

maintain vitality and viability of these cooperative banks, there is a need to have comprehensive and proper supervisory control over them. A lot of studies have been conducted regarding operational performance of banks. But researchers have generally ignored to evaluate cooperative banks according to CAMELS parameters. Therefore, an attempt has been made through present study i.e. “Financial Performance of Central Cooperative Banks in Punjab: An Application of CAMELS Model”, to assess district central cooperative banks on various parameters like Capital Adequacy, Assets Quality, Management Efficiency, Earning capability, Liquidity and Systems and Control. This study will help the management of these banks and other stakeholders to assess the financial stability of the cooperative banks.

3.2 OBJECTIVES OF THE STUDY

The present research has been carried out with the overall objective of evaluating financial performance of district central cooperative banks in Punjab with the following specific objectives:

1. To analyse capital adequacy of central cooperative banks in Punjab.
2. To examine asset quality of central cooperative banks in Punjab.
3. To evaluate management efficiency of central cooperative banks in Punjab.
4. To examine earning capability of central cooperative banks in Punjab.
5. To analyse liquidity position of central cooperative banks in Punjab.
6. To evaluate systems and control in the central cooperative banks in Punjab.

3.3 RESEARCH METHODOLOGY

The following research methodology has been used to achieve the objectives of this study:

3.3.1 SCOPE OF STUDY

The present study is confined to the state of Punjab which is leader in agriculture production and is popularly known as the bread basket of India. Cooperative credit structure in Punjab is of two types i.e. long term and short term structure. Long term structure deals with the infrastructure development in agriculture. It does not deal in other banking operations. On the other hand, short term credit structure provides short term loans known as ‘crop loan’ and also finances allied activities. Now a days, they have been allowed to finance infrastructure development also. This short term credit structure is a three tier system. At the village level, primary agriculture cooperative societies are providing multi services along with credit facility. On the top of cooperative credit structure edifice is apex bank

(Punjab State Cooperative Bank) which is a policy making body and also acts as a coordinator on behalf of short term cooperative credit structure with NABARD and government of Punjab. Actual banking business is conducted by district central cooperative banks. Major players in cooperative credit edifice are cooperative banks and their efficiency, viability and productivity affects the total cooperative credit structure. Therefore, the present study is confined to district central cooperative banks. As on 31-03-2013, there were 20 district central cooperative banks (DCCBs) in Punjab. For the purpose of present study, all the DCCBs have been taken into account. The list of DCCBs in Punjab as on 31.3 2013 is shown in table 3.1.

Table 3.1 List of Central Co-operative Banks in Punjab

S.No	Name of the DCCB
1	The Amritsar Central Co-operative Bank Ltd., Amritsar
2	The Bathinda Central Co-operative Bank Ltd., Bathinda
3	The Faridkot Central Co-operative Bank Ltd., Faridkot
4	The Ferozepur Central Co-operative Bank Ltd., Ferozepur
5	The Fatehgarh Sahib Central Co-operative Bank Ltd., Fatehgarh Sahib
6	The Fazilka Central Co-operative Bank Ltd., Abohar
7	The Gurdaspur Central Co-operative Bank Ltd., Gurdaspur
8	The Hoshiarpur Central Co-operative Bank Ltd., Hoshiarpur
9	The Jalandhar Central Co-operative Bank Ltd., Jalandhar
10	The Kapurthala Central Co-operative Bank Ltd., Kapurthala
11	The Ludhiana Central Co-operative Bank Ltd., Ludhiana
12	The Mansa Central Co-operative Bank Ltd., Mansa
13	The Moga Central Co-operative Bank Ltd., Moga
14	The Muktsar Central Co-operative Bank Ltd., Muktsar
15	The Nawanshahar Central Co-operative Bank Ltd., Nawanshahar
16	The Patiala Central Co-operative Bank Ltd., Patiala
17	The Ropar Central Co-operative Bank Ltd., Ropar
18	The Sangrur Central Co-operative Bank Ltd., Sangrur
19	The Tarn Taran Central Co-operative Bank Ltd., Tarn Taran
20	The Mohali Central Co-operative Bank Ltd., Mohali

Source: Punjab State Cooperative Bank Ltd., Chandigarh.

3.3.2 PERIOD OF STUDY

For the present research, secondary data for eight years from 2005-06 to 2012-13 were taken. This period of 8 years is sufficient enough to study the trend and impact of various factors on financial performance of an organisation.

3.3.3 SOURCES OF DATA

The data were collected from:

- The annual reports of the respective DCCBs.
- Comparative Statistics of State and Central Cooperative Banks of Punjab published by The Punjab State Cooperative Bank Limited, Chandigarh.
- Reports of annual conferences on performance analysis of district central cooperative banks in Punjab, prepared by Agriculture Cooperative Staff Training Institute, Punjab.

Some information was collected by interacting with chief executives and policy-makers of DCCBs.

