratio	0.247	0.390	-0.169

Once sufficient components have been obtained, an interesting next step is to identify the content and nature of the relationships. For this purpose, the results of the principal component analysis are summarised in the matrix of common factor coefficients presented in Table 3. In the table, component coefficients also known as factor loadings, indicate the net correlation between each component and observed variables. A factor loading value greater than ± 0.30 is regarded as significant (Koutsoyiannis, 1977) and considered for interpretation. A broad similarities can be discerned on the careful observation of the coefficient matrix of the principal components. The ratios of net profits to owned funds, net profits to total sales and total expenses to gross income were important in component one. In component two, association was observed in the ratios of current assets

to current liabilities, paid up share capital to annual sales value, total assets to total liabilities and acid test ratio. Similarly, strong relationship existed between total liabilities to owned funds ratio and total sales to working capital ratio in component three. The broad similarities of the three groups of variables exhibited the following important dimensions associated with the performance.

The first is the profit dimension as it brings together net profit to owned funds, net profits to sales and total expenses to gross income. It is interesting to note that the first two variables are positively related to each other, while they are negatively (or inversely) associated with total expenses to gross income (-0.324). The ratio, total expenses to gross income is a measure of per unit total cost of the business which naturally has an inverse effect on the profit as well as the performance of the enterprise. The second component broadly captured the liquidity dimension of the performance. Hence current ratio associated with high acid test ratio has a bearing on the short run liquidity. Paidup share capital in a cooperative increases the liquidity which has a favourable effect on sales. The negative association observed between liabilities to owned funds and sales to working capital in component three is quite prevailing. The greater the comitment of owned funds to meeting obligations, lower will be the sales on account of working capital constraints. However, the Federation in its efforts to boost sales would attempt to achieve greater turnover of its limited capital. This component captures the leverage-cum-activity dimension. Thus it was evident that profitability, liquidity and leverage-cum-activity were the most important dimensions governing the performance of the KOF.

Conclusion and Policy Implications

The ratio analysis revealed that the financial performance of the KOF was sound in the initial years of its operation but it could not sustain this performance in the later periods. This was mainly because of increase in the expenditure on management and establishment which increased the total liabilities to a greater extent. From the principal component analysis it was evident that profitability, liquidity and leverage-cum-activity were the most important dimensions of performance. This suggests that the KOF should aim at a reasonable profit, improve its liquidity position and increase the leverage supported by increased sales. These measures will improve the performance of the KOF in the long-run.

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