3.4 TECHNIQUES OF ANALYSIS

For the purpose of analysis, the following tools have been used:

1. Mathematical Tools
 - i) Ratio analysis
2. Statistical Framework
 - i) Simple statistical techniques
 - ii) Advanced statistical tools

3.4.1 RATIO ANALYSIS

Ratios are the tools to judge the comparative performance of an enterprise. It can be defined as a relationship between two arithmetical figures. For achieving objectives of study, ratios have been calculated for the various parameters of CAMEL model. The following is the list of ratios used for analysis of data:

3.4.1.1 CAPITAL ADEQUACY RATIOS

- ❖ Capital Adequacy Ratio
- ❖ Tier I to Risk Weighted Assets Ratio
- ❖ Tier II to Risk Weighted Assets Ratio

3.4.1.2 ASSET QUALITY RATIOS

- ❖ Gross NPA to Total Advances Ratio
- ❖ Net NPA to Net Advances Ratio

- ❖ Substandard Assets to Total Advances Ratio
- ❖ Doubtful Assets to Total Advances Ratio
- ❖ Loss Assets to Total Assets Ratio
- ❖ Earning Assets to Total Assets Ratio

3.4.1.3 MANAGEMENT EFFICIENCY RATIOS

- ❖ Total Advances to Total Deposits Ratio
- ❖ Profit per Employee Ratio
- ❖ Profit per Branch Ratio
- ❖ Business per Employee Ratio
- ❖ Business Per Branch Ratio
- ❖ Cost of Management per Branch Ratio
- ❖ Cost of Management per Employee Ratio
- ❖ Interest Income per Branch Ratio
- ❖ Average Yield on Investment Ratio
- ❖ Average Cost of Funds Ratio
- ❖ Cost of Management to Average Working Funds Ratio
- ❖ Average Cost of Deposits Ratio
- ❖ Average Cost of Borrowings Ratio

3.4.1.4 EARNING CAPABILITY RATIOS

- ❖ Net Profit to Owned Funds Ratio
- ❖ Net Profit to Average Working Funds Ratio
- ❖ Interest Income to Total Income Ratio
- ❖ Net Profits to Total Assets Ratio
- ❖ Provisions for NPA to Total Income Ratio
- ❖ Non Interest Income to Working Capital Ratio
- ❖ Cost of Management to Total Income Ratio
- ❖ Average Yield on Loans Ratio
- ❖ Average Yield on Investment Ratio
- ❖ Cost of Management to Total Expenditure Ratio
- ❖ Interest Expanded to Total Expenditure Ratio

3.4.1.5 LIQUIDITY RATIOS

- ❖ Quick Liquid Assets to Total Assets Ratio
- ❖ Quick Liquid Assets to Total Deposits Ratio
- ❖ Quick Liquid Assets to Demand Deposits Ratio

- ❖ Government Securities to Total Assets Ratio
- ❖ Cash to Deposits Ratio
- ❖ Time Deposits to Total Deposits Ratio
- ❖ Loans to Earning Assets Ratio

3.4.2 STATISTICAL FRAMEWORK

3.4.2.1 SIMPLE STATISTICAL TECHNIQUES

Simple statistical techniques such as percentages, simple averages i.e. mean and standard deviation have been used for data analysis.

3.4.2.2 ADVANCED STATISTICAL TOOLS

Being a time series data, trend analysis was mainly employed to analyze the data.

3.4.2.2.1 TREND ANALYSIS

In order to assess the existing trends and to estimate the future trends in different parameters under study, trend analysis was applied.

(i) COMPOUND GROWTH RATES

The regression model in its exponential form was worked out to find out the Compound Growth Rates of different performance indicators of these banks. Regression model was applied as under:

$$Y = ab^t u$$

Where,

Y = a performance indicator

a = a constant term

t = time variable (No. of years under study)

b = regression coefficient of time

u = a random error term

Log transformation of the above function is:

$$\ln Y_t = \ln a + t (\ln b) + e$$

Where,

$$\ln b = \ln (1 + r) \text{ and}$$

$$r = [\text{antilog} (\ln b) - 1] \times 100$$

$$\text{CGR (\%)} = [\text{antilog} (\ln b) - 1] \times 100$$

The compound growth rates were tested to determine their statistical significance with the help of t-test. **Level of significance was taken at 5%.**

(ii) Trend Equation

Trend equations were developed in form of linear regression to make future projections of different performance indicators as under:

$$Y = a + bt + u$$

Where,

Y = a performance indicator

a = a constant term

t = time variable (No. of years under study)

b = regression coefficient of time

u = a random error term

Then the coefficient of a and b were used to make future projections for the year 2016-17 and 2019-2020.

iii) Standard Error of the Mean

The Standard deviation of the sampling distribution of means is called the standard error of the means.

SE = Standard deviation / Sq root of sample size

iv) Coefficient of Variation

Coefficient of variation was computed by applying the following formula:

$$C.V = \frac{S.D}{Mean} * 100$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\sum d^2}{N}}$$

$$d = (X - \bar{X})$$

\bar{X} = Mean value of the variable

N = Number of observations (years)

The above calculations were made with the help of MS Excel along with SPSS 20. Thus, various statistical tools were used to analyze secondary data collected for the evaluation performance of selected DCCBs in terms of CAMEL Model.

3.5 LIMITATIONS OF THE STUDY

The present research has been conducted under certain limitations generally found in the study of a topic of this nature where no study had been conducted before. Main limitations faced while undertaking the analysis were as follows:

- Due to resource and time constraints, as well as easy accessibility and convenience of the researcher the study was confined to the state of Punjab only.
- Relevant published data of selected DCCBs have been collected for eight years i.e. from 2005-06 to 2012-13.
- Financial information collected for the study is based on secondary data and carries all limitations inherent in secondary data.
- Research also subject to limitations pertaining to ratio analysis tools used in the study.

References

